EFFECTIVENESS OF A PSYCHOSOCIAL REHABILITATION PROGRAMME FOR IRAQI REPATRIATED PRISONERS OF THE IRAN-IRAQ WAR, 1980-1988.

By

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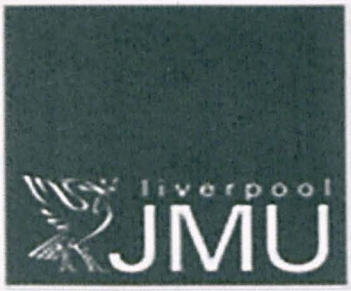

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2012

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ABSTRACT

The literature related to war captivity has reported that most former prisoners of war are still distressed by memories of traumatic experiences of their capture and captivity decades after repatriation. In addition, the earliest investigations of the effects of this traumatic experience on those repatriates have revealed that they are still suffering from numerous psychological and physical disturbances which are directly related to the traumatic experiences of their captivity.

The present study has tested the effectiveness of a psychosocial rehabilitation programme on Iraqi former prisoners of the Iran-Iraq war, 1980-1988. Ninety two participants participated in this study and were randomly divided in two groups; intervention group and control group. The intervention group underwent a 12-week intervention, for an hour a week and completed a questionnaire on 4 occasions; before starting the intervention; half-way through the intervention (6 weeks); at the end of the intervention (12 weeks); and finally, 9 months after completion of the programme.

The results of this study indicate that the majority of IRPOWs have some level of: PTSD (78.3%); anxiety (62.0%); and depression (63.0%). 85.9% of IRPOWs have a degree of satisfaction ranging from 2-5; and 80.5% of them have a good number of support persons (3-6), and 95.5% of them have medium to good levels of coping.

These results reveal that many IRPOWs are still displaying problematical symptoms despite good levels of social support.

The study found no differences at pre-intervention between the Control group and Intervention group for demographic characteristics (current age, age at capture, duration of captivity, time since release, and monthly income, level of education, and rank), PTSD, anxiety, or depression. This gives the researcher confidence that the sampling was effective in eliminating selection bias between the control and intervention group and that change in PTSD and other conditions are likely to be related to the intervention.

The study did not find any strong associations between demographic characteristics and outcome variables (PTSD, anxiety, and depression), suggesting that there was no effect of the age of IRPOWs at the time of capture or at the time of the study, duration of captivity, the period since release, rank, level of education, and monthly income on the severity of the symptoms of anxiety and depression or on the level of PTSD.

The main finding of the study was that there were changes in levels of PTSD, anxiety and depression over time and following the intervention; with significant differences between the control group and Intervention group (For PTSD: the main time effect: F= 18.39, P= 0.01; between groups effect: F= 16.93, P= 0.01; and groups interaction overtime: F= 28.64, P= 0.01, for Anxiety: the main time effect: F= 6.41, P= 0.01; between groups effect: F= 4.20, P= 0.05; and groups interaction overtime: F= 30.93, P= 0.01, and for Depression: the main time effect was NS: F= 1.94, P= 0.16; between groups effect: F= 6.33, P= 0.01; and groups interaction overtime: F= 8.62, P= 0.01). It suggests the intervention was successful in reducing PTSD symptoms but there was a lack of any differences for anxiety and depression. This might have been due to the difficult security situation which made the increased travel that the intervention group had to undertake very stressful.

The study recommends that improved mental health services should be provided in primary care and confidential counselling provided through employee-assistance programmes for IRPOWs; construct further psychosocial rehabilitation programmes for IRPOWs in other Iraqi provinces; and set plan to identify and evaluate the psychological conditions for other IRPOWs groups, including those living in other towns and rural areas and to set follow-up studies to explore their progress.

List of Abbreviations

Term	Details
POW	Prisoner of War
PTSD	Posttraumatic Stress Disorder
Ex-POW	Former prisoner of War
IPOW	Iraqi Prisoner of War
IRPOW	Iraqi Repatriated Prisoner of War
ICRC	International Committee of Red Cross
NCRC	National Committee of Red Cross
DSM	Diagnostic and Statistical Manual of Mental Disorders
DSM-IV- TR	Diagnostic and Statistical Manual of Mental Disorders 4th Edition, Text Revision
NCPTSD	National Centre for PTSD
APA	American Psychiatry Association
SCL-90	Symptoms Checklist-90 Questionnaire

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CHAPTER ONE

INTRODUCTION

1-Introduction

"The war is the woe of human being"
(Držić, 1979: 10)

1.1: Psychological Risk of War

War is the worst action known to mankind. Throughout our long history it has brought about the killing and maiming of human beings, the loss of powers and their disfigurement. It also causes the destruction of civilization and stirs up hatred and resentment amongst people and passes psychological and social problems on to future generations. (Farhan, 1979)

Throughout history, war has been considered as a state of hostilities between nations, which is characterized by the use of military force (Dalton, 2006). As a tradition, it is described as "undertaken for the purpose of overpowering another" (Lee, 2008, p. 583). War can change the relations from relatively harmonious one to an armed contention (Cassese, 2001).

Military service is considered a unique occupation with a wide range of health risks. So, injuries and illnesses experienced in the time of military service could result in long-term mental and physical disabilities for military servicemen (Deeter & Gaydos, 1993).

The British army in 1861 established a place, which was 100 miles north-east of Mumbai in India, as a base and sanatorium. This base acted as a transit camp for the British army who were waiting for a passage to Britain after finishing their tours of duty. In this camp they had to wait for a long time to be sent back to their homeland. They had been confined to a restricted and constrained life in the hot days of summer so some soldiers had broken down and had behaved bizarrely (Richards, 1936). Their behaviour could be related to the heat experienced during the sanatorium rather than the hard days of restrictions on movement and activity (Jones & Wessely, 2010). So the hardships and physical and psychological sufferings are related strongly to the life of military.

Joining in military conflicts is one of the extraordinary risks of military service. Military conflict means the exaggeration of these risks which pose as threats to the servicemen's integrity and even lives. In addition, participation in combat can have dramatic costs for the mental health and well-being of military personnel. Witnessing or participating in operations of fighting such as killing, torture, and extensive destruction, and experiencing unanticipated and at times constant threats to individual's life; can be extremely distressing with important mental health costs (Pols & Oak, 2007).

Follow-up studies of veterans, who participated in military conflicts, began in the last century and immediately after the end of the First World War, 1914-1918 in order to understand the vulnerability of participating in the war. The first study was conducted in France by Salmon and Fenton in 1919 and then 1924 revealed that post-war neurosis and post-war adjustment difficulties with symptoms such as; tremors, tics, speech defects, weakness, jumpiness, insomnia, inability to concentrate, and memory disorders were the main mild symptoms; fatigue, severe headaches, lack of ambition, and depression were the moderate symptoms, and; dementia psychopathic personality and epilepsy were the severe symptoms. One of the significant risks of military service in wartime that is the focus of this thesis is to be captured and imprisoned by enemy forces.

In 1915, during the First World War, German psychiatrists reported that they did not find continuity in symptoms of hysteria reported by German soldiers, who came directly from the front line and visited the hospital station, and the French prisoners of war held in captivity who came from the same front line circumstances (Lerner, 1930).

Combat exposure during the Second World War has been revealed to induce enduring mental and physical health. Elder et al. (1997) reported that combat exposure predicted decline in physical health and death in the 15 years after the war. In addition, a longitudinal study of Harvard University graduates found 56% of the Second World War veterans who experienced intense combat were chronically ill or dead by the age of 65 (Lee et al., 1995).

Lee et al. (1995) reported that the Second World War veterans were at risk of psychological problems especially PTSD, and the degree of combat exposure influenced the severity of PTSD. According to DSM-IV (APA, 1994), PTSD has three clusters of symptoms which could be experienced by those veterans and these are: arousal, re-experiencing and avoidance. Arousal symptoms include irritability or outbursts of anger, difficulty concentrating, and sleep disturbance; Re-experiencing symptoms include flashbacks, intrusive thoughts, nightmares, and emotional distress or physiological arousal when reminded of the trauma; and Avoidance symptoms include avoiding thinking of the event or reminders of the event, low interest in activities, detachment or distance from others, and emotional numbing. In addition PTSD symptoms can be enduring and their persistence can last for 75 years after the First World War (Hamilton & Workman, 1998). A study of Dutch Second World War veterans reported that after 47 years 59% of them are still suffering PTSD (Bramsen & van der Ploeg, 1999).

Swank and Marchand (1946) conducted a study of US soldiers on the beaches of Normandy during the Second World War found that after 60 days of incessant battle, 98% of the surviving soldiers had become psychiatric casualties and the remaining 2% were recognized as aggressive psychopathic personalities.

For the Korean War veterans, Ikin et al. (2007) reported that approximately five decades after the Korean War, Australian veterans were experiencing obviously worse mental health, as demonstrated by extreme degrees of depression, anxiety, and PTSD. Their study's findings show PTSD prevalence of 33% in Australian Korean War veterans. In general, Korean War veterans have experienced a 21% higher mortality rate than other Australian men, and between 13% and 23% higher cancer incidence. In addition, among survivors, psychological disorders appear to be mainly extreme, medical conditions and hospitalizations are also high. Quality of life and life satisfaction is also poorer than experienced by other Australian men (Fontana & Rosenheck, 1994; & Sim et al., 2005).

The US House Committee on Veterans Affairs reported in 1979 after the 96th Congress for the Vietnam veterans that from the 3 millions soldiers who participated in Vietnam War, about half of them may be suffering from a stress disorder and for those who are younger than 34 years have a suicide rate 23% higher than nonveterans of the same age group; the number of hospitalized veterans identified as alcoholics or problem drinkers has increased from 13% in 1970 to 31% in 1977. 39% from 10,000 of those veterans have been treated as in-patients and 55% of another 13,000 veterans were receiving outpatient care in Veterans Administration hospitals for drug dependence problems. Furthermore, there are about 37,500 veterans on parole, 250,000 under trial supervision, and 87,000 awaiting trial (Walker, 1981). A law enforcement assistant agency study proposes that readjustment problems of the Vietnam-era veterans have led to illegal actions, but it is difficult to approximate how many Vietnam veterans are in legal difficulty because of emotional problems secondary to their war experiences (Walker, 1981).

Most recent studies about the wars at end of the 20th century and the beginning of 21th reported important information regarding the vulnerabilities of participating in wars and have revealed many disorders which have affected the psychological status and the normal life of soldiers participating in these wars. Iversen, et al. conducted a study in 2009, with 1,107 participants from UK and US militaries, to determine the prevalence of mental disorders and PTSD in UK military deployed in Iraq and compared them with their US counterparts. He reported that the weighted prevalence of mental disorders was 27.2% among those soldiers and 4.8% for PTSD and the most common diagnoses were alcohol abuse (18.0%) and neurotic disorders (13.5%). There was an increased risk of PTSD for reservists who deployed to Iraq and other recent deployments compared to reservists who did not deploy. The prevalence of depression, PTSD symptoms and subjective poor health were similar between regular UK and US Iraq combatants. The UK sample was older than the US sample but both of samples were similar with regards to gender and marital status. Deployment experiences of regular forces were broadly similar, except that UK personnel were more likely to report that they felt in danger of being killed. US reserve forces reported

witnessing someone wounded or killed and discharging their weapon significantly more than UK reserves, while feeling in danger of being killed was more frequently reported among UK reserves (Iversen, et al., 2009). The study reported lower rates of mental health disorders in female personnel but this might be due to the small number of female participants in the sample.

A relationship between confinement in captivity and psychological disorder in the military forces had been recognized in the late Victorian era and was reflected in the idiom *doolally*, a common word for madness (Richards, 1936).

During and after the First World War, for political reasons and to keep high morale for soldiers joining in the war, the psychological symptoms were kept unrevealed. Fritz Mohr, a German psychiatrist, claimed after examining 12,000 British and French POWs that he had not found a single case of neurosis among those POWs. In addition, Karl Wilmanns, another German psychiatrist, reported only five cases of neurosis among a population of 80,000 POWs (Lerner, 1930). Furthermore, Oppenheim, a German psychiatrist, who believed that traumatic neurosis was caused by a brain lesion, was forced to admit after having examined large numbers of POWs that there were no psychological disorders apparent in those POWs (Lerner, 1930)

German POWs, who were captured and confined in British camps, were treated by British doctors who claimed that they had not found any evidence of traumatic neurosis within German POWs (Jones & Wessely, 2010). Other physicians claimed that soldiers pretended symptoms of shell-shock. A British physician called Wiltshire who had served in France reported that British soldiers welcomed a diagnosis of shell-shock because it secured a safe period in hospital away from the risk of being at the frontline (Lyle, 1937). But for the German POWs examined by Wiltshire, he claimed that those POWs did not need to show any symptoms of shell-shock because they had already secured a safe place (Wiltshire, 1916).

The beliefs that a wound and captivity would save from harm of neurosis persisted into the Second Wold War's doctors' view (Ross, 1941). In addition, Henderson & Gillespie (1943) argued that psychoneuroses were rare among prisoners of war. Furthermore,

Brigadier Bulmer, a British consulting physician reported that among large numbers of wounded, sick and captured German soldiers there were few cases of psychoneuroses (The National Archives, 1944).

All these justifications of not finding; the symptoms of neurosis in German prisoners of war by British physicians; and the evidence of shell-shock in British prisoners of war by German psychiatrists were due to the conventions of war at that time. In addition, soldiers captured by the other party considered themselves combatants who should still adhere to the principles of the military and patriotism which prevented them admitting any psychological symptoms or disturbances, such as repeated fears, troubling dreams, anxiety and depression. But all these conclusions drawn by physicians and psychiatrists during and after the First World War have since been contradicted by clues that appeared in war pension files for those POWs. And after the Armistice the medical records for British veterans, who had been held as POWs, revealed that they had suffered from many psychological symptoms (Jones et al., 2002). These had not been declared until 1916. After the Munich Conference, that was held after the deterioration of conditions in German camps. Indeed, British and French servicemen taken prisoner and held in German camps were the subject of a psychiatric conference held at Munich in September 1916. These poor conditions resulted from the Allied naval blockade which cut the import of foodstuffs to Germany and due to this situation large numbers of British POWs were suffering from long periods of starvation (Spoerer, 2006). So according to the British official statistics, from 98,000 British POWs held in Germany camps during the First World War 6.4% (392) of officers and 7% (10,856) of other ranks died in captivity. In addition, from 45,000 of British POWs held in Japanese camps 26% to 32% of them died in captivity (War Office, 1922; & Daws, 1994).

Bing and Vischer (1919) studied British POWs, who had been held in neutral Switzerland, and identified psychological symptoms such as loss of concentration, irritability, disturbance of memory, exhaustion and intellectual instability. Although Bing and Vischer reported that many of the British POWs give the impression of profound changes in personality and conceptualized the disorder as psychoneuroses

associated with mental exhaustion (Bing & Vischer, 1919). All these clinical remarks had not affected post-war policy regarding the treatment of British repatriates. So the UK government did not make any special provision for those repatriated POWs who had been treated the same as any other veterans (TNA, 1919 & Pether, 1945). In addition, the British war Office refused to shoulder the responsibility for the rehabilitation of British former prisoners of war (Sir Grigg, 1944). But, the declaration of Protected British POWs in 1943 put the authorities under pressure to reassess this convention. Abnormal behaviour in servicemen of formerly good character made both doctors and chief officers question their conception of the mentality of prisoners of war. To examine the influences of captivity, the newly formed Directorate of Army Psychiatry (DAP) approved a controlled study of repatriated prisoners of war. In addition, army psychiatrists categorized what they characterized as an adjustment disorder, a psychological form of "caisson disease", which needed a re-education programme rather than prescribed psychological treatment. Although their findings influenced policy and management in the immediate post-war period, it was not until the 1980s and the recognition of PTSD that POWs was considered at inherent risk of psychiatric disorder (Jones & Wessely, 2010).

Even though the majority of repatriated British POWs were not considered in need of psychiatric treatment, a minority were referred to military hospitals where their symptoms were theorized as a form of 'release syndrome'. Between January and May 1944, Major W.H. Whiles investigated 100 consecutive POW admissions to Hollymoor Military Psychiatric Hospital, Northfield. Common symptoms included poor concentration, irritability, apathy and difficulty in making social contacts, preoccupation and resentment (Whiles, 1945). However, 'previous personality factors' were identified as a root cause: 50 per cent of cases had a 'neurotic family history', 60 per cent had shown 'pronounced neurotic traits in childhood' and 25 per cent had suffered an earlier breakdown. Supported by the evidence of doctors who had themselves been in captivity, this became an orthodox view in the immediate post-war period (Cochrane, 1946).

In May 1945, to supplement the CRUs, a 'neuroses unit' for repatriated POWs was opened at the Southern Hospital, Dartford. Over eleven months, under the direction of Maxwell Jones, a Maudsley psychiatrist, it treated 1,200 servicemen released from camps in north-west Europe (Maxwell, 1952). Occupational therapy, both in hospital workshops and in local businesses, was the main activity, complemented by community groups and social events such as dances and plays (Maxwell, 1946). Although no methodical study of outcomes was conducted, Tanner and Jones found that POWs had greater difficulty adjusting to civilian life than other soldiers, common symptoms being fatigue, loss of energy, anxiety and poor concentration (Tanner & Jones, 1948).

The first study of the veterans of the Second World War was conducted in the United States of America by Brill and Beebe in 1944. This revealed types of disorders such as; anxiety, hysteria, neurasthenia, hypochondriasis, obsessive-compulsive, phobia, reactive depression and combat exhaustion.

In 1943, during the Second World War, the British military authorities became aware of problems emerging with repatriated officers who returned to duty. Those returned officers, had excellent military records, but also had high rates of disciplinary and invalidity incidents, which suggested that confinement, had adverse results on them (Ahrenfeldt, 1958). To tackle this problem an article written by Captain Collie, who himself was a former prisoner of war, concluded that prolonged confinement often caused minor mental abnormalities and had called for a programme of rehabilitation, with three months of treatment, which could affect a total and long-lasting therapy in even the most difficult cases (Collie, 1943)

In an attempt to interpret what happened after repatriation from captivity Major Newman, a British surgeon, who was also a former POW, related the psychological disturbances after repatriation to the serious psychological problems caused by the insufficient time available to adjust to the fast changes their new lives. He suggested that problems of adaption could manifest in irritability, restlessness, disrespect for authority and irresponsibility. But he believed that all these symptoms would vanish

and that the majority of these problems should disappear after no more than six months (Newman, 1944).

1.2: Psychological Disorders in POWs

A traumatic experience outside the scope of the usual human experience such as; natural disasters (e.g. flood, earthquakes); man-made disaster (e.g. fires, road accidents, death camp, combat veterans, torture, and bombing) may result in a traumatic disorder (Mandic, 1995; & Videbeck, 2001). Psychological reactions after traumatic experiences have been acknowledged during the last decades and the vulnerability of repatriated POWs to psychological difficulty has been a topic of on-going study in modern times, for former POWs have reported more severe psychological disturbances and more problems in functioning than the other combatants (Port, et al., 2001; & Solomon, 1993).

According to Wagnon (2003) the shock of capture is of the most traumatic overwhelming, stupendous, psychological reaction that can happen to an individual. In addition, it is the complete and cutting off of all the man has ever known, all the man has ever dealt with, all that has ever been familiar. Furthermore, some prisoners of war (POWs) have physical injuries from combat before capture or at the time of capture.

War imprisonment and war captivity are traumatic experiences perpetrated on human beings that are experienced subsequent to brutal combat. This prolonged and repeated traumatisation is generally considered to have the potential to cause various psychological difficulties, in particular PTSD (Dent et al., 1989; Hunter, 1978; & Summerfield, 1996).

Psychological reactions after traumatic experiences have been acknowledged during the last decades and the vulnerability of repatriated POWs to psychological difficulty has been a topic of ongoing study in modern times. This is primarily because former POWs have reported more severe psychological disturbances and more problems in functioning than the other combatants (Port et al., 1993).

Following repatriation some former POWs develop psychological disorders, most commonly; medico-psychiatric disorders due to illness, physical trauma, or nutritional deficit; PTSD; adjustment disorder; depression; anxiety disorders; substance abuse, and; family problems. The severity of captivity and the presence or absence of social supports during and after the POW experience play major roles in the recovery or illness that may occur after repatriation (Engdahl et al., 1997; Kang et al., 2006; Page, & Miller, 2000; Robson et al., 2009; & Ursano & Rundell, 1990).

Results of previous studies of the prisoners of prior wars have documented an important percentage of mortality ranged 18-28% and increased morbidity ranged 31-43% after release from captivity (Hunter, 1978). The POWs are at increased risk of persistent psychiatric and physical symptoms and disorders (Ursano & Rundell, 1990).

A considerable amount of research from various wars all over the world found consistently that the traumatic experiences suffered by servicemen captured as prisoners of war are among the most stressful war-related events. In addition, clinical findings revealed a high prevalence of psychiatric disabilities as well as alteration in learning, memory, and other problem-solving performances after more than 40 years after interment (Sutker, Allain, & Johnson, 1993). These findings point to frequently occurring depressive and anxiety disorders and particularly posttraumatic stress disorder among 56% of surviving prisoners held in Germany during the Second World War, at least 50% of POWs survivors of Japanese captivity during the Second World War, and in 90% to 100% of servicemen captured in the Korean Conflict (Zeiss & Dickman, 1989; Goldstein et al., 1987; & Sutker, et al., 1990).

Empirical research of ex-prisoners of war has clearly demonstrated that the stress of captivity profoundly impairs quality of life for many years after release, and can lead to the development of severe mental health problems such as posttraumatic stress disorder. Furthermore it leads to psychiatric symptoms such as suspiciousness, apprehension, isolation, detachment and hostility (Eberly, & Engdahl, 1991; Engdahl, et al., 1991; Goldstein, et al., 1987; Kluznik, et al., 1986; & Sutker, et al., 1991).

Many soldiers were captured during the Second World War (WWII), Korean War, Vietnam War and the Gulf War, normally as a result of being shot down or captured during front line engagement. POW's from these conflicts have been subjected to different forms of physical and psychological torture such as starvation, brain washing, physical mutilation, humiliation, sexual degradation, electrocution, and severe sickness (Al-Ameri and Mohammed, 2005; Al-Hadythi, 2000; Al-Jadir,1995; & Al-Obaydi, 2000) and these acts of torture have been reported to result in post-traumatic stress disorder (Jenkins, 2003).

It is argued that trauma can be accompanied or followed by psychological sequelae (Green, et al., 1985) and the degree of severity of a traumatic event is positively associated with potential for psychopathology (Ursano, et al., 1987). Speed, et al. (1989) conducted structured psychiatric interviews of 62 former Second World War POWs and found that 50% of former POWs in their sample met the criteria of PTSD in the year following repatriation and 29% continued to meet the criteria for PTSD 40 years later. Furthermore they identified that family history of mental illness and pre-existing psychopathology at best correlated with PTSD symptoms. In addition, the strongest predictors of PTSD were the proportion of body weight lost and the experience of torture during captivity. A study conducted by Sutker, et al. (1992) to determine the memory and cognitive performance of former POWs found that those who experienced the greatest trauma-induced weight loss, defined as greater than 35 per cent of their pre-captive weight and performed significantly worse on memory tasks than POWs who experienced less weight loss (Sutker, 1992). Moreover, Speed, et al. (1989) demonstrated that former POWs frequently develop PTSD and that for 50% who developed the symptoms, persisted for over 40 years. Speed, et al. (1989) argued that familial risk factors and pre-existing psychopathology are superseded by the overwhelming nature of the trauma; and the persistence of the symptoms for many years is a reflection of the severity of the trauma. The work of Speed, et al. (1989) is supported by authors who have identified various factors that contribute to the likely development of PTSD, such as ; prior exposure to trauma (Bremner, et al., 1993); a

history of childhood behaviour problems (King, et al., 1996; & Kulka, et al., 1990). Other factors include pre-trauma personality profile, especially personality disorders, prior to the trauma, so the trauma was merely a trigger for an exacerbation of symptoms of a pre-existing disorder (Schnurr, et al., 1999). PTSD has also been reported as having a genetic influence and that this genetic influence accounts for about one third of PTSD (Koenen, 2007; Stein, et al., 2002; True, et al., 1993). Age at the time of trauma exposure (Speed, et al., 1989; & King, et al., 1996); and post-trauma social support (Engdahl, et al., 1997; & Keane, et al., 1985); and exposure to reactivating stressors (Solomon, 1993) have all been shown to contribute the development of PTSD. Other authors referred to other factors which are related to military service; pre-military factors: Childhood physical abuse, and adult sexual trauma; during military service: greater combat exposure; post-military service: physical assault (Clancy, et al., 2006). In other words a multitude of variables and not just the traumatic event influence the likelihood of developing PTSD.

Green, et al. (1990) examined these contributions of pre-military factors, military, and post-military risk factors to PTSD and other post-war diagnoses in a sample of Vietnam veterans. Although pre and post-military factors were contributory, PTSD was related primarily to war trauma. Although the research demonstrated that risk factors other than trauma may affect posttraumatic psychiatric status, March (1990) concluded that when the trauma is less severe or limited to a single exposure, these other risk factors may decrease in significance as the severity and duration of exposure to trauma increase. March's conclusions are supported by the work of Foy and his colleagues (1987) who found that while Vietnam veterans with PTSD generally had the highest rates of family history of psychopathology, the contribution of family history was not significant for those with high levels of combat exposure. Regardless of family history of mental illness, veterans with high levels of combat exposure developed high rates of PTSD (Foy, et al., 1987). March's contentions are also supported by Ursano & Rundell (1990) who confirmed that following repatriation 67-85% of former POWs develop mental health disorders and according to their study the most commonly are; 1-

medico-psychiatric disorders due to illnesses, physical trauma, or nutritional deficit, 2- PTSD, 3- adjustment disorder, 4- depression, 5- anxiety disorders, 6- substance abuse, 7- family problems. However, Ursano & Rundell (1990) claimed that the severity of captivity and the presence or absence of social supports during and after the POW experience play major roles in the adaptation to life following repatriation (Ursano & Rundell, 1990).

Many problems of adjustment and post-traumatic symptoms can be found in POWs many years after their release (Sutker & Allain, 1995), furthermore, many veterans experience, overwhelming anger over relatively minor issues that for some is difficult to control. Such maladaptive behaviours may require intervention even years after the stress of military combat has faded (Chemtob, et al., 1997). Amongst recently released POWs the effects of the psychological trauma they had suffered from, were often masked by the feeling of relief and jubilation that accompanied release from confinement. Even when there was little evidence of residual physical pathology, however, survivors of POW camps commonly showed impaired resistance to physical illness, low frustration tolerance, frequent dependence on alcohol and drugs, irritability, and other indications of emotional instability (Hunter, 1978; & Wilbur, 1999).

POWs have moderately elevated lifetime prevalence rates of depressive disorders and greatly elevated PTSD, although their rates of hypertension, diabetes, myocardial infarction, bipolar disorder, schizophrenia, and alcoholism are not elevated (Eberly & Engdahl, 1991). However POWs who lost more than 35 per cent of their body weight during captivity had higher rates of anxiety disorder, depressive disorder, PTSD, and schizophrenia compared with other POWS (Eberly & Engdahl, 1991). Another measure of the toll taken by the prolonged stress of being in POW or concentration camp is the higher death rate after return to civilian life. Among returning Second World War POWs from the Pacific area, Wolff (1960) found that within the first six years, nine times as many died from tuberculosis as would have been expected in civilian life. In addition, four times as many died from gastrointestinal disorder, over twice as many

from cancer, heart disease, and suicide, and three times as many from road traffic accidents (Wolff, 1960).

In a retrospective study of psychological maladjustment symptoms following repatriation, Engdahl, et al. (1993) interviewed 1024 former POWs and found that half of them reported symptoms that met standard criteria for PTSD in the year following their releases from captivity and nearly a third met PTSD criteria 40 to 50 years after their wartime experiences, indicating the marked persistence of the effects of war trauma (Engdahl, et al., 1993). In spite of the clear results of this study, as a retrospective study it has limitations. These kinds of studies do not give complete understanding of what those former POWs were thinking.

In an exploratory study conducted by Rintamaki, et al. (2009) assessing the long-term effects of the prisoner of war experience on U.S. Second World War veterans, one hundred fifty-seven American former POWs completed a survey describing their experiences as POWs. Participants from the European and Pacific theatres reported that their captivity during Second World War affected their long-term emotional well-being with high rates of reflection, dreaming, and flashbacks pertaining to their POW experiences and both groups (Participants of European theatre and Pacific theatre) reported greater rumination on POW experiences after retirement. In addition, the study concluded that traumatic memories and clinical levels of PTSD have persisted for Second World War POWs for up to sixty five years after their repatriation. However Rintamaki et al. do not explain what the specifications of retirement were that aggravated a surge of traumatic memories therefore limiting its generalizability.

Investigated pre-war, wartime, and post-war predictive factors of the severity of PTSD in a community sample of former POWs, Dikel, Engdahl, and Eberly (2005) recruited 160 former prisoners of the Second World War and Korean Conflict; data were collected using structured interviews, self-report questionnaires and also military service records. The study found that the most significant predictor of current PTSD symptom severity was 'camp trauma' (Trauma during the captivity) and the most

significant predictor of veterans' ability to connect with others was closeness of childhood family relationship. This study did not report that the pre-war personality differences were predictive nor whether isolation was a pre-trauma factor that might continue to be a risk factor after the repatriation, or whether those POWs who were exposed to trauma were encouraged to communicate with others better than those who were self-isolated. One weakness of the study was that the sample was not particularly representative of the population of the Second World War or Korean Conflict soldiers.

One study from the Iran-Iraq war compared a sample of 100 Iranian repatriated prisoners with 100 non-prisoner combatants (Noorbala & Narimani, 2004). The researchers used a self-developed checklist of stress experiences and the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock and Erbaugh, 1961) as their data collection instrument. This study revealed that POWs had more moderate and severe levels of depression compared with non-prisoner combatants (36% for POWs and 10% for non-prisoner combatants) and within POWs the rate of depression among Voluntary Combatant POWs was higher than Army Personnel POWs. In addition, Non-commissioned Officers experienced more stressors than the combatants with low military rank, POWs who had experienced more stressors during captivity had more depression, and POWs with low economic status manifested more depression (Noorbala, & Narimani, 2004). In spite of the important results of this study, the sample was not well-represented as researchers recruited just one hundred Iranian POWs and the study was conducted in 2004, fourteen years after their repatriation.

Another study, conducted by Iranian researchers between 1997 and 1998, investigated mental wellbeing in Iraqi prisoners of war in Iranian POW camps (Tavallaii, Firozabadi, & Khadem, 2004). The aim of the study was to assess psychiatric symptoms and their association with some personal characteristics of POWS before and during their imprisonment. The researchers evaluated 60 Iraqi POWs using SCL-90 questionnaire and found that the most and least frequent signs were related to depression and

psychosis, respectively. There was no relationship between SCL-90 test scales and duration of imprisonment. The findings of this study revealed that:

1- IPOWs with low levels of education had more physical complaints, compulsion, depression, and anxiety;

2- Those who had responsibilities in the camp (e.g.: medical personnel, interpreters, cooks, and cleaners) had less anxiety and aggression;

3- There was a significant association between the physical diseases the IPOWs suffered from and GSI score; and

4- There existed a significant association between anxiety and GSI score in IPOWs who suffered from a previous psychiatric disorder (Tavallaii, Firozabadi, & Khadem, 2004). The study was small however and would have been more reliable if it had recruited more Iraqi POWs, especially given the large number of POWs still confined in Iran in 1998 (Al-Zaydi, 1998; Al-Shwiya, 1999; & Al-Hadythi, 2000).

War captivity may have an important impact on veterans' ability to function in the interpersonal realm (Herman, 1992), and several studies have demonstrated the direct deleterious effect of war captivity on marital life. Bernstein (1998) in a study of Second World War ex-POWs found that participants were relatively emotionally detached from their families, preferring solitude, and were prone to outbursts of anger toward their wives and children. Nice, McDonald, & McMillan (1981) reported higher divorce rates in ex-POWs compared with non-POW veterans. In addition, there is also evidence to suggest that combat exposure could result in severe adjustment problems, including antisocial behaviour (Nice, McDonald, & McMillan, 1981).

Other studies have examined the effects of war-related PTSD on marital relationships and these studies have shown that war-related PTSD casualties report greater impairments in spousal intimacy (Carroll, Roeger, Foy, & Donahue, 1985). Cook, Riggs, Thompson, & Coyne (2004) found that ex-POWs with PTSD reported more marital distress, less satisfaction within their marital relationship, and less intimacy and less constructive communication within their relationships than their counterparts without PTSD. In addition, reduced sexual desire and greater sexual dysfunction have been

reported (Johnson & Williams-Keeler, 1998; Solomon et al., 1992). As a result, the ex-POWs population tends to report lower levels of family functioning (Ford et al., 1993).

1.3: Revision of Psychological problems related to war Captivity

Psychological approaches related to war captivity established during and after the Second World War perceived no important modification during the Korean Conflict and it was not up until the late times of the Vietnam War that US psychiatrists projected a different perspective. In some measure, they were motivated to show that the effects of war tolerated well beyond the frontline itself, impairing the ability of ex-servicemen to function in civilian life (Ursano & Benedek, 2003). Studies of Vietnam veterans encouraged a re-evaluation of earlier conflicts. A milestone investigation conducted in 1975 by Gilbert W. Beebe changed thinking about the psychological effects of captivity (Beebe, 1975). He conducted a follow-up study of a representative sample of US Army veterans who had been POWs in the Pacific (1,020) and in Europe (508) during the Second World War, together with 1,528 servicemen captured during the Korean conflict. By using hospital records, Beebe found that POWs compared with controls had considerably higher psychiatric morbidity across all three groups. He concluded that the somatic effects of captivity were generally short term but psychological injury was fundamentally permanent (Beebe, 1975). No confirmation was found to back an organic brain syndrome, a form of cerebral atrophy that some researchers had suggested following investigations of concentration camp survivors. Remarkably, Beebe discovered that most former POWs had accustomed well to post-war life in terms of employment and marital relationships, though had encountered difficulties with social and recreational activities. Based on medical records, rather than retrospective self-report, Beebe's findings carried weight and had an impact on policy, such that today the Department of Veterans Affairs offer POWs special priority in health-care enrolment.

With the formal recognition of PTSD by the American Psychiatric Association in 1980, a number of US psychiatrists wanted to re-evaluate the long-term psychological effects of captivity on Second World War and Korean War veterans. For example, an

examination conducted in 1986 of 188 former POWs living in Minneapolis who had been imprisoned during the Second World War found that 67 per cent had a lifetime prevalence of PTSD (Kluznik, et al., 1986). Nevertheless, the sample had not been randomly selected and reports were not tested against military and medical records. Then Engdahl et al. (1997) studied 262 US veterans who had been confined during the Second World War and Korean conflict (Engdahl, et al., 1997). More than half (53 per cent) met criteria for lifetime PTSD, and 29 per cent currently had PTSD. Of the fifty-six POWs held in Japanese camps, 84 per cent had a lifetime prevalence of PTSD and a current rate of 59 per cent. By contrast, the 191 Second World War veterans detained in Europe had a lifetime rate of 44 per cent and current rate of 19 per cent. However, this was an investigation based on self-report and was not a random sample: 334 potential subjects had been contacted and 262 (78 per cent) agreed to participate. A follow-up study of former US POWs of the Second World War and the Korean conflict, which involved a structured clinical interview, identified amplified rates of PTSD, depression and generalized anxiety; indeed depressive symptoms were three to five times higher than in the general population and greatest in young POWs who had suffered the harshest conditions (Page, 1992).

US studies encouraged UK researchers to re-evaluate the long-term effects of imprisonment on British veterans. From a broad survey of European veterans of the Second World War, Ørner found that there was satisfactory indication to suggest a higher level of psychiatric morbidity than in comparable civilian controls (Ørner, 1992). Hughes and Neil, psychiatrists in the Royal Air Force (RAF), found that nine (30 per cent) in a group of thirty British veterans who had been prisoners of the Japanese met the criteria of PTSD (Hughes & Neal, 1994). However, this was not a random sample, being drawn from ex-service personnel attending a screen for tropical diseases, and no controls were studied (Neal et al., 1994). Thus, most retrospective studies, from whatever nation, relied on subjective memory for symptoms experienced on release from captivity. With the exception of Beebe's research, none of the Second World War

or Korean studies had access to servicemen's medical records to cooperate personal recollections.

Then how it could be described the present high rates of PTSD revealed in elderly former POWs and the proportional infrequency of psychiatric disorders identified in servicemen released from captivity in 1945. In part this may redirect reporting bias presented by current culture. In the immediate post-war era, reference to traumatic experience was discouraged in an effort to accelerate a return to peacetime functioning. Dwelling on past problems was viewed as counterproductive. Certainly, a study by Lee et al. showed than many Second World War servicemen who had experienced strong combat during the battle were able to establish successful careers as civilians despite continuing to experience a range of psychological symptoms (Lee et al., 1995). By the 1990s, most former POWs had retired. With time to reflect on their lives, unreliable accounts propose that they re-experienced these traumatic events. Combat and capture were believably the most intense experiences of their adult lives and it is not astonishing that wartime memories controlled the thoughts of elderly veterans.

1.4: Social problems related to war captivity

All human beings have psychosocial needs that must be met in order for lives to be rich and fulfilling. Without social interaction with other people and the maintenance of healthy relationships, life can be very lonely and lacking quality for many people. In addition, maintaining independence, social interaction, and companionship is necessary for healthy people: and the individuals who have maintained good health and have developed a supportive system of family and friends have a more fulfilled life. (Allender & Spradley, 2001)

Traumatic experiences not only have a great influence on the victim but also their family members. When trauma responses continue for some time without management, they can cause important troubles in a family, including domestic violence, depression, substance abuse, and physical illness (Carlson, 2005). Researchers have indicated that children of veterans with PTSD may also develop

traumatic stress responses, referred to in the literature as the trans-generational transmission of the effects of trauma (Davidson & Mellor, 2001).

Although PTSD is related to marital difficulties, this area has been given limited attention among former prisoners of war. On the whole, studies of spousal relations have revealed that war captivity has a deleterious effect on marital life (Bernstein, 1998; Cook, et al., 2004; Dent, et al., 1998; & Neria, et al., 2000). However, it remains to be determined whether these effects are due to the captivity experience or whether they are due to PTSD, which only some of the prisoners develop after captivity. Cook, Rigg, Thompson, & Coyne (2004) suggested that the marital problems of former POWs may stem from their PTSD and not solely from their captivity. These findings are in line with those of studies on combat veterans, which have consistently shown that PTSD veterans have more marital problems than veterans without PTSD (Jordan et al., 1992). However, these researchers examined only former POWs with PTSD and former POWs without PTSD and did not investigate non-POW control group veterans. Therefore, the possibility that captivity in itself impairs marital relations cannot be ruled out. On the other hand, in a sample of Vietnam combat veterans who were seeking mental health services, Carroll et al. (1985) found that those with PTSD had less self-disclosure and expressiveness toward their partners and more aggression, but overall, their relationship satisfaction did not differ.

The psychological and sociological literature provides that the imprisonment of veterans should be considered as one of the worst situation which a man can live in, for at best, it means isolation from society and normal life and exclusion from meaningful and vital life.

So the circumstances of the Iran-Iraq conflict and the ensuing lengthy imprisonment of POWs gave rise to some unique circumstances which are unlikely to have been fully captured in the main body of research studies that tend to focus on First and Second World War, Korean conflict and Vietnam War. Furthermore, the focus on the effect of imprisonment on war veterans is a subject that has received less research attention in recent years. With these points in mind, it is timely to undertake work that specifically considers the unique circumstances of the IRPOWs.

1.5: Iraqi Prisoners of war (IPOWs):

Iraqi prisoners of war are the Iraqi combatants who were captured in the war between Iran and Iraq, 1980-1988. This war which was the longest war in modern history, took place in September 1980 and ended in August 1988, when Iran accepted United Nation Security council Resolution 598, leading to a 20-august 1988 cease-fire (Shay, 2009).

During the eight-year war, the International Committee of the Red Cross (ICRC) visited and registered more than 67,000 Iraqi prisoners of war and the whereabouts of others were confirmed by the ICRC after their release (ICRC, 2008). The ICRC had trouble with Iran in registering prisoners and persuading Tehran to allow prisoner interviews without witnesses (Randal, 2008).

Iraqi POWs were held captive in different places all around Iran for different periods over 20 years for some of them. During the war, about 2,400 disabled and ill Iraqi prisoners of war were exchanged (ICRC, 1989).

The formal exchange of Iraq and Iran prisoners of war took place on 17th of August 1990, exactly two years after the end of Iran-Iraq war. It lasted for 30 days and about 75,000 of both sides were exchanged (ICRC, 2008). In April 1998, 6800 Iraqi prisoners of war were repatriated (ICRC, 2008). In April 2000, Iran released a further 2000 Iraqi prisoners who had been reported missing during the 1980-1988 Iran-Iraq war (ICRC, 2008). Another 754 Iraqi POWs were released in January 21th 2002 who had also been reported missing (ICRC, 2008).

The circumstances of the captivity of Iraqi prisoners of war in Iran are considered to have been miserable (Al-Zaydi, 1998; & Al-Shwiya, 1999). Iraqi POWs were expected to bear heavy the burdens of a long series of hardness, cruelty, and bad treatment. Such treatment continued for many years because Iran ignored the International Geneva convention in their treatment of Iraqi prisoners of war (Al-Hadythi, 2000).

Evidence demonstrates that Iraqi Repatriated Prisoners of War (IRPOWs) had spent unbelievable and unexpected periods of time imprisoned. This is confirmed by Al-Ameri & Mohammed (2005) who found that about 89% of Iraqi prisoners of the Iran-Iraq war had spent periods of time ranging from six to 21 years (table 1.1).

Table 1.1: Distribution of the sample of Al-Ameri and Mohammed (2005) study regarding the duration of captivity.

Duration of Captivity		
Year	**f**	**%**
2-5	41	7.60%
6-9	159	29.44%
10-13	73	13.52%
14-17	112	20.74%
18-21	136	25.18%
≥22	19	3.52%
Total	540	100%

The POWs in the First and Second World Wars, Korean War, and Vietnam War were imprisoned for no more than 6 years and the follow-up studies (Beal, 1995; Engdahl et al., 1993; & Hunt, et al., 2008) which continue to the present day, have demonstrated significant deleterious effects; psychological problems such as; PTSD, anxiety, depression, schizophrenia, hysteria, paranoia, hypochondria, and alcoholism (Solomon et al., 1994; Enghahl et al., 1991; Beebe, 1975; Sutker, & Allain, 1991; Ursano, et al., 1981; & Klonoff et al., 1976).

They also demonstrate physiological problems such as; tuberculosis, malnutrition, cardiovascular diseases, gastrointestinal conditions, and melanoma (Cohen, & Cooper, 1954; Keehn, 1976; Page, & Miller, 2000; Page & Ostfeld, 1994; Brass, & Page, 1996; Page et al., 2000; & Ebely, & Engdahl, 1991). Given that 48% of imprisoned Iraqi's spent between 18 and 22 years in captivity, the effects to these individuals are likely to be devastating.

In addition to the lengths of imprisonment, IRPOWs were subjected to psychological and ideological torture by their captors to change their beliefs and thoughts and this may have increased their suffering (Al-Jader, 1995; Al-Obaydi, 2000; Al-Hadythi, 2000). The first repatriation for IRPOWs took place in 1990. However, instead of meeting better circumstances on their release, they faced the effects of the economic sanctions, which were applied on Iraq due to the Iraqi invasion to Kuwait; and this may have caused even more suffering.

Few studies of IRPOWs have been conducted to determine the vulnerability of captivity and to assess their psychological status. In his study of IRPOWs Al-Samarai (1994) interviewed 106 IRPOWs and found that 46.2% of the IRPOWs had psychiatric disorders including: Depressive disorder (41.6%), Anxiety disorder (3.8%) and Schizophrenia (0.9%). Post-traumatic stress disorder was diagnosed separately in 71.9% of the sample. In this study Al-Samarai interviewed only 106 of Iraqi repatriated prisoners of war directly after their being received by the Iraqi authorities. This small sample may not be well representing the thousands of Iraqi repatriated prisoners of war. In addition, the medical diagnosis achieved may not be accurate because their real feelings and emotions were covered by the joyfulness of repatriation. Al-Ameri & Mohammed (2005) found in a study with 540 IRPOWs that most of them had suffered from psychological disturbances at different levels; Depression: mild: 21.85%, moderate: 38.33%, and severe: 39.82%; Anxiety: mild: 25.56%, moderate: 40.92%, and severe: 33.52%; PTSD: mild: 17.22%, moderate: 37.78%, severe: 45.0%. Al-Ameri (2007) found in another study of 400 IRPOWs that the majority of IRPOWs (64.8%) were inflicted with hypochondriasis. Al-Ameri (2008), however in another study of 300 IRPOW's found that in spite of the bad circumstances in which they lived, the majority of these IRPOWs (66.7%) had moderate to good self-concept levels.

In these three previous studies, the poor circumstances of the on-going war made travel to the places of data collection difficult. In addition, the security processes resulted in severe time delays for the research team, resulting in a high attrition rate of those IPOW already recruited. Finally, a large number of IRPOWs refused to participate in this study as they were convinced that the study of no use to them.

The circumstances of the Iraq-Iran conflict and the ensuing lengthy imprisonment of IPOWs gave rise to some unique circumstances which have not been fully captured in the main body of research studies that tend to focus on First and Second War, Korean conflict and Vietnam War. Furthermore, the focus on the effect of imprisonment on Iraqi war veterans is a subject that has received less attention because of the current

situation in Iraq. With these points in mind, it is timely to undertake work that specifically considers the unique circumstances of the IRPOWs.

1.6: Development of customs and laws in treating POWs:

Through ancient human history, the captured fighters of the losing part in a battle could be slaughtered or enslaved. These two actions were to ensure either the elimination of those fighters as a threat in future or to bring economic and even social benefits to victorious part and its fighters. Sometimes, they were presented as a sacrifice for their Gods. Civilians might be distinguished from combatants, woman and children more likely to be spared, if only to be raped by men or captured for sale as slaves (Ferguson, 1999). POWs might be taken as slaves presented as a gift for kings and princes. In very few cases prisoners might be released by taking a high ransom. Sometimes the purpose of a battle, if not a war, was to capture women, a practice known as raptio; the Rape of the Sabines was a notable mass capture by the founders of Rome. Usually women had no rights, were held legally as chattel, and would not be accepted back by their birth families once they had borne children to those who had killed their brothers and fathers (Phillimore & Bellot, 1919).

During the middle Ages, this way of thinking had changed in favour of the prisoner given that within the Christian ethos it would be a sin to kill prisoner or make him a slave. Later on, the Church considered combatants as prisoners. This was a step forward, but, the religious wars during these ages were the main manifestation of that era and these were particularly ferocious. Extermination of the heretics or (non-believers) was considered acceptable and desirable (Davies, 1996). In Crusades held against the Cathars and the Baltic people in the 13th century, against the Turks in the 11^{th} and 12^{th} centuries, or during the Muslim and Turkish incursions in Europe throughout that period the citizens of conquered cities were frequently massacred. Leaders and army commanders were frequently used to extract tribute by granting their freedom in exchange for a significant ransom in treasury or land. (Davies, 1996)

It is important to consider Islamic rules regarding the treatment of POWs. Before Islam, Arabia did not execute captives who were made to beg for their subsistence.

During the Islamic era, upon capture prisoners must be guarded and not ill-treated (Nigosian, 2004). Islamic law holds that the prisoners must be fed and clothed, either by the Islamic government or by the individual who has custody of the prisoner. This position is supported by verse eight of the Quran (Qur'an 76: 8). The prisoners must be fed in a dignified manner, and must not be forced to beg for their subsistence (Maududi, 1967). Muhammad's (The Prophet of Islam) early followers also considered it a principle to not separate prisoners from their relatives (Naqvi, 2000).

After the fighting is over, prisoners are to be released, with some prospect of survival, or ransomed. The freeing or ransoming of prisoners by Muslims themselves is highly recommended as a charitable act (Maududi, 1967). The ransom sometimes took an educational dimension, where a literate prisoner of war could secure his or her freedom by teaching ten Muslims to read and write (Ibrahim, 2004). The Qur'an also urges kindness to captives and recommends, their liberation by purchase or manumission (Qur'an, 4: 36; 9: 60; & 24: 581). The freeing of captives is recommended both for the expiration of sins (Qur'an, 4: 92; 5: 92; & 58: 31) and as an act of simple benevolence (Qur'an, 2: 1771; 24: 331, & 90: 131; & Lewis, 1990).

In history, Muslims routinely entered many wars and captured large numbers of prisoners. Aside from those who converted, most were ransomed (Crone, 2004).

Pasquier writes:

"It was the custom to enslave prisoners of war and the Islamic state would have put itself at a grave disadvantage vis-a-vis its enemies had it not reciprocated to some extent. By guaranteeing them, male POWs, humane treatment, and various possibilities of subsequently releasing themselves, it ensured that a good number of combatants in the opposing armies preferred captivity at the hands of Muslims to death on the field of battle." (DuPasquier, 1992)

William Muir wrote of this period:

"In pursuance of Mahomet's commands the citizens of Medina and such of the refugees as possessed houses received the prisoners and treated them with much consideration. 'Blessings be on the men of Medina', said one of these prisoners in later

days, 'they made us ride while they themselves walked; they gave us wheaten bread to eat when there was little of it, contenting themselves with dates."

These principles were also honoured during the Crusades, as exemplified by sultans such as Saladin and al-Kamil. After al-Kamil defeated the Franks during the Crusades, Oliverus Scholasticus praised the Islamic laws of war, commenting on how al-Kamil supplied the defeated Frankish army with food (Judge Weeramantry, 1997).

"Who could doubt that such goodness, friendship and charity come from God? Men whose parents, sons and daughters, brothers and sisters, had died in agony at our hands, whose lands we took, whom we drove naked from their homes, revived us with their own food when we were dying of hunger and showered us with kindness even when we were in their power." (Judge Weeramantry, 1997).

In the nineteenth century increased efforts to improve the treatment of the prisoners of war were intensified. The prolonged period of conflict and during the Revolutionary and Napoleonic wars between 1793 and 1815, followed by the Anglo-American war in 1812 led to rules and a system for exchanging prisoners, even while the conflict was still going on and the combatants were at war. In order to reduce the number of the prisoners held and to alleviate the shortage of skilled personnel in the home country a cartel was arranged by the respective armed service for the exchanged of ranked personnel (Davies, 1996).

After that, a number of international conferences were held as result of these emerging conventions which started with the Brussels Conference in 1874 and then the world efforts continued in developing the legal principles for the treatment of POWs. The Lahigh conferences of 1899 and 1907 were the main agreements in treating the POWs humanly. The nations that joined in the conferences, agreed that it was necessary to prevent inhumane treatment of prisoners and even to prevent the use of weapons which caused unnecessary harm. Although no agreements were immediately ratified by the participating nations, efforts were continued that resulted in new conventions being recognized as international law that specified that prisoners of war are required to be treated humanely (Roxburgh, 1920).

In 1914 the First World War took place, but the countries joining the war didn't apply the 1907 Lahigh conference principles; so many POWs had been killed and treated badly. After the First World War in July 1929 the representatives of 47 countries met in Geneva at the invitation of the Swiss government to review and complete the rules of treatment for POWs. All 47 participating countries certificated and implemented the agreement.

The 1929 Geneva Convention was the first complete agreement which included legal rules concerning the treatment of POWs. According to the Geneva Convention no POW could be forced to disclose to his captor any information other than his identity (i.e., his name and rank, but not his military unit, home town, or address of relatives). Every prisoner of war was entitled to adequate food and medical care and had the right to exchange correspondence and receive parcels. He was required to observe ordinary military discipline and courtesy, but he could attempt to escape at his own risk. Once recaptured, he was not to be punished for his attempt. Officers were to receive payment either according to the pay scale of their own country or to that of their captor, whichever was less; they could not be required to work. Enlisted men might be required to work for pay, but the nature and location of their work were not to expose them to danger, and in no case could they be required to perform work directly related to military operations. Camps were to be open to inspection by authorized representatives of a neutral power.

In 1939 the Second World War had begun and the rules of Geneva Conventions 1929 were broken resulting in barbaric treatments for some POWs. From 21 April to 12 August in 1949 a conference in Geneva was held by the Swiss united government with the support of National Committee of Red Cross (NCRC) hosting representatives of 59 countries and supervisors of 4 countries. This decided the third Geneva agreement for the treatment the POWs. This agreement included the rules of the 1899 and 1907 Lahigh agreements and the 1929 Geneva Convention. By these continuous national efforts the special rules of good treatment to the POWs were established in the International Community, and any break of these rules considered being war crimes and crimes against humanity.

1.7: Article 4 of the Third Geneva Convention of 1949:

1.7.1: Part one of these Articles, the Prisoners of War:

A- Prisoners of war are persons belonging to one of the following categories, who have been captured by the power of the enemy and these are:

1- Members of the armed forces and members of militias or volunteer corps that form part of such armed forces;

2- Members of other militias and members of other volunteer corps, including those of organized resistance movements and operating in or outside their own territory, even if this territory is occupied, provided that they fulfil the following conditions: being commanded by a person responsible for his subordinates; having a fixed distinctive sign recognizable at a distance; carrying arms openly; conducting their operations in accordance with the laws and customs of war;

3- Members of regular armed forces who profess allegiance to a government or an authority not recognized by the Detaining Power;

4- Persons who accompany the armed forces without actually being members thereof, such as civilian members of military aircraft crews, war correspondents, supply contractors, members of labour units or of services responsible for the welfare of the armed forces, provided that they have received authorization, from the armed forces which they accompany, who shall provide them for that purpose with an identity card similar to the annexed model;

5- Members of crews, including masters, pilots and apprentices, of the merchant marine and the crews of civil aircraft of the Parties to the conflict and lastly;

6- Inhabitants of a non-occupied territory, who on the approach of the enemy spontaneously take up arms to resist the invading forces, without having had time to form themselves into regular armed units, provided they carry arms openly and respect the laws and customs of war.

B- The following shall be treated as prisoners of war under the present Convention:

1- persons belonging to the armed forces of the occupied country, if the occupying Power considers it necessary by reason of such allegiance to intern them, even though it has originally liberated them while hostilities were going on outside the territory it

occupies, in particular where such persons have made an unsuccessful attempt to re-join the armed forces to which they belong and which are engaged in combat, or where they fail to comply with a summons made to them with a view to internment;

2- the persons belonging to one of the categories enumerated in the present Article, who have been received by neutral or non-belligerent Powers on their territory and whom these Powers are required to intern under international law, without prejudice to any more favourable treatment which these Powers may choose to give, where diplomatic relations exist between the Parties to the conflict and the neutral or non-belligerent Power concerned, those Articles concerning the Protecting Power. Where such diplomatic relations exist, the Parties to a conflict on whom these persons depend shall be allowed to perform towards them the functions of a Protecting Power as provided in the present Convention, without prejudice to the functions which these Parties normally exercise in conformity with diplomatic and consular usage and treaties.

C- This Article shall in no way affect the status of medical personnel and chaplains.

1.7.2: Part two includes the general protection of Prisoners of War under this Article:

- POWs are in the hand that has captured them; POWs may only be transferred by the Detaining power to a power which is a party to the Convention and after the Detaining power has satisfied power to apply the convention; and POWs must at all times be humanely treated. Any unlawful act or omission by the Detaining power causing death or seriously endangering the health of a POW in its custody is prohibited.
- POWs are entitled in all circumstances to respect for their persons and their honour; POWs shall retain the full civil capacity which they enjoyed at the time of their capture.
- The power detaining POWs shall be bound to provide free of change for their maintenance and for the medical attention required by their state of health.
- All POWs shall be treated alike by the Detaining Power, without any adverse distinction based on race, nationality, religious belief or political opinion, or any other distinction founded on similar criteria.

1.7.3: Part three includes general overview about captivity

- Every POW, when questioned on the subject, is bound to give only his surname, first names and rank, date of birth, and army, regimental, personal or serial number, or failing this, equivalent information.
- No physical or mental torture, nor any other form of coercion, may be inflicted on POW to secure from them information of any kind whatever. POWs who refuse to answer may not be threatened, insulated or exposed to unpleasant or disadvantageous treatment of any kind. POWs who, owing to their physical or mental condition, are unable to state their identity shall be handed over to the medical service.
- All effects and articles of personal use, except arms, horses, military equipment and military document, shall remain in the possession of POWs.
- POWs shall be evacuated, as soon as possible after their capture, to camps situated in an area far enough from the combat zone for them to be out of danger.
- The evacuation of POWs shall always be effected humanely and in conditions similar to those for the forces of the Detaining power in their change of station.

1.7.4: Conditions of internment of Prisoners of War

- The Detaining power may subject POWs to internment. It may impose on them the obligation of not leaving, beyond certain limits.
- POWs may be partially or wholly released on parole or promise, in so far as is allowed by the laws of the power on which they depend.
- POWs may be interned only in premises located on land and affording every guarantee of hygiene and healthfulness.
- No POWs may at any time be sent to, or detained in areas where he may be exposed to the fire of the combat zone.
- Transit or screening camps of a permanent kind shall be fitted out under conditions similar to those described in the present section, and the prisoners therein shall have the same treatment as in other camps.

1.7.5: Quarters, Food and Clothing of Prisoners of War

1.7.5.1: Quarter

- POWs shall be quartered under condition as favourable as those for the forces of the Detaining power who is billeted in the same area.
- The premises provided for the use of POWs individually or collectively, shall be entirely protected from dampness and adequately heated and lighted, in particular between dusk and lights out.
- All precaution must be taken against the danger of fire.

1.7.5.2: Food

- The basic daily food ration shall be sufficient in quantity, quality and variety to keep POWs in good health and to prevent loss of weight or the development of nutritional deficiencies.
- An account shall also be taken of the habitual diet of the prisoners.
- Sufficient drinking water shall be supplied to POWs. The use of tobacco shall be permitted.
- POWs shall, as far as possible, be associated with the preparation of their meals.
- Adequate premises shall be provided for messing.

1.7.5.3: Clothing

- Clothing, underwear and footwear shall be supplied to POWs in sufficient quantities by the Detaining power.
- Canteens shall be installed in all camps, where POWs may procure foodstuffs, soap and tobacco and ordinary articles in daily use. The tariff shall never be excess of local market prices.

1.7.6: Hygiene and Medical Attention

1.7.6.1: Hygiene

- The Detaining power shall be bound to take all sanitary measures necessary to ensure the cleanliness and healthfulness of camps and to prevent epidemics.

- POWs shall have for their use, day and night, conveniences which conform to the rules of hygiene and are maintained in a constant state of cleanliness.

1.7.6.2: Medical Attention

- POWs suffering from serious disease, or whose condition necessitates special treatment, a surgical operation or hospital care, must be admitted to any military or civilian medical unit where such treatment can be given.
- Medical inspections of POWs shall be held at least once a month. They shall include the checking and the recording of the weight of each POW.
- POWs who, though not attached to the medical service of their armed forces, are physicians, surgeons, dentists, nurses or medical orderlies, may be required by the Detaining power to exercise their medical functions in the interests of POWs dependent on the same power.

1.8: Iraqi prisoners of war and Article 4 of the Third Geneva Convention of 1949:

Regarding persons captured by Iranian forces, tens of civil workers who were doing civil works along the borders between Iraq and Iran and a number of journalists who were covering the operations, were captured by these forces and held as prisoners of war for more than 18 years, this situation contravenes Part one of Article 4 (Al-Hadythi, 2000; & Al-Obaydi, 2000).

During the capture, many IPOWs described the way they were treated as brutal and inhumane and they witnessed the death or wounding of other captives by Iranian forces (Al-Jadir, 1995; Al-Obaydi, 2000). In addition, most former Iraqi prisoners of war narrated that they were blindfolded and handcuffed tightly behind the back when they were being transferred from the place of their capture to the rear of the fighting (Al-Zaydi, 1998; Al-Hadythi, 2000). Iranian forces also asked questions about service in the militia of the Al-Baath party. This was recruited by the Iraqi government to support the Iraqi army in the front and was considered of high loyalty. They were treated differently to other prisoners and this contravenes Part two of the Article 4 (Al-Shwiya, 1999).

IPOWS were exposed to different kinds of torture to force them into giving information not included in Part 3 of Article 4; information about the front, sites of military positions, movements of troops, intelligence information, names of commanders. If they did not give this information they were threatened, insulated and exposed to unpleasant and disadvantageous treatment (Al-Jadir, 1995). At the time of capture as a first step IPOWs were forced to hand over all the expensive belongings such as; golden rings, purses of money, watches, certain clothes and any other belongings which might considered of great value (Al-Shwiya, 1999; & Al-Jadir, 1995).

Iran classified IPOWs into two groups; the first was considered as loyal to Iran and Islamic rules and repented to what had done to Iran. They were called the Repentant and were ready to do whatever they were asked to do such as, political activities against the other POWs in the same camps and finally to fight for Iran against their own country. The second were those who did believe in their country and the morals of patriotism and did not believe in what was represented by Iran, those were exposed to different kinds of treatment and were interned in places which were unhealthy and with certain limits (Al-Jadir, 1995; Al-Hadythi, 2000; & Al-Obaydi, 2000).

1.9: Purpose of the study

This study has several aims:

1) To review and discuss previous research on PTSD, anxiety and depression for former POWs in general and in particular the former Iraqi POWs of Iran-Iraq war, 1980-1988; and to explain the long-term effects of their captivity.

2) To explore aims to explore the effects of captivity and imprisonment on levels of PTSD, anxiety and depression for a cohort of former IRPOWs of the Iran-Iraq war, 1980-1988.

3) To apply a psychosocial rehabilitation programme for IRPOWs and evaluate the benefits obtained from the programme.

1.10: The researcher in context

It is important to include some information about the researcher because he is in a unique position as a former Iraqi POW and consequently brings unique strengths and weaknesses to the study.

1.10.1: Background:

- In 1981 the researcher graduated from college of Nursing/ University of Baghdad, Iraq.
- During his fourth year of study the researcher studied psychiatric mental health nursing and trained in different psychiatric hospitals within city of Baghdad.

1.10.2: Training

- In 1978 two months of training at Ramón y Cajal hospital, Madrid/ Spain.
- In 1980 six months in St. Brendan's Psychiatric hospital, Dublin/ Ireland and Board of Training.

1.10.3: Military service

- In 1981 and after two months of the graduation the researcher had to do the military service, which was compulsory in Iraq, he was recruited during the war.
- In the same year the researcher was sent to the front during the war between Iran and Iraq, 1980-1988.
- He served in charge of a medical unit of a military pavilion until March 1982.
- In March 1982 the researcher was captured after a seven-day siege by Iranian forces.
- He went missing for more than twenty one years.
- In captivity he lived in different Iraqi POWs camps in and around Iranian north-eastern area of Mashhad. These camps were not declared to the International Committee of Red Cross (ICRC), so there were no international inspections at these camps which had minimum requirements and facilities for living and had great limitations in everything even in airing and foods. There was no news from families, no news of what was going on during that time.

- The researcher was able to be close to the POWs' situation and the poor conditions they lived in and was able to identify many medical and psychological problems that appeared due to their long suffering.
- In 2003 the researcher was repatriated with other Iraqi POWs who were the final groups to be repatriated.

1.10.4: Academic qualification

- In the same year of repatriation, he was accepted to complete his Master degree in the college of Nursing/ University of Baghdad and graduated in 2005. The thesis was: 'Assessment of psychosocial aspects of Iraqi repatriated prisoners of Iran-Iraq war, 1980-1988.'
- In 2005 he was appointed as a 'Teaching Assistant' in the college of Nursing/ University of Baghdad.
- Since 2008 he has been conducting a PhD in Mental health.

1.10.5: Publications

- 'Prevalence of Hypochondria among Iraqi repatriated prisoners of Iran-Iraq war, 1980-1988'. Iraqi Scientific Journal of Nursing, Baghdad, 2007.
- 'Self-concept consideration' related to war captivity for Iraqi repatriated prisoners of Iran-Iraq war, 1980-1988. Iraqi Scientific Journal of Nursing, Baghdad, 2008.

CHAPTER TWO

REVIEW OF LITERATURE

2- Review of Literature

2.1: Posttraumatic Stress Disorder (PTSD)

PTSD is a term applied to psychological and emotional disturbance that develops after experiencing, witnessing or being exposed to a traumatic event (American Psychiatric Association, 2000; & Pollack et al., 1998). The event may involve actual or threatened death, serious physical injury or threat to physical integrity such as a natural disaster, wartime combat, torture, murder, severe harm to oneself or others, rape, and violent attack or an assault (Stern et al., 1998; Videbeck, 2001; Vogel & Muskin, 1999). Individuals who have experienced such events can respond with recurrent flashbacks of the traumatic event, nightmares and sleep disturbance, intensive fears, helplessness, irritability, fatigue, extreme distress, forgetfulness, avoidance of reminders and emotional detachment, numbing of general responsiveness, persistent signs of increased arousal, and social withdrawal (American Psychiatric Association, 2000; Pollack et al., 1998; Stern et al, 1998; Videbeck, 2001; & Vogel & Muskin, 1999).

Many specific features of a traumatic event could be distinguished from other events that may be highly stressful but not likely to cause traumatic stressor, these features are: traumatic events must occur suddenly and unexpectedly without allowing sufficient time for the victims prepare themselves emotionally and psychologically. The traumatic event is also likely to result from an irreversible outcome, such as the death of friend or permanent injury (PTSD Alliance, 2004). Victims recognize that they have no control over the traumatic events, leaving them feeling powerless to change the circumstances or outcome. In such situations because the traumatic events are sudden and believed to be out of one's control, the individual is unable to use past experiences when trying to cope with the events (PTSD Alliance, 2004).

The negative psychological outcomes of traumatic events may cause emotional numbness with shock and doubt. The distressing images of the traumatic events may break in to the victims' thoughts and dreams, which then act as triggers for these disturbing recollections. Recurring dreams may take the victim back to the situation of

threat and shock so as to let him or her get control over of it (van der Kolk, 1987). The survivor of a traumatic event may experience fear, terror, and anxiety and remain more alert and vigilant lest another similar event occurs (Comer, 2003). Comer argues that those who suffer a traumatic event may experience, guilt, and self-blame for something they either did or did not do.

Many Studies have shown that victims of traumatic events may also experience anger, irritability, or depression (NCPTSD, 2006). There are individual differences in the course of PTSD reactions. The American Psychiatric Association (2000) distinguishes between acute, chronic, and delayed-onset PTSD. Acute PTSD is diagnosed if the duration of symptoms is over one month and fewer than three months post-trauma (Dalgleish, 2004). Chronic PTSD is diagnosed if the duration of symptoms is 3 months or more (Davidson et al., 1990; Kilpatrick et al., 1987; Solomon et al., 1989). Finally, PTSD with delayed onset is diagnosed if the onset of symptoms is at least six months after the original traumatic event (McFarlane, 1996).

According to the American Psychiatric Association (2000) PTSD can occur at any age. It is estimated that about 60% of individuals exposed to an extreme traumatic event develop PTSD. Complete recovery might occur within three months for approximately 50% of people, but the severity and duration of the trauma and proximity of the person to the trauma are considered to be the most important factors which affect the likelihood of developing PTSD (American Psychiatric Association, 2000).

Studies have suggested that, at any time, approximately 2% of any population is diagnosed with PTSD (Stein et al., 2000) and that approximately 8% will suffer from PTSD at some time during their lives (American Psychiatric Association, 2000; Breslau, 2001; & Horwath & Weissman, 2000). Prevalence is elevated among women and the previously married (Agency Group, 2003; & Breslau et al., 1997). The traumas most commonly associated with PTSD are combat exposure and witnessing combat among men, and rape and sexual molestation among women (Kessler et al., 1995).

2.1.1: DSM-IV-TR Criteria for Posttraumatic Stress Disorder (American Psychiatric Association, 2000).

A. The person has been exposed to a traumatic event in which both of the following have been present:

1. The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
2. The person's response involved intense fear, helplessness, or horror. (In children, this may be expressed instead by disorganized or agitated behaviour).

B. The traumatic event is persistently re-experienced in one (or more) of the following ways:

1. Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. (In young children, repetitive play may occur in which themes or aspects of the trauma are expressed).
2. Recurrent distressing dreams of the event. (In children, there may be frightening dreams without recognizable content).
3. Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur upon awakening or when intoxicated). (In young children, trauma-specific re-enactment may occur).
4. Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.
5. Physiological reactivity on exposure to internal or external cues that symbolise or resemble an aspect of the traumatic event.

C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:

1. Efforts to avoid thoughts, feelings, or conversations associated with the trauma

2. Efforts to avoid activities, places, or people that arouse recollections of the trauma
3. Inability to recall an important aspect of the trauma
4. Markedly diminished interest or participation in significant activities
5. Feeling of detachment or estrangement from others
6. Restricted range of affect (e.g., unable to have loving feelings)
7. Sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:

1. Difficulty falling or staying asleep
2. Irritability or outbursts of anger
3. Difficulty concentrating
4. Hyper-vigilance
5. Exaggerated startle response

E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than one month.

F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if: Acute: if duration of symptoms is less than 3 months Chronic: if duration of symptoms is 3 months or more

Specify if: With Delayed Onset: if onset of symptoms is at least 6 months after the stressor.

According to the DSM-IV-TR, 2000

- Criterion (A) refers to the Stressors which arose as result of experiencing, witnessing or being faced with an event that might involve real threatened death or grave wounds. The individual's response should be accompanied with severe fear and/ or horror and helplessness.

- Criterion (B) refers to Intrusive (disturbing) Recollection where the individual constantly re-experiences some symptoms: repeated and consistent distressing memories of the event which includes thoughts and images; distressing dreams or nightmares of the event; a strong feeling as if the traumatic event was about to happen again; strong psychological distress at exposure to internal or external signs that represent or are similar to a feature of the traumatic event; and Physiological reactivity on exposure to internal or external signs that represent or look like an feature of the traumatic event.

- Criterion (C) refers to the avoidance of any stimulus which is linked to the presence of trauma and also numbing of common responsiveness, as indicated by no less than three of the following: avoidance of: any situation that might relate to the trauma such as conversation, thoughts and feelings; any activity, people or places that provoke recollections of the trauma; incapability to remember an vital feature of the trauma; clearly decreased curiosity or sharing in important activities; feeling of detachment or separation from others; limited range of emotions and being incapable having affectionate feelings; and lastly, a sense of an unguaranteed future.

- Criterion (D) refers to the Hyper-arousal with excessive symptoms of arousal which were not experienced before including no less than two of the following: difficulty in falling asleep or to staying asleep; irritability or outbreaks of rage; week concentration; hyper-vigilance; an overstated startle response.

- Criterion (E) refers to the duration of the symptoms of disorder in criterion: (B), (C), and (D) which over more than one month.

- Criterion (F) refers to Functional Significance which relates to distress or impairment in social activities, occupational ability or any other important areas of performance.

Many modifications had been made in the thirteen years between the original version and the description in its recent form. Most remarkably, for example; Criterion (A) had been changed from *'Traumatic Event'* to *'Stressors'*. Criterion (A) in both versions

basically addresses stressors, but instead of the ambiguous description of *'a recognizable stressor that would evoke significant symptoms of distress in almost anyone'*, stressors have become clearer so as to avoid an over-generalized meaning and to allow less opportunity for personal interpretations. In addition, Criterion (D) has changed from *'Miscellaneous Symptoms'* into *'Hyper-arousal'*, *'Functional Significance'*, *and 'Duration'*. In general, psychologists and mental health workers nowadays have separated the criteria of Posttraumatic Stress Disorder into three expressions: firstly, the *experience of intrusive thoughts*, secondly, *avoidance and numbing*, and thirdly, *hyper-arousal or high levels of alertness* (Whaley 2009).

2.1.2: Is PTSD a new phenomenon?

The experiences of wartime combatants have been reported throughout recorded history and the psychopathological reactions to traumatic events have long been documented (Rado, 1942; & Figley, 1978). The effects of trauma have been described throughout recorded history. Perhaps the first description of symptoms resulting from trauma is recorded on a Sumerian cuneiform tablet which described the effects of attack on the city of Ur (Iraq) between 2027 and 2003 B.C. (Ben-Ezra, 2001; & 2002). Also in ancient times, Homer's explanation of Achilles in the Iliad describes the responses of fighters in combat. Those responses may also be typical more recent experiences of war (Shay, 1991). During the Great fire of London, Samuel Pepys described precisely, in his diary in 1666, his own traumatic reactions (Daly, 1983).

In the nineteenth century and during the American Civil War between 1861 and 1865, a physician, called Da Costa, who was treating victims of the war, described many symptoms such as: irritability, increased arousal, and elevated heart rate in soldiers joining the battles. These psychological reactions were related to combat stress which gave rise to explain of the Da Costa's Syndrome 'Soldiers Irritable Heart' (Saigh & Bremner, 1999).

Away from war the first major study of the effects of trauma in non-combat explored stress resulting from accidents during the extensive construction of railways in the nineteenth century, Page (1883) recorded symptoms of healthy and strong men, who

involved in railway construction accident,: no control on emotion; sleep disturbance due to recalling the accident, startle at the least noise; helplessness; heart palpitation; and bursting into tears easily (Brewin, 2003). The explanation of these symptoms was generally considered to be some injuries or physical lesions to the brain or part of the nervous system related mainly to the accident, and this became known as 'Railway spine'. This was typical of medicine of that time, which required some physical or organic cause of the injury, even though one was not immediately apparent. Page's opinion, however, was more typical of modern views, attributing the symptoms to "general nervous shock" caused by extreme fright, and shared both psychological and physiological levels of explanation (Page, 1883).

It was not until the First World War (1914-1918) that psychologists and psychiatrists could describe symptoms and develop a better understanding of these reactions (Schlenger, Fairbank, Jordan, & Caddle, 1999). In the beginning, these reactions were described as 'cowardice', 'weak personality' or poor military discipline, but then a new concept of combat exposure with psychological symptoms and later on mental breakdown started to evolve. The concept of "shell shock" emerged to interpret different psychological symptoms which were thought to be a result of mild brain haemorrhages or the concussive effects of exposure to continuous shell explosions (Comer, 2003). Shell shock was the interpretation used to explain a wide variety of symptoms apparent in those experiencing intensive wartime combat. Typical symptoms included irritability, insomnia, excessive startle response, nightmares, anxiety, and depression (Figley, 1978).

After the First World War, many combatants suffered from residual symptoms of the effects of their combat experiences such as startles, nightmares, insomnia and anxiety. This led to the development of a new concept of "war neurosis" that was compared by Freud with "traumatic neurosis" in civilian populations (Hart, 2006). Kardiner (1941) was the first to conclude, after intensified efforts researching the prolonged effects of war-related neurosis, that this disorder could be chronic in impact.

2.1.2.1: The ideas of Abram Kardiner

The great efforts of Abram Kardiner came as a result of his work as a psychiatrist who was working with the chronic cases of shell shock from the First World War. He wrote, as a result of his experiences over a long career with the war veterans, a book about the classic traumatic neuroses of the war in 1941 and then with the help of his colleague Spiegel rewrote his book after the end of the Second World War: War Stress and Neurotic illness (Kardiner & Spiegel, 1947). Their conclusions based on this experience, were that circumstances such as fatigue, pain or, in opposition, morale and leadership will influence the degree to which an individual is affected by trauma. The acute face of trauma may be very different in different conditions. However, Kardiner (1947) concluded that once established war neuroses would be distinguished by a number of symptoms. In addition, the psychological explanation of these neuroses is really inadequate, though; the frightened states experienced by a patient trying to avoid it are considered the real threat (Kardiner & Spiegel, 1947).

Kardiner sees trauma as an external cause that set off a sudden change in earlier adaptation. He considered the roles of perception and carrying out adaptation to events as: the fear faced in trauma, the awareness of danger and threat, and interruptions of the executive functions that usually deal with adjustment to the external surroundings. He believed that in these cases there is a break in the balance between the person and the external world, and augmented sensitivity to the danger states which leads to avoidance. This avoidance is not curative and is in any case useless because the person cannot escape from the event causing the traumatic condition. He may do well when he is conscious, but when he tries to sleep the worrying nightmares horrify him and prevent sleeping. Meanwhile there is also an oppressive functioning factor that causes temporary amnesia for at least a part of the trauma. Kardiner also adds that it is the instability of sensory and motor function, which forces the patient to relive the experience of the traumatic events, and of the autonomic nervous system, that made him use the term of physio-neurosis to describe the disorder.

Furthermore, the long experience of Kardiner with chronic cases led him to propose that the current slowing functioning in the performances of living is familiar and does not react well to treatment. He suggested that the best treatment, in the acute stage, was not always effective for chronic sufferers. He strongly believed that this was a difficult physio-neurosis because it made changes in the entire personality and seriously decreases functioning. The way he described the failure of adaptation and the follow-on symptoms reflects the current criteria for the disorder. Although he struggled to discover any explanation for war neuroses, Kardiner believed that any theory should be robustly derived from the data. Because the neurosis is the same as that resulting from reactions to civilians trauma so the theory should apply to all conditions of traumatic event induced neurosis.

Kardinr was not able to apply Freud's theory of sexual instinct to interpret what could happen as reaction to traumatic events. So he said in his retrospective ideas: "My efforts to create a theory for the war neuroses proved impossible. Working with the concepts of the libido theory, which are based on instinctual energies, phylogenetically programmed stages of development, and a predetermined Oedipus complex, left little room to explain the response to a traumatic experience, whether in war battle environments or any other situation offering an immediate threat to survival. But I tried ... and then abandoned the project." (Kardiner, 1977, p 111)

The statement of Kardiner who worked for a long time with chronic cases of PTSD had little impact on psychoanalytic theory which could not fit the facts of the experimental responses to the reality of external events. At the end of war the effects of trauma had been ignored in spite of the evidence that the vulnerability of trauma could not be recognized earlier, and that the diagnostic process regarding the individual who could be safe from the psychological disturbances of war were not fully reliable. The Americans, particularly, had tried to learn from British experience and to keenly determine possible vulnerability of young soldiers when they participated in the Second World War, but their effort was totally unsuccessful (Shephard, 2004). In spite of all precautions such as the exclusion of large numbers of applicants, morale rehearsal, and generating questions about the state of the nation's manhood, the rates

of psychological collapse could not be decreased. Prediction of who will be susceptible to post-war psychological disturbances is still not effective today (Rona et al., 2006).

2.1.2.2: Vietnam War and PTSD

The Vietnam War, which began in 1960 and ended in 1975, led to the recognition of other risk factors for PTSD and led to a new formulation of PTSD as a conventional diagnosis in the DSM. This time, the crucial information was not from the military or psychiatry, but from the efforts of the soldiers themselves. In earlier wars, the First and Second World Wars and the Korean Conflict, all the psychological problems of soldiers were covered by idiom of 'Heroes' of war. However during the Vietnam War there was a rising anti-war pressure movement among not only the civilians but also among soldiers themselves. Special groups organised by the veterans, to enable them to put forward their experiences of war and to raise the community awareness, proliferated, supported by concerned psychiatrists. All these efforts and pressures led to the founding of a new special foundation called the 'Veterans Administration'. The Veterans Administration once again began to study PTSD as a disorder and began the process of providing a full description of it.

Away from what was going on in the Veteran Administration, there were growing voices about rape victims and child abuse in the society. In the 1970s new rape crisis centres were founded in the US to bring awareness of the reality and degree of rape experienced by women together with child abuse. A centre for research on rape was established in 1975 at the National Institute of Mental Health (Herman, 2001). The women movements cited a new definition for rape which was considered a 'crime of violence', ending the previous point of view which based on Freudian interpretations of rape 'wish fulfilment of women's inner desires'. Consequently, the Veteran Administration and the Centre for Research on Rape generated a new explanation of the syndromes, which soldiers and raped women suffered from, and both of the two sides recognised that they were explaining the symptoms of a common disorder.

The groups, who were working on the third version of the Diagnostic and Statistical Manual issued in 1980 by American Psychiatric Association, had included the

symptoms of these syndromes, reorganised them together and named them as Posttraumatic Stress Disorder (PTSD). Many arguments around the newly named disorder have risen, due to differences in opinions, about who and how it was decided that disorder was to be a part of society's thinking. Some said that the political forces generated PTSD as a social construction of the twentieth century and it did not represent a real disorder (Summerfield, 2001; 1999; Jones et al., 2003). However others suggest that although the disorder, like any other, is socially constructed this does not drop negate its existence as a real problem (Rechtman, 2004).
It is very important for Posttraumatic Stress Disorder to be included within the Diagnostic and Statistical Manual, regardless of these arguments in order to provide an identification of the disorder and a solid basis in order to move forward.

During the Second World War (1939-1945), "combat exhaustion" was used to refer to war neurosis for those with the same psychological symptoms to distinguish them from physical exhaustion (Zeiss et al., 1985). Grinker and Spiegel (1945) used another concept to describe the persistent and chronic combat neurosis symptoms, they used the term "Operational Fatigue Syndrome" and this was most frequently manifested in restlessness, irritability and aggressive behaviour, fatigue, difficulty in falling asleep, anxiety, easy fatigue, startle, feeling of tension, depression, and personality and memory disturbances.

Reports emerged during the latter years of the Second World War that revealed recurrent reactions to wartime combat stressor which were fatigue, nightmares, irritability, anxiety, and loss of concentration. According to Futterman & Pumpian-mindlin (1951) stressors were found after five years; and then after fifteen years (Archibald et al., 1962); and later on, after twenty years (Archibald & Tuddenham, 1965).

2.1.2.3: Symptoms recognised before DSM III, 1980:

The physiological changes during or after the trauma were recognised before DSM III, 1980. As a result to the continuous studies conducted by many psychiatrists and

psychologists who worked hardly to relate these changes to some symptoms which experienced by trauma victims. For example, Da Costa (1871) and Page (1883) explained the symptoms of the arousal which are cited in DSM III, 1980, as Criterion (D); Kardiner & Spiegel (1947) mentioned that the physiology lay at the core of the disorder; Rivers in 1920 mentioned, in his contribution to a biological theory of the psychoneuroses, the helplessness of the immobility response as important, now this is cited in DSM III as Criterion A-2; Kardiner (1947) identified the stereotypy of symptoms which included in DSM III criteria: B, C & D that aggravate by different types of trauma; and Page (1883) explained the inability to function as an effect of the disorder which cited in DSM III criterion: F.

2.1.3: PTSD Evolution of the Diagnostic and Statistical Manual (DSM) by the American Psychiatric Association (APA)

"Gross stress reaction" disorder appeared, for the first time, in the first edition of the Diagnostic and Statistical Manual, DSM-I, issued by the American Psychiatric Association in 1952 its diagnostic criteria was based on the symptoms of Operational Fatigue Syndrome described by Grinker and Spiegel in 1945. Gross stress reaction was aimed at the reactions to military disasters and civilian tragedies. In the description of DSM-I one of the criteria for the diagnosis of Gross stress reaction was that it was short-term and reversible (Clipp & Elder, 1996), and these symptoms either resolved or developed into anxiety neurosis or even depression (Andreasen, 2004). Reports had continued following the publication of the DSM-1 to describe the new symptoms of Gross stress reaction which directed the psychologists and psychiatrists to address the acute nature of the diagnosis of this disorder. The efforts of Brill and Beebe (1955) led to evaluation of evidence for a chronic aspect for psychological disorder among those (1,500 subjects) who experienced psychological traumatisation during the Second World War. In addition Archibald & Tuddenham (1965) found continued psychological problems within combat veterans twenty years after the end of the war which supported the evidence of Brill and Beebe. Archibald & Tuddenham found that these

participants were still suffering from sleep disturbance, dizziness, startle reactions, blackout and avoidance of activities that were similar to war experiences.

After the Korean Conflict, the gross stress reaction was omitted from DSM-II (1968), which described the traumatic stress reactions as "adjustment reaction to adult life" with; fear related to military combat diagnosed by trembling, running, and hiding (DSM-II, 1968). This disorder was considered as temporary disorder in spite of evidence that supported the chronic and persistent nature of traumatic stress reactions (Ozer et al., 2003).

The concept of posttraumatic stress disorder appeared, for the first time, in DSM-III (American Psychiatric Association, 1980) after so many Vietnam veterans experienced emotional reactions after their combat exposure and the large numbers of those veterans experiencing continuing psychological difficulties and maladjustment (Zeiss et al., 1985). Further reports showed that victims of other types of psychological and physical traumas such as natural and human disasters (Baum et al., 1983; Green et al., 1983), concentration camp survival (Kinzie et al., 1984), and rape (Calhoun et al., 1982) also experienced the same psychological difficulties as combats veterans.

2.1.4: The diagnostic criteria of PTSD according to DSM III, 1980 (American Psychiatric Association, 1980).

A. The person has experienced an event that is outside the range of usual human experience and that would be markedly distressing to almost anyone.

B. The traumatic event is persistently re-experienced in at least one of the following ways:

1) recurrent and intrusive, distressing recollections of the event (in young children, repetitive play in which themes or aspects of the trauma are expressed)
2) recurrent distressing dreams of the event
3) sudden acting or feeling as if the traumatic event were recurring (including "flashback" or dissociative episodes, whether or not intoxicated)

4) intense psychological distress at exposure to events that symbolize or resemble an aspect of the traumatic event, including anniversaries

C. Persistent avoidance of stimuli associated with the trauma or numbing of general responsiveness, as indicated by at least three of the following:

1) efforts to avoid thoughts or feeling associated with the trauma
2) efforts to avoid activities or situations that arouse recollections of the trauma
3) inability to recall an important aspect of the trauma (psychogenic amnesia)
4) markedly diminished interest in significant activities (in young children, loss of recently acquired developmental skills such as toilet training or language skills)
5) feeling of detachment or estrangement from others
6) restricted range of affect
7) sense of foreshortened future (e.g., the patient does not expect to live very long or to have a successful career)

D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by at least two of the following:

1) difficulty falling or staying asleep
2) irritability or outbursts of anger
3) difficulty concentrating
4) hyper vigilance
5) exaggerated startle response
6) physiological activity upon exposure to events that symbolize or resemble an aspect of the traumatic event

E. Duration of disturbance

- Symptoms in "B, C, and D of at least one month.

Specify:

- 'Delayed onset'; if symptom onset occurs at least six months after the traumatic event.
- 'Age-specific features; the disorder in children may present differently.

Crucial notes:

Post-traumatic Stress Disorder does not develop in every victim. Traumas may be experienced by one person such as in severe physical assault or rape or may be experienced in groups such as in earthquake, military combat, or unusually grave car and train accidents. In addition, the stressor may arise from natural, accidental, or purposeful events. The original stressor is usually experienced with extreme fear, horror, and weakness. In addition, the precipitated stressor should not be the kind that is well-tolerated by other followers of the same cultural group for example: death of a loved person and usual road traffic accidents. On other hand, if the criteria of anxiety disorders, depression disorders, and other mental disorders are found, their diagnoses must be made separately. Finally, adjustment disorder may indicate a less severe trauma, but the individual does not meet all of the criteria mentioned above.

2.1.5: Diagnostic criteria of PTSD in proposed DSM-V (American Psychiatric Association, 2000).

PTSD is currently classified as an anxiety disorder but this does not fully reflect its nature. In the context of reviews in preparation for a revised DSM V, emerging knowledge suggests PTSD is a disorder of fear conditioning, of dissociation and of memory. It is classified under 'Trauma- and Stressor-Related Disorders'

A. The person was exposed to one or more of the following event(s): death or threatened death, actual or threatened serious injury, or actual or threatened sexual violation, in one or more of the following ways:

1. Experiencing the event(s) him/ herself
2. Witnessing, in person, the event(s) as they occurred to others
3. Learning that the event(s) occurred to a close relative or close friend; in such cases, the actual or threatened death must have been violent or accidental
4. Experiencing repeated or extreme exposure to aversive details of the event(s) (e.g., first responders collecting body parts; police officers repeatedly exposed to details of child abuse); this does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work related.

B. Intrusion symptoms that are associated with the traumatic event(s) (that began after the traumatic event(s), as evidenced by 1 or more of the following:

1. Spontaneous or cued recurrent, involuntary, and intrusive distressing memories of the traumatic event(s). Note: In children, repetitive play may occur in which themes or aspects of the traumatic event(s) are expressed.
2. Recurrent distressing dreams in which the content and/or affect of the dream is related to the event(s). Note: In children, there may be frightening dreams without recognizable content.
3. Dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring (Such reactions may occur on a continuum, with the most extreme expression being a complete loss of awareness of present surroundings.) Note: In children, trauma-specific re-enactment may occur in play.
4. Intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s)
5. Marked physiological reactions to reminders of the traumatic event(s)

C. Persistent avoidance of stimuli associated with the traumatic event(s) (that began after the traumatic event(s)), as evidenced by efforts to avoid 1 or more of the following:

1. Avoids internal reminders (thoughts, feelings, or physical sensations) that arouse recollections of the traumatic event(s)
2. Avoids external reminders (people, places, conversations, activities, objects, situations) that arouse recollections of the traumatic event(s).

D. Negative alterations in cognitions and mood that are associated with the traumatic event(s) (that began or worsened after the traumatic event(s)), as evidenced by 3 or more of the following: Note: In children, as evidenced by 2 or more of the following:

1. Inability to remember an important aspect of the traumatic event(s) (typically dissociative amnesia; not due to head injury, alcohol, or drugs).
2. Persistent and exaggerated negative expectations about one's self, others, or the world (e.g., "I am bad," "no one can be trusted," "I've lost my soul forever," "my

whole nervous system is permanently ruined," "the world is completely dangerous").

3. Persistent distorted blame of self or others about the cause or consequences of the traumatic event(s)
4. Pervasive negative emotional state -- for example: fear, horror, anger, guilt, or shame
5. Markedly diminished interest or participation in significant activities.
6. Feeling of detachment or estrangement from others.
7. Persistent inability to experience positive emotions (e.g., unable to have loving feelings, psychic numbing)

E. Alterations in arousal and reactivity that are associated with the traumatic event(s) (that began or worsened after the traumatic event(s)), as evidenced by 3 or more of the following: Note: In children, as evidenced by 2 or more of the following:

1. Irritable or aggressive behaviour
2. Reckless or self-destructive behaviour
3. Hyper-vigilance
4. Exaggerated startle response
5. Problems with concentration
6. Sleep disturbance -- for example, difficulty falling or staying asleep, or restless sleep.

F. Duration of the disturbance (symptoms in Criteria B, C, D and E) is more than one month.

G. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

H. The disturbance is not due to the direct physiological effects of a substance (e.g., medication or alcohol) or a general medical condition (e.g., traumatic brain injury, coma).

Specify if:

With Delayed Onset: if diagnostic threshold is not exceeded until 6 months or more after the event(s) (although onset of some symptoms may occur sooner than this).

2.1.6: Diagnostic criteria for PTSD in ICD-10 (International classification of Diseases, WHO, 1993)

The ICD-10 diagnostic criteria for Posttraumatic Stress Disorder require that the individual has been exposed to a traumatic event, and has suffered from stressful re-experiencing symptoms. Individuals will regularly also demonstrate avoidance of reminders of the event, and some symptoms of hyper-arousal and/or emotional numbing. The ICD-10 research diagnostic criteria for PTSD are as follows:

A- The patient must have been exposed to a stressful event or situation (either short or long lasting) of exceptionally threatening or catastrophic nature, which would be likely to cause pervasive distress in almost anyone.

B- There must be persistent remembering or 'reliving' of the stressor in intrusive 'flashbacks', vivid memories, or recurring dreams, or in experiencing distress when exposed to circumstances resembling or associated with the stressor.

C- The patient must exhibit an actual or preferred avoidance of circumstances resembling or associated with the stressor, which was not present before exposure to the stressor.

D- Either of the following must be present:

1- Inability to recall, either partially or completely, some important aspects of the period of exposure to the stressor

2- Persistent symptoms of increased psychological sensitivity and arousal (not present before exposure to the stressor), shown by any two of the following:

a- difficulty in falling or staying asleep

b- Irritability or outbursts of anger

c- Difficulty in concentrating

d- Hyper-vigilance

e- Exaggerated startle response.

E- Criteria B, C, and D must all be met within 6 months of the stressful event or the end of a period of stress. (For some purposes, onset delayed more than by 6 months may be included, but this should be clearly specified.)

2.1.7: Comparison between DSM-IV and ICD-10 regarding Diagnostic criteria of PTSD

The DSM-IV diagnostic criteria for Posttraumatic Stress Disorder are firmer. These criteria set more importance on avoidance and emotional numbing symptoms. It needs a specific combination of symptoms, which must include:

- One re-experiencing symptom,
- Three symptoms of avoidance and emotional numbing, and
- Two hyper-arousal symptoms.

In addition, DSM-IV requires that the symptoms cause significant distress or impacts on social or work-related performance. Numerous researchers have found that those who survived traumatic events and experienced most of the DSM-IV symptoms of Posttraumatic Stress Disorder, but not all these symptoms, illustrate significant distress and need treatment (Blanchard et al, 2003b).

In contrast to the ICD-10 definition, a DSM-IV diagnosis of PTSD further requires that the symptoms have persisted for at least 1 month. In the first month after trauma, trauma survivors may be diagnosed as having acute stress disorder according to DSM-IV, which is characterised by symptoms of PTSD and dissociative symptoms such as depersonalisation, derealisation and emotional numbing. The ICD-10 diagnosis does not require a minimum duration.

2.1.8: Brain changes related to PTSD

Most recent research has reported the changes in the biological mechanisms associated with getting PTSD. These findings helped to explain the chronic state of this disorder. Studies maintain the concept that trauma can be the main cause in interaction with the victim's response to stress even years after the traumatic events.

The victims of PTSD, not only, illustrate a range of alteration in memory and awareness, but also changes in brain formation and function (Schnurr & Friedman, 1999). The stimulation of the sympathetic nervous system (SNS) acts a vital role in the body's response to traumatic or risky conditions, preparing it for the 'flight or fight' response. In persons who develop PTSD, their SNS becomes Hyper-responsive to trauma-related stimulus. An increasing body of study of the psycho-physiological

squealae of chronic PTSD, Shalev et al (1998) found a considerably higher resting heart rate in trauma victims with PTSD compared to those without PTSD. A faster resting heart rate is correlating with higher risk of developing high blood pressure and a greater incidence of cardiovascular morbidity and even mortality (Forneris et al., 2004).

The new technology in scanning brain components such as positron-emission tomography (PET) and magnetic resonance imaging (MRI) has assisted researchers in recognizing alterations in brain's areas concerned with fear and memory in individuals experiencing the symptoms of PTSD. Changes have been found in the amygdala and hypo-thalamic-pituitary-adreno-cortical axis (HPA) as well as a reduced hippocampal volume in individuals with chronic PTSD (Lewine et al., 2002). Alterations have been found in systems involved in organizing the body's reaction to stress, including increased hormones such as Nor-epinephrine, Testosterone, and Thyroid and decline in the levels of Cortisol (Weintraub & Ruskin, 1999; Yehuda, 2002). So using the new neuroimaging techniques to interpret the symptoms of PTSD added new understanding of the neurobiology of PTSD (Pitman et al., 2001; Hull, 2002; Grossman et al., 2002; Liberzon & Martis, 2006).

The notions of Allostasis and Allostatic load have been recognized as the basis for realizing the psychobiology of PTSD. Allostasis refers to the body's attempt to retain stability through change when traumatic situations or stressors place demands on regular levels of adaptive functioning. This is in contrast to healthy steady state 'homeostasis' (Wilson et al, 2001). Most of the body systems require a homeostatic state or controlled limits. For example, the body temperature is one system which must remain within a narrow range. Having said this Allostasis, which is also described as the body's capability to alter to adapt to changes in the surroundings, is also a vital process for survival (McEwen & Lasley, 2002).

When an individual faces a traumatic situation, which leads to a stressor, change or allostasis is produced in a controlled set of the body systems that compromise the responses to the stressor. The brain, which perceives a threat, is linked to the endocrine system, which produces hormones that mobilize the rest of the body to

protect itself against a life-threatening situation. The 'fight or flight' response is formed in which the whole body is prepared to fight or flee a predator to guarantee survival. Allostasis can be a cause of bodily wear and tear if it is triggered in situations in which the response of 'fight or flight' is not a real choice or if it does not discontinue when the threat or confrontion is over. The harm that allostasis can cause when it is operating inappropriately is explained as 'allostatic load'. (McEwen & Lasley, 2002)

When victims of traumatic events fail to manage or integrate the traumatic event within a healthy baseline of regular functioning, the allostatic mechanisms used to cope and adapt are not ended once the traumatic experience is over. This new firm situation is not a temporary alteration from a homeostatic state, but a chronic state of distress that is numb, avoidant, and alienated (Lindy & Wilson, 2001). Survivors of the trauma become vulnerable to environmental cues that cause unhealthy responses. The persistent hyper-arousal experiences are reactivated by traumatic memories, leading to unexpected changes in well-being (Wilson et al., 2001). Allostasis becomes an allostatic load that can have vulnerable effects on bodily and psychological health throughout the over production of stress hormones (McEwen & Lasley, 2002).

2.1.9: Prevalence of PTSD

Posttraumatic stress disorder is believed to be a mental disorder. This disorder has environmental, psychological and physical etiologic elements which include: an exposure to severe stressor or trauma which could threaten physical integrity or even the life of a victim and which is accompanied by great fear and helplessness. Symptoms experienced with this disorder must persist for at least one month and consist of three clusters: re-experiencing, avoidance and arousal and have to be in the extent that they affect normal functioning in everyday life (DSM-IV, 1994).

To experience a trauma is considered an ordinary fact for human being. The National Co-morbidity Survey in the USA reported that about 60% of men and 50% of women have experienced at least one type of traumatic events in their lifetime and approximated lifetime PTSD prevalence as 7.8%. Although men were more likely to experience trauma than women, more women (10.4%) than men (5.0%) were

expected to experience PTSD. It is estimated, whether the treatment has been taken or not, that around one third of cases, PTSD became chronically unrelieved. (NCS; Kessler et al., 1995)

The American National Co-morbidity Survey reported again that the prevalence rates of PTSD within twelve months were 3.5% and 36.6% of these cases were considered to be severe (Kessler et al., 2005b). Lifetime prevalence was approximated as 6.8%, but this was higher in ages: 30 to 44 (8.2%) and 45 to 59 (9.2%) (Kessler et al, 2005a).

Changes to the DSM criteria have had an impact on PTSD prevalence. So the lifetime experience of traumas, which may precipitate PTSD, is reported to have changed to 77.6% as an effect of extending in the criterion (A1). The possibility of develop PTSD after a trauma meeting criterion (A1) and the subjective criterion (A2) criterion was found to be approximately 12% (Breslau & Kessler, 2001) compared to a previous estimation of 9.2% (Breslau et al., 1998); but other traumatic events which are not linked to criterion (A2) seldom resulted in other criteria for PTSD to be met.

Many differences in the prevalence rates may, nevertheless, be underestimates, mainly in particular subcategories of the general population. Mueser et al (1998) found in a study of outpatients (n=275) being treated in general health services for different severe psychological disorders, that 98% of those patients had reported at least one lifetime traumatic event (Mueser et al., 1998). In addition, rates of reported PTSD were considered to be high with 43% reported as PTSD, although barely 2% of them had been diagnosed with PTSD. In another study McFarlane and his colleagues (2001) found that 61% of psychiatric inpatients (n= 141) had reported, at least, one lifetime trauma. 28% of these met diagnostic criteria for lifetime PTSD but only one of the 141 patients had a previous official diagnosis of PTSD confirmed in their case notes (McFarlane et al., 2001).

Another account of high rates for PTSD prevalence is found in special circumstances such as prison populations, where many cases may stay unrevealed. For example, prevalence rates for PTSD documented in a New Zealand prison for the previous month were 16.6% for women and 9.5% for men (Brinded et al., 2001).

According to the National Co-morbidity Survey (NCS-R) Kessler and his colleagues (2005) recognized four probable causes of bias, which may make estimates conservative. These biases are: patients of mental illness may be less expected to take part, this is either due to sample exclusion criteria, for example, the homeless, or differential mortality or unwillingness; and also, there is a bias against reporting upsetting manners, whether during a clinician interview or by a survey; assumption in approximating lifetime threat to a supposed steady restricted risk across age groups; age at beginning may be recalled inaccurately, this could be either by telescoping actions to the recent past or by age related failure to determine the past disorders, hence creating the false appearance of a cohort effect. As a result estimates of lifetime prevalence and projected risk are likely to be conservative (Kessler et al., 2005a).

The most common trauma causing situation is so-called Interpersonal violence and the most important examples are: combat and rape which are the most effective events in precipitating PTSD. In addition, they are also considered the most frequently experienced in the early adult life and adolescence (Frederick, 1984).

For combat-related prevalence of PTSD Herman (2001) reported that the Vietnam combat soldier's regular age was 19; and for women who are raped, half of them are around the age of 20, and at the time of the rape 75% are aged between 13 and 26. In addition, in the most recent review of the literatures concerning the age of inception for mental disorders reported that about half of all lifetime mental disorders cases start between 13 and 18 years and 75% of cases by the mid twenties (Kessler et al., 2007). For TSD the median age of onset is 23 years with 75% is by the age of 39 years (Kessler et al., 2005a).

2.1.9.1: Some statistical facts related to PTSD prevalence in USA

Perkonigg et al. (2000) reported that the estimates of adults in the United States of America who have, at least once in their lifetime, experienced a traumatic situation range from 40% to 90% and up to 20% of those individuals continue to develop PTSD. In addition, an estimated 5% of Americans have PTSD at any given time and as a total of more than thirteen million people have PTSD.

Ballenger et al., (2000) concluded that approximately 8% of all adults will develop PTSD during their lifetime and this rate qualifies PTSD as the most prevalent anxiety disorder in the general population in USA. However this lifetime prevalence varies significantly, from 1% to 30%, depending on the trauma type and exposure (Wilson & Keane, 2004).

An estimated of one in ten women will get PTSD at some time in their lives. Furthermore, women are about twice as likely as men to develop PTSD. This may be due to the fact that women are likely to experience interpersonal violence, such as domestic violence or rape, more often than men (Kesseler et al., 2005a).

Nearly 13% of men and 10% of women have experienced more than three traumatic situations in their lives (Kessler et al., 1995).

According to Perkonigg et al. (2000); Kessler et al. (1995); and Ballenger et al. (2000) the estimated risks for developing PTSD for people who have experienced the following traumatic situations are: rape 49%; physical assault 32%; other sexual assault 24%; serious accident or injury 17%; shooting or stabbing 15%; unexpected death of relative or friend 14%; child's life-threatening illness 10%; witnessing killing or serious injury 7%; and natural disaster 4%.

2.1.9.2: Combat-related prevalence

2.1.9.2.A: UK military personnel participating in the Gulf war and Iraq war

Lee et al (2002) found in their study on 3,000 UK Gulf war's consecutive veterans, who were attending Veterans Medical Service between 1993 and 2001, a 12% prevalence of PTSD, using a psychiatrists' assessment (Lee et al, 2002). Another study achieved by Jones et al (2006) using a random sample of 2,873 of UK veterans who deployed after 1999, showed that 53% had deployment experience and only 2.5% met the criteria of PTSD in 2002.

Hotopf et al (2006) reported health outcomes, in the largest population based-study of UK veterans, using a random sample of 4,722 UK armed forces personnel who had deployed to the 2003 War in Iraq and 5,550 personnel who did not deploy but were demographically similar in all other ways. Participants of both groups a 28-page

Questionnaire related to different health concerns such as; general well-being, alcohol consumption and PTSD symptoms. Findings revealed 4% of the sample had PTSD.
Browne et al (2007) reported from the same large sample, the prevalence rate of PTSD between deployed regular UK army was 4% compared to 6% for deployed UK army reservists.
Iversen et al (2008) reported PTSD prevalence of 3.7% among 4,662 UK veterans of Iraq war.

2.1.9.2.B: Canadian veterans participating in combat

A study conducted by the 2002 Canadian Forces Mental Health Survey of Regular Forces reported lifetime prevalence estimates of 7.2% and current estimates of 2.7% for those who have completed three or more operational tours. These percentages rise to 10.3% in their lifetime, and 4.7% over the previous year (Survey CCH, 2003).

2.1.9.2.C: Australian combat-related prevalence of PTSD

Regarding the prevalence of PTSD in Australian military forces, O'Toole et al (1996) reported a rate of 21% for lifetime and 12% current PTSD. In another study to determine the PTSD prevalence within the Gulf-War veterans (1,871) Ikin and his colleagues (2004) reported that ten to fifteen years after Gulf War 5.4% have current PTSD (Ikin et al., 2004).

2.1.9.2.D: Gulf War, 1991 combat-related prevalence of PTSD

Although the Gulf War lasted for a short period its effect was as traumatic as other wars. Since the end of the Gulf War till now veterans have reported a number of mental health problems (Perconte et al., 1993).
Many studies conducting to discover the psychological problems of Gulf War veterans have found that rates of PTSD stemming from the war range anywhere from about 9% to approximately 24% (Stretch et al., 1996; Stimpson et al., 2003). Another study conducted to explore the prevalence of PTSD in a population-based sample of 11,441 Gulf War Veterans from 1995 to 1997 found that the prevalence of current PTSD in this sample of Gulf War Veterans was 12.1% (Bartone, 2000; & Kang et al., 2003).

2.1.9.2.E: Iraq and Afghanistan Wars combat-related prevalence of PTSD

The majority of soldiers participating in Iraq and Afghanistan wars have been exposed to traumatic and combat-related conditions, such as being attacked or ambushed (92%), seeking dead bodies (94.5%), being shot at (95%), or knowing someone who was seriously injured or killed (86.5%) (Hoge et al, 2004). In 2008, the Centre for Military Health Policy Research published a population-based study that examined the prevalence of PTSD amongst previous service members deployed in Afghanistan and Iraq found that among the 1,938 participants, the prevalence of current PTSD was 13.8% (Tanielian & Jaycox, 2008).

2.1.9.3: Sex differences in prevalence of PTSD

One of the main causes to secure PTSD as a diagnostic category in the DSM was the feminist movement who were widely identifying the effects of rape on women who were victims of the so-called sex war (Herman, 2001). In United States of America a survey achieved by the US NCS which found that women (10.4%) had more lifetime PTSD than men (5%) confirming that PTSD was the most common anxiety disorder in women. In addition, sex differences were greater related to conditional risk: for women exposed to trauma 20.4% developed PTSD versus 8.2% of men exposed to trauma (NCS; & Kesseler et al., 1995), but the NCS replication does not believe sex differences in prevalence of PTSD (Kesseler et al., 2005a).

PTSD is considered to continue for longer in women than in men: a wide study in Detroit, USA found that the median length of PTSD was 48.1 months in women and 12.0 months in men (Breslau et al., 1998). The explanation of these differences is not completely recognized. Rape is considered one of the highest conditional risks for PTSD and more women than men reported rape, sexual abuse, and child abuse. But men are more likely reporting to be threatened with a weapon and physical assault and combat (Kessler et al., 1995).

2.1.10: PTSD Co-morbidity

PTSD has a high co-morbidity with most other psychological disorders, particularly depression and alcohol abuse. In the US National Co-morbidity Survey (NCS) reported

that 48.5% of women and 47.9% of men had co-morbid depression while 51.9% of men and 27.9 % of women had co-morbid alcohol abuse (Kessler et al., 1995). Alcohol abuse may happen due to PTSD sufferers attempting to control arousal signs (van der Kolk et al., 1996a).

PTSD also has co-morbidity with a high risk of suicide, which maybe expected given that a third of cases may develop in to chronic and unrelieved PTSD. There were recognized results of high risk for suicide related to combat circumstances (Adams et al., 1998). For women who were raped, approximately one in five had suicide attempt (Steketee & Foa, 1987).

In a sample of the general population in patients had suffered from chronic PTSD, 56.4% of them had some features of suicide; 38% reported suicidal thoughts, 8.5% had planned to suicide and about 9.6% had a suicidal attempt since they had experienced trauma (Tarrier & Gregg, 2004). In the Australian National Mental Health and Wellbeing Survey (ANMHWS) McFarlane (2004) revealed higher probable percentages for different aspects of suicide in PTSD than depression (McFarlane, 2004).

A recent assessment of 12 month prevalence estimates are 2.6% for suicide ideas, 0.7% for plans and 0.4% for attempts (Borges et al., 2006). In a study to particularly explore the existence of suicidal behaviour in adolescents who met the diagnostic criteria for PTSD Waldrop et al (2007) reported, after controlling the effect of depression, that the experience of PTSD and/ or victimisation in the course of sexual or physical abuse were considered as major risk factors for suicidal ideation and attempts in a large national likelihood sample of adolescents (n=4023) (Waldrop et al., 2007). So it is believed that the prevalence of PTSD and its related co-morbidity forms one of the major community health-related problems.

2.1.11: Risk factors for PTSD

It is not easy to predict precisely who may develop PTSD after a certain traumatic event (Bisson, 2007) and not all trauma victims develop PTSD. Consequently, more awareness has been cast on the exposure factors that might cause an individual to

develop this disorder or to protect potential victims from it (Wohlfarth, 2002). Additional estimation of risk factors for PTSD will help in its prevention.

The most reliable risk factors of PTSD's onset are a triggering event, or trauma, which is essential for the diagnosis of PTSD (DSM-IV-TR, 2000). These include: 1- survivors of physical assault, rape, domestic violence, sexual abuse; 2- survivors of unpredicted situations in daily life such as natural disasters, car accidents, large disastrous acts such as terrorist attack and plane crash, human mistake disasters such as industrial incident, neglect children, physically and sexually abused children, war veterans or civilian victims of war, individuals who were diagnosed with a life-threatening disease, people who join in emergency procedures during a traumatic situations, and those who experienced deep sadness as a result of an unexpected death of loved ones (Schiraldi, 2000).

In addition to the triggering event other risk factors and conditions can be classified into three categories (Brewin et al., 2000; & Ozer et al., 2003): firstly, pre-traumatic risk factors; secondly, peri-traumatic risk factors; and lastly, post-traumatic risk factors. These factors are further divided into other sub-categories (Brewin, & Valentine, 2000; & Ozer et al., 2003):

2.1.11.1: Pre-Trauma risk Factors

Regarding pre-trauma risk factors, Brewin et al. (2000) have recognized different factors such as prior psychiatric disorders, early childhood vulnerability and a family history of psychological illnesses as independent risk factors for PTSD. Other individual factors such as previous trauma, low education, female gender, ethnic minority status and younger age have also been shown to be associated with PTSD in both the general population (Brewin et al., 2000; & Ozer et al., 2003) and the military (Riddle et al., 2007). A number of researchers reported that degree of exposure to potentially traumatic situations and severity of trauma are related to the risk of PTSD (Brewin et al., 2000; & Hoge et al., 2004).

2.1.11.1.A: Risk factors related to Individual characteristics

Prior Traumas

Previous trauma makes persons, especially those who are easily affected, vulnerable to repeated attacks of PTSD. This is if the PTSD developed after the first exposure and is associated with the ease that unresolved previous traumas are recalled and re-experienced, in addition to the possibility of repeating previously ineffective coping behaviours (Schiraldi, 2000).

Existent Stressors

Current events in an individual's life that are not of a traumatic extent such as divorce, and financial problems can deteriorate the person's defenses against trauma-induced stress in the same way that persistent problems can deteriorate the immune system (Schiraldi, 2000).

Weak Coping abilities

Weakness in some coping skills can raise an individual's possibility of developing PTSD. E.g. such weak coping skills include: inability to express emotions; low self-esteem, and low resilience. The positive aspects of this set of risk factors are that they can all be learned. However, suffering from PTSD can itself promote these weak abilities (Schiraldi, 2000).

Traits of personality

Some enduring traits deny a person the necessary elements to deal with a taxing hardship such as PTSD. Such traits are introversion, pessimism, pre-existing avoidant personality or behavioural problems, and poor social support. These traits can be modified, but not to the same level as coping abilities, (Schiraldi, 2000; & Yehuda et al., 2006).

Gene-related risk factors

Schiraldi (2000) reported that vulnerability to PTSD can be induced through family members, and aggravated by certain behaviours such as trauma experience and drug abuse. But it is not presently recognized how these risk factors interrelate or even

whether they individually or collectively reveal a genetic diatheses or reaction to a previous life experience (Bromet et al., 1998; Schiraldi, 2000; & Yehuda et al., 2006).

Brain-related risk factors

In brain the main centre of learning and memory is the hippocampus, which appears to be harmed in PTSD victims (Durand, 2006). Studies on some mammals such as rodents and primates point to a traumatic stimulus leading to undesirable functional and structural alterations in the hippocampus. Shrinking in the size of hippocampus can result when too much stress changes the chemical balances in the brain, which disturbs the functions of certain systems such as learning and memory. The chemicals implicated in this structure alteration consist of glutamate, GABA, norepinephrine, serotonin, and cortisol. A host of other chemicals and structures are believed to play a role in PTSD (Nutt, 2000).

Pathway impairment

The impairment of GABA & glutamatergic pathways is concerned in developing and continuance of PTSD. These two amino acids, GABA, and glutamate, act in cycle to convert experience and stimuli into memory. Excessive stress can badly affect these pathways, in the end causing continuing changes in synapses that cause abnormal encoding of memory. Basically, memories can become severely inbuilt when these pathways are excessively stimulated by stress. This mechanism helps to describe the re-experiencing symptoms of PTSD, such as 'flashbacks' (Nutt, 2000). At the same time, these flashbacks act as re-traumatization, exposing the sufferer of the early trauma to recurring experiences that can be just as stressful as the new original one (McFarlane, 2000).

Gender-related risk factors

Gender is considered an important and well-studied risk factor for PTSD. Men have been reported to have experienced more traumatic events during their lives, but women have a higher rate of prevalence of PTSD (Perkonigg et al., 2000). A related study revealed that, although, men experience more traumas throughout life than

women, this excludes sexual abuse, in which women are more likely to experience trauma. This exception is important because sexual traumas are a strong risk factor for PTSD (Kimerling et al., 2002). In addition, although men are prone to experience more traumas, women's personal experience of trauma is often more threatening than that of men. Thus, trauma exposure differences among the genders generally dissolve once subjective elements are considered. Not only are women twice as likely as men to develop PTSD but the course of PTSD in women is more likely to be chronic (Breslau et al., 1999). Finally, it is likely that men's risk for PTSD catches up with women's in settings that are chronically affected by war or violence (Kimerling et al., 2002). This finding is supported by Wolfe et al. (1999) who found that found that PTSD rates following Gulf War combat experience were higher in men than women.

2.1.11.1.B: Family-related risk factors

The healthy setting of a family can play a major role in providing the child with suitable protection against PTSD. So in such familial circumstances the child is able to learn a lot about coping strategies, to grow self-confidence, and most importantly, to found a concrete and affectionate supportive system to guard them. Schiraldi (2000) reported that learning through role modelling, a child of a divorced parents may witness behaviours, feelings, and thoughts, such as mistrust and blaming of others, that are harmful to their mental health (Schiraldi, 2000).

Familial past history of psychological disorders

Durand (2006) reported that a family with the history of, for example, anxiety can influence the person to develop PTSD, which itself is a type of anxiety disorder. Similarly, a family with past history of PTSD or trauma experience may influence the other family members with the disorder. In addition, parents who have experienced a trauma and have been victims may teach their children some of maladaptive methods of coping with these stressors. These parents might also be emotionally unsupportive as a result of their traumatic experiences, leaving those children without a required support which might predispose them to PTSD.

2.1.11.2: Peri-Trauma risk Factors

Ehlers and Clark (2000) concluded that objective degree of trauma experience can, nevertheless, be less predictive of PTSD than the persons' appraisals of the traumatic situation and its outcome. These appraisals have been shown to predict PTSD over and above objective traumatic situation severity (Halligan et al., 2003). The recognized threat to life throughout traumatic situation is among the greatest of established predictors for PTSD (Ozer et al., 2003). There is also evidence to indicate that an individual's common sense of unpredictability and uncontrollability throughout a traumatic situation increases the risk of PTSD (Basoglu et al., 2005; & Basoglu et al., 2007). On the other hand, a sense of awareness in political torture sufferers is associated with less perceived distress during torture and less severe psychological sequelae afterwards (Basoglu et al., 1997). Schiraldi (2000) concluded that a traumatic event is more likely to harmfully affect the sufferer if, in the early time following the occurrence of the traumatic event, he or she detaches; believes that he or she is to blame, somehow, or did not carry out all they could to solve the condition as it happened; and lastly, believes himself or herself alone or isolated.

2.1.11.2.A: Severity of Traumatic situation

With low level stressful situations or traumatic events, individual vulnerabilities are more important in determining the development of PTSD. Furthermore, the more severe traumatic events are likely to lead to PTSD more often and result in more chronic conditions of PTSD (Durand, 2006).

2.1.11.2.B: Closeness to Trauma

The individual's closeness to a traumatic situation has been found to be directly linked to their level of follow-on stress and the development of PTSD. Pynoos et al. (1987) found a remarkable demonstration of this fact in their study of children at the Los Angeles school who survived a sniper shooting at the school playground. The closer the children were to the school playground, where the bullets were fired and casualties occurred, the higher scores of their reported stress response, prevalence, and severity of PTSD.

2.1.11.2.C: Sort of Traumatic event

The sort of trauma, for example; torture, murder, natural disaster, wartime combat, rape, and violent attack or an assault, interact with other risk factors such as age, trauma severity, gender, to produce differing vulnerabilities to PTSD for each type.

2.1.11.2.D: Nature of Traumatic event

The PTSD victim's susceptibility rises if the traumatic event takes place unexpectedly, recurrently, unpredictably, or enduringly. In addition, the risk of developing PTSD rises if the event causes a real threat or harm to the victim's integrity; if the traumatic event has multiple aspects such as natural disaster followed by drought, and if the traumatic event happens early in life (Schiraldi, 2000).

2.1.11.3: Post-Trauma risk Factors

The environment of recovery after exposing to trauma may act as a defensive factor and help the victim endure the situation.

2.1.11.3.A: Lack of social support

The most vital protective element after traumatic situations is the capability to depend on family members, friends, and even the community to avoid loneliness and distract the victim from the traumatic memories. Apparently supportive persons at times make the victims feel that they have to just get control over the situation (Briere, 2004). In addition, significant levels of social support after trauma is linked to lower PTSD risk in the general population (Brewin et al., 2000; & Ozer et al., 2003) and in military personnel (Green & Berlin, 1987; Solomon et al., 1988; Green et al., 1990; Solomon et al., 1990, 1991; Sutker et al., 2005; King et al., 1998; & Neria et al., 1998), as well as in non-military occupational settings such as the police (Carlier et al., 1997).

2.1.11.3.B: Post-trauma blaming risk factors

Particular sufferers of some traumatic situations, such as some rape cases, are shamed or refuse to accept the fact of occurrence of the event. This denial helps only to multiply the distress of the sufferer. The same thing happened to veterans returning

from the Vietnam War, in spite of their suffering from shell shock they had to deal with the public critics of the war for which they had made great sacrifices (Schiraldi, 2000).

2.1.11.3.C: Lack of Treatment

Some victims of traumatic situations do not have the desire to look for treatment and this matter may isolate the victim and lead PTSD chronic PTSD (Schiraldi, 2000). The most common reason for not seeking treatment was that victims did not think they had a problem (Kessler, 2000).

2.2: Anxiety disorder

2.2.1: General considerations

Anxiety is defined as an unpleasant and unjustified sense of apprehension, which derives from an inappropriate or excessive internal stimulus, often accompanied by physiological manifestations and a feeling of uneasiness, apprehension, or dread (Sadock, & Sadock, 2007). These feelings may be accompanied by symptoms such as; restlessness, muscular tension, palpitation, breathlessness, a chocking sensation, tightness in the chest, giddiness, trembling, and flushing, which are produced by the action of the sympathetic autonomic nervous system (Durham & Allan, 1993; Rosenbaum & Fava, 1998; & Sadock, & Sadock, 2007).

Anxiety, at an acceptable level, is considered a natural reaction and a necessary warning adaptation in human being but it can become a pathologic disorder when it occurs excessively and uncontrollably (Stern & Herman, 2004). Anxiety disorders include; generalized anxiety disorder, obsessive-compulsive disorder, social phobia or social anxiety disorder, specific phobia, panic disorder with and without agoraphobia, posttraumatic stress disorder, anxiety secondary to medical condition, substance-induced anxiety disorder, and acute stress disorder (APA, 2000).

Anxiety has been ever-present in the human being much research has been conducted in order to find a suitable therapy that would effectively cure this invasive and disturbing condition (Clark & Beck, 2011). Nowadays, catastrophic events brought about by natural disasters or cruel acts of crime, terrorism, or violence have produced a public climate of apprehension and anxiety in most countries around the world. Natural disasters such as earthquakes, tsunamis, hurricanes have important negative impacts on the psychological status of affected populations in both developing and developed countries with symptoms of anxiety and posttraumatic stress showing extensive increase in the weeks instantly following the disaster (Norris, 2005).

High levels of anxiety and other posttraumatic stress symptoms appear in the first few weeks after act of war, terrorist attack, or other large-scale acts of community

violence. After the September 11, 2001, terrorist attacks on the World Trade Centre towers in New York City, symptoms of posttraumatic stress disorder (PTSD) doubled after five to eight weeks (Galea et al., 2002). Two thousands seven hundred and twenty nine persons, who were outside the city of New York, jointed in an Internet-based survey which found that 17% of persons reported PTSD symptoms two months after 9/11 (Silver et al., 2002). In another telephone-based survey achieved by the National Tragedy Study (NTS), found that five months after the 11/9 terrorist attack 30% of Americans reported difficulty in sleeping, 27% suffered from nervousness or tension, and 17% said that they were concerned too much about future terrorist attacks (Rasinski et al., 2002). Another survey accomplished by the Gullop Youth Survey of American teenagers indicated after two years and half of 9/11 terrorist attack that 39% of teens were either 'very' or 'somewhat' concerned that they or someone in their families will be a victim of a terrorism (Lyons, 2004).

Even though extensive threats have their prolonged effects on the psychological morbidity of individuals directly affected by the disaster in the weeks immediately following the traumatic event, their wider effects are evident months and years later in the heightened concerns and worries of a significant proportion of the general population (Clark & Beck, 2011).

Apprehension, anxiety, and worry, however, are not the exclusive characteristics of disaster and other life-threatening situations. Most cases of anxiety develop with the different kinds of pressures, demands, and stresses of daily living. It is argued that anxiety disorders represent the major mental health problem in USA (Barlow, 2002), with about nineteen million American adults having anxiety disorder in any given year (National Institute of Mental Health, 2001). Around 12% to 19% of primary care patients meet diagnostic criteria for an anxiety disorder (Ansseau et al., 2004; Olfson et al., 1997). In addition, the medications such as mood stabilizers and antidepressants are the third most prescribed medicines, with total worldwide sales in 2003 of 19.5 billion US dollar (IMS, 2004). Therefore, millions of people around the world are struggling, every day, against anxiety disorders and their symptoms. The effects of anxiety disorders could be a major cause of burdens to the economy, and social and

health care systems for most of the countries, in particular in poor and developing countries that face many social and political disturbance and high rates of natural disasters (Clark, & Beck, 2011).

2.2.2: Fear versus Anxiety

The nature and function of human emotions have been a source of argument and contrasting points of view. In addition, all psychologists who believe in the existence of basic emotions, however, consider that fear is one of these emotions (Öhman and Wien, 2004). Fear arises arises as a healthy adaptive response to an apparent danger or threat to individual's physical safety, integrity, and security. In addition, fear warns the individuals of forthcoming threats and the necessity for fast defensive action (Beck and Greenberg, 1988; Craske, 2003). However, fear could be maladaptive when it happens in a situation which is considered of no danger, nonthreatening and/ or neutral. This neutral or nonthreatening situation might be misinterpreted as indicating to a potential danger or threat. Therefore two important topics are supposed to be fundamental to any theory to understand the anxiety: how to differentiate between fear and anxiety, and how to decide what a normal versus an abnormal reaction is (Clark, & Beck, 2011).

2.2.2.1: How to define Fear and Anxiety

In English language there are many words which relate to the subjective experience of anxiety: worry, panic, horror, dread, fear, fright, apprehension, nervous, and terror (Barlow, 2002). This situation has raised a significant uncertainty and imprecision in the general application of the term anxious. Nevertheless, anxiety and fear must be noticeably differentiated in any theory that supposes to assist research in and interventions for anxiety (Clark, & Beck, 2011).

Barlow stated that "fear is a primitive alarm in response to present danger, characterized by strong arousal and action tendencies', and defined the anxiety as "a future-oriented emotion, characterized by perceptions of uncontrollability and unpredictability over potentially aversive events and a rapid shift in attention to the

focus of potentially dangerous events or one's own affective response to these events" (Barlow, 2002, p.104).

In different point of view on how to differentiate between anxiety and fear, Beck, Emery, and Greenberg (1985) defined fear as a cognitive course linking to "the appraisal that there is actual or potential danger in a given situation" (p. 8) and anxiety is an emotional response triggered by fear. Therefore fear "is the appraisal of danger; anxiety is the unpleasant feeling state evoked when fear is stimulated" (Beck et al., 1985, p. 9, cited in Clark, 2011). Barlow and Beck both believe that fear is a distinct, basic construct while anxiety is more general subjective response (Clark, 2011). Beck et al. (1985) emphasized on the cognitive nature of the fear while Barlow (2002) focused on its automatic neurological and behavioural features (Clark, 2011).

2.2.2.2: Abnormal fears and anxiety and Normal

To feel anxious and to experience fear are considered to be a normal instinct before imminent events. Fear has an adaptive role that is significant to survival by warning and preparing the individual to respond to life-threatening dangers and urgent situations (Barlow, 2002; and Beck et al., 1985). Furthermore, fears are a veryt familiar experience during childhood, and also mild symptoms of anxiety are regularly reported in adulthood (Craske, 2003). Thus how normal fear should be distinguished from abnormal fear? What level of anxiety should be considered as an excessive and requires medical treatment? Clark and Beck (2011) suggested five criteria that can be used to distinguish abnormal state of fear and anxiety. It is not necessary that all these criteria be present in a particular case, yet one would expect many of these characteristics to be present in clinical anxiety states.

2.2.2.3: Distinguished criteria for abnormal anxiety and fear

2.2.2.3.A: Dysfunctional cognition.

A fundamental principle of the cognitive theory of anxiety is that abnormal fear and anxiety is created from a false guess involving an incorrect appraisal of danger in a situation that is not confirmed by direct observation (Beck et al., 1985). The activation of dysfunctional beliefs about threat and associated cognitive-processing errors leads

to noticeable and excessive fear that is not coherent with the objective certainty of the situation (Clark, & Beck, 2011).

2.2.2.3.B: Impaired functioning.

The successful and adaptive coping in the face of an apparent threat may interfere directly with clinical anxiety and more generally in the person's daily social or occupational functioning. There are examples in which the activation of fear results in an individual freezing, feeling paralyzed in the face of danger (Beck et al., 1985). Barlow (2002) indicated that rape survivors repeatedly report physical paralysis at some point during the attack. In addition, in some cases the fear and anxiety may lead to a counterproductive response that raises the risk of harm or danger. It is also recognized that clinical fear and anxiety usually interfere in a person's ability to lead a productive fulfilling life. Therefore, in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, APA, 2000), marked distress or "significant interference with the person's normal routine, occupational (or academic) functioning, or social activities or relationships" (p.449) is one of the core diagnostic criteria for most anxiety disorders.

2.2.2.3.C: Persistence.

Regarding medical considerations anxiety could persist much longer than would be expected normal usual situation. Anxiety prompts a future-oriented perspective that involves the expectation of threat or danger (Barlow, 2002). Consequently the individual with clinical anxiety can feel a heightened sense of subjective fear by just thinking about an imminent possible threat, regardless of whether it eventually appears. Thus it is not uncommon for anxiety-prone persons to experience strong feelings of anxiety on a daily basis over many years (Clark & Beck, 2011).

2.2.2.3.D: False alarms.

In anxiety disorders an individual finds a lot the occurrences to be false alarms, what Barlow (2002, p. 220) described it as "marked fear or panic that occurs in the absence of any life-threatening stimulus, learned or unlearned". The continuation of panic attacks or intensified fear despite a lack of threat cues or very minimal threat aggravation would propose a clinical problem.

2.2.2.3.E: Stimulus hypersensitivity.

Öhman and Wiens (2004) cited that fear is a "stimulus-driven aversive response" (p.72) to an external or internal prompt that is supposed to be a possible threat. Though, in clinical conditions fear is elicited by different stimuli or situations of quite mild threat intensity that would be perceived as harmless to the non-fearful person (Beck and Greenberg, 1989). Persons with an anxiety disorder would understand a wider range of states as threatening compared to persons without an anxiety disorder.

2.2.3: Evolution the concept of Anxiety

Mental illness and anxiety have been recognized before recorded history, with the first explanation for mental illness was described by ancient Babylonians. They ascribed mental illness to the anger of powerful deities who had been angered by man's corrupt deeds and the ancient Greeks were the first to develop the dualism of mind and brain which now characterizes psychiatry (Gabriel, 1987).

The idiom of 'panic' is derived from the Greek God 'Pan' who could inspire devastating and irrational fear in particular when troubled from his sleep. The word 'anxiety' is derived from the Latin 'angere' which means 'choke' or strangle; from modern Greek 'anesuchia' whose meaning is 'not calm'; and from the Latin 'anxietas' meaning a 'lasting state of fearfulness'. The word fear is derived from the Germanic language 'angst'; and in Romans time 'angina' was a term used to signify devastating sensation in the chest and associated dread (Hunt, 1988; & Stein, Hollander, & Rothbaum, 2010). During medieval and the Renaissance times, anxiety, as it is used nowadays, was often conflated with the concept 'melancholia'. The concept of 'anxiety disorder' was not confined to the West, Ibn Sina (Ali Al-Husayn, 980-1037, the Arabic Muslim physician who lived in Persia during the Islamic era) wrote 'Canons of Medicine' which covered all conditions including mental conditions such as; mania and melancholy. In his book, Ibn Sina described the diagnosis and treatment of a case of combined depression and anxiety which he called 'Lovesickness' (Stein, Hollander, & Rothbaum, 2010). By nineteenth century, anxiety was not just a single condition but an umbrella term for a variety of conditions such as; lovesickness, obsessive-compulsive symptoms, fainting

spells, and hypochodriasis (Hunter & Macalpine, 1963). During the nineteenth century, literature written by Christian Spiess (1796) in Germany; John Haslam (1809) in England; and Karl Ideler (1841) in Berlin, included general psychological problems such as anxieties and conflicts of everyday life. In French, anxiety was described as a 'three-stage process' starting with 'inquietude' then developed to anxiety and then ended with 'anguish' (Littre & Robin, 1858). In Germany, Wilhelm Griesinger (1817-1868) thought that mental illness was due to the abnormalities of the brain cells and saw mental disease and physical disease as one (Stein, Hollander, & Rothbaum, 2010). The American neurologist Beard (1839-1883) gave the name of 'neurasthenia' (a weakness of the nerves) for the panophobia or 'lypemanie anxieuse'. The neurasthenia concept began to be popular for mental health practitioners who placed all types of anxiety-related cases within this broad category. Freud described anxiety neurosis by outlining the elements: general irritability; anxious expectation; anxiety that is constantly lurking in the background; rudimentary anxiety attacks; vertigo; phobias of snakes, darkness, vermin and etc...; waking up at night in a fright; digestive troubles; paresthesias; and chronic states, such as a constant feeling of lassitude (Stein, Hollander, & Rothbaum, 2010).

In the twentieth century, Freud's original concept of anxiety changed from excess of energy accumulating in the nervous system into a threat to one's equilibrium and well-being and was called an anticipatory anxiety (Busch, Milrod, & Singer, 1999). Jean Delay (1907-1987) was a psycho-pharmacologist who conducted extensive work into the aetiology of anxiety and with colleagues Deniker, and Pichot in the 1950s discriminated between anxiety and depression. Anxiety disorders were only recognized in 1980 by the American Psychiatric Association. Since 1980, international research has shown the severe disabilities associated with these disorders. Most of these disabilities can be prevented with early diagnosis and effective treatment (Stein, Hollander, & Rothbaum, 2010).

2.2.4: Prevalence of anxiety disorders

The reality is that the anxiety disorders are the most widespread of psychological disorders (Kessler et al., 2005). In addition, it is considered one of the most prevalent of all psychiatric disorders in the general population of the United State of America (Sadock & Sadock, 2007). Epidemiological studies related to anxiety disorders in adulthood revealed that 25% to 30% of adult participating in the study have an extraordinarily consistent lifetime prevalence rate for at least one anxiety disorder. Simple phobia is the most common anxiety disorder, with up to 49% of people in the USA reporting an unreasonably strong fear and 25% of those people meeting criteria for simple phobia (Kessler et al., 2005b). Social anxiety disorder is the next most commonly diagnosed disorder of anxiety, with approximately 13% of people reporting symptoms that meet the DSM criteria. PTSD, which is often unrecognized, afflicts approximately 7.8% of the overall population and 12% of women, in whom it is significantly more common. In victims of war trauma, PTSD prevalence reaches 20% (Sadock & Sadock, 2007).

In Iraq, data on the prevalence of anxiety disorders are presented from a 2007-8 national survey of the Iraq population, the Iraq Mental Health Survey (IMHS). The IMHS was conducted by the Iraq Ministry of Health in collaboration with the Iraq Ministry of Planning and the World Health Organization (WHO) World Mental Health (WMH) Survey Initiative. Interviews were administered to a probability sample of Iraqi household residents by trained lay interviewers. The WHO Composite International Diagnostic interview (CIDI) was used to assess DSM-IV. Anxiety disorders were the most common class of disorders (13.8%). Twelve-month prevalence of disorders were 13.6%, with 42.1% of cases classified mild, 36.0% moderate, and 21.9% serious (Al-Hasnawi et al., 2009).

The one-year prevalence for any anxiety disorder in the National Co-morbidity Survey (NCS) was 17.2%, compared with 11.3% for any substance/ dependence and 11.3% for any mood disorder (Kessler et al., 1994). The NCS lifetime prevalence, which includes all persons who have ever experienced any type of anxiety disorders, was 24.9%.

In the recent replication of the NCS (NCS-R), involving a nationally representative sample of participants (N= 9,282) interviewed between 2001 and 2003, the results indicated that 12-months prevalence for any type of anxiety disorders was 18.1% and approximate lifetime prevalence was 28.8%. These findings were remarkably similar to the first NCS (Kessler et al., 2005; and Kessler, et al., 2005a).

National surveys conducted in other Western countries such as Great Britain, Australia, and Canada have also reported high rates of anxiety disorders in the general population, and although the prevalence rates differ somewhat across different studies, that might be due to the differences in interview methodologies, diagnostic decision systems, and other differences in design aspects (Andrews et al., 2001; Jenkins et al., 1997; Canadian Community Health Survey, 2003).

The World Mental Health Survey Initiative, conducted by the World Health Organization (WHO), found that anxiety was the most common psychological disorder in every country, that participated in this survey, except the Ukraine (7.1%), with one-year prevalence ranging from 2.4% in Shanghai, China, to 18.2% in the USA (WHO World Mental Health Survey Consortium, 2004).

2.2.4.1: Differences in prevalence regarding the gender

Many studies findings indicated that there is a wide and significant difference in prevalence of anxiety disorders between men and women. Craske (2003) revealed that women have a considerably higher rate of prevalence of most anxiety disorders than men, but there is a potential exception for obsessive compulsive disorder (OCD), where the rate is about the same (Clark, 2004).

Returning to the NCS which found that women had a lifetime prevalence of 30.5% for any type of the anxiety disorders comparing with 19.5% for men (Kessler et al., 1994). Andrews et al. (2001) and Olfson et al. (2000) have confirmed in community-based studies that there is a two to one ratio of women to men in prevalence rates of anxiety disorders. Given that these gender differences were found in community-based surveys, the predominance of anxiety disorders in women cannot be an artefact due to greater service utilization. Craske (2003) concluded in a decisive review of research on

gender differences in anxiety disorders that women may report higher rates of anxiety disorders because of an augmented vulnerability such as higher negative affectivity; tendency to engage in more avoidance, worry, and rumination about potential threats; heightened sensitivity to reminders of threat and contextual threat cues; differential socialization patterns in which girls are encouraged to be more dependent, pro-social, empathic but less assertive and controlling of everyday challenges; and finally more pervasive anxiousness as evidenced by less discriminating and more over-generalized anxious responses (Clark & Beck, 2011).

2.2.4.2: Differences in prevalence related to Culture

Anxiety and fear exist in different cultures but their individuality in experiencing these two emotions is influenced by their cultural differences (Barlow, 2002). To compare the prevalence differences of anxiety across diverse cultures is difficult because the standard diagnostic classification manual, DSM-IV-TR (APA, 2000), is based on American concepts and experiences of anxiety that may not have high diagnostic validity in other cultures (van Ommeren, 2002). Also applying the WHO classification of anxiety disorders of the International Classification of Diseases, 10th Revision (ICD-10), is not essentially reliable for generalization to all different cultures because of the domination of the European-influenced Western experiences (World Health Organization, 1992). Therefore, it is better to apply the standard diagnostic and assessment approaches of European Western experience to anxiety and omit important expressions of anxiety that are more culture-specific (Clark & Beck, 2011).

An Iranian study conducted by Noorbala et al. (2004) based on a large community survey of 35,014 adult Iranians indicated that 20.8% had anxiety symptoms. Not only in the centres of cities were there significant rates of prevalence of anxiety disorders but also in distant rural or mountainous areas where there are less pressure and less modern industrial amenities. Mumford et al. (1996) found in their study in a mountain village in Pakistan that the incidence of anxiety and panic disorders was similar to rates reported in Western community surveys. However, countries do appear to have different population rates of anxiety disorders (Clark & Beck, 2011). The WHO world

Mental Health Survey found that one-year prevalence of DSM-IV criteria for anxiety disorders ranged from a low of 2.4% in Shanghai, 3.2% in Beijing, and 3.3% in Nigeria to 11.2% in Lebanon, 12% in France, and 18.2% in the United States of America (WHO World Mental Health Survey Consortium, 2004). These wide differences in prevalence rates increase the possibility that culture may have an effect on the rate of anxiety disorders across different countries, although methodological differences across locations cannot be ruled out as an alternative explanation for the differences (Clark & Beck, 2011). Barlow (2002) reported that somatic symptoms appear more prominent in emotional disorders in most countries outside of the European-influenced West.

2.2.5: Co-morbid disorders with Anxiety

Medical studies on anxiety has recognized over the last few decades that the previous idiom "anxiety neurosis" had limited logical value. In addition, most theories and studies on anxiety now propose that there are a number of anxiety subtypes that can be classified under the category of "anxiety disorders" (Clark & Beck, 2011). Although most specific anxiety disorders share some general descriptions such as the activation of fear in order to identify and avoid the threat, there are significant variations with implications for intervention (Craske, 2003). Psychiatric classification systems like DSM-IV suppose that psychiatric disorders such as anxiety include more specific subtypes with diagnostic boundaries that roughly distinguish one type of disorder from another. Nevertheless, a large number of diagnostic, epidemiological, and system-based studies have confronted this categorical approach to psychiatric nosology, offering much stronger evidence for the dimensional nature of psychiatric disorders like anxiety and depression (Clark & Beck, 2011). One of the biggest challenges to the categorical perspective is the evidence of broad symptoms and disorder co-morbidity in both anxiety and depression, the co-occurrence of one or more disorders in the same person (Clark et al., 1999). In the National Co-morbidity Survey and National Institute of Mental Health (NIMH) epidemiological study of mental disorders involving a randomized nationally representative sample of 8,098 Americans who were administered the Structured Clinical Interview for DSM-III R, only 21% of respondents

with a lifetime history of disorder had only one reported disorder (NCS; Kessler et al., 1994). The Philadelphia Centre for Cognitive Therapy evaluated 1,694 outpatients between January, 1986, and October, 1992, and found that only 10.5% of those with a primary mood disorder and 17.8% with panic disorder had a pure diagnosis without Axis I or II co-morbidity (Somoza et al., 1994).

2.2.5.1: Depression Co-morbidity

It is argued that anxiety disorders are more likely to happen with some disorders than with others. So, most research on co-morbidity has concentrated on the association between anxiety and depression. Around 55% of patients with one of the anxiety disorders or depressive disorders will have at least one further anxiety or depressive disorder, and this percentage increases to be 76% when bearing in mind lifetime diagnoses (Brown and Barlow, 2002).

In National Co-morbidity Survey 51% of participants inflected with reported anxiety disorder had major depressive disorder and this percentage increased to 58% for lifetime diagnoses (Kessler et al., 1996). In addition, anxiety disorders are more frequently expected to precede depressive disorders than the reverse (Schatzberg, et al., 1998).

Hunt, Slade, and Andrews (2004) indicated that anxiety disorder co-morbid with clinical depression was associated with a more prolonged disturbance, greater symptom severity, and greater functional impairment or disability.

2.2.5.2: Substance Use Co-morbidity

It is concluded by the review of Kushner et al. (2000) that the occurrence of an anxiety disorder would raise the risk of alcohol or drug dependence two to four times and they reported also that anxiety often precedes alcohol use disorder and contributes to its persistence, even though alcohol consumption can also lead to anxiety.

In addition, persons inflicted with an anxiety disorder are considerably more likely to consume alcohol and drugs than non-clinical controls (Sbrana et al., 2005). It is argued that there is a special connection between alcohol use and anxiety disorder compared with mood disorders. Anxiety disorders more often precede substance use disorders

(Merikangas et al., 1998), leading to the assumption that anxious persons must be self-medicating with alcohol. But, the idea of self-medication had not been supported in a seven-year prospective study in which alcohol dependence was as likely to increase risk of developing a subsequent anxiety disorder as was the reverse temporal association (Kushner et al., 1999). Kushner and colleagues concluded that anxiety and alcohol use disorders are likely to have mutual and interacting effects that will lead to an increase of both anxiety and alcohol use problems (Kushner et al., 1990; and Kushner et al., 2000). All these can lead to a self-destructive pattern which at the same time might lead to helplessness, depression, and increased risk of suicide (Barlow, 2002).

2.2.5.3: Co-morbidity amongst Anxiety subcategories

It is argued that the person who is inflicted with one anxiety subcategory can significantly increase the possibility of having another one or more additional anxiety disorders. Brown et al. (2001) found in their study that co-morbidity for another anxiety disorder ranged from 27% for specific phobia to 62% for posttraumatic stress disorder (PTSD). Generalized anxiety disorder (GAD) was the most common secondary anxiety disorder. Furthermore, PTSD, which had the highest co-morbidity rate for another anxiety disorder, panic disorder and GAD were the most common secondary anxiety cases. Also, social phobia and GAD tended to precede many of the other anxiety disorders. Analysis of lifetime diagnoses revealed even higher rates for occurrence of a secondary anxiety disorder (Clark & Beck, 2011).

2.2.6: Chronic anxiety and the disorder's course

Compared with major depression, anxiety disorders are often persistent over many years with relatively low remission but more variable rates of relapse after complete recovery (Barlow, 2002). A prospective study (eight years) by the Harvard-Brown Anxiety Disorder Research Program (HARP) found that only one-third to one-half of patients with social phobia, GAD, or panic disorder completed full remission (Yonkers et al., 2003). In the 15-year Zurich Cohort Study nearly 50% of persons with initial anxiety disorder developed, later on, just depression or depression co-morbid with

anxiety (Merikangas et al., 2003). A Dutch longitudinal study of 3,107 older persons found that 23% of participants with initial DSM-III anxiety disorder continued to meet criteria six years later, while another 47% experienced subclinical anxiety (Schuurmans et al., 2005). Given that the majority of these disorders have their onset in childhood and adolescence (Newman et al., 1996), the persistent nature of anxiety is a significant factor of its overall disease burden.

2.2.7: Effects of being anxious on quality of life

Being inflicting with one of the anxiety disorders, or having just anxious symptoms, are related to a important decline in quality of life and in social or occupational functioning (Mendlowicz & Stein, 2000). Olatunji et al. (2007) found in their review of twenty three studies that all persons with anxiety disorders experienced considerably lesser quality of life outcomes compared with control samples' participants; in addition quality of life impairments were generally the same across the anxiety disorders. Regarding the work performance outcome workers with one of anxiety disorders have a decrease in number of work days (Olfson et al. 2000) more disable working days (Marcus et al., 1997), and high rates of monetary reliance in the form of not being able to pay and constant joblessness (Leon et al., 1995). Having anxiety is also inclined to decrease the quality of life and social functioning in patients with co-morbid persistent non-psychiatric illnesses (Sherbourne et al., 1996).

Olfson et al. (1996) reported that in primary care units, patients who are not considered to meet diagnostic criteria for generalized anxiety disorder (GAD), panic disorder and/ or obsessive-compulsive disorder (OCD) but have the symptoms of such disorders reported considerably more days of lost work. The negative impact of anxiety disorders in terms of distress, disability, and utilization of services can be even greater than for patients whose major problem is a personality disorder or substance abuse (Andrews et al., 2002).

Compared with medical illnesses Sherbourne et al. (1996) reported that patients with panic disorder show significantly lower social functioning and role functioning in daily performances than patients with chronic medical illnesses such as hypertension.

There are estimations of the direct (through direct services) and indirect (lost of production days) costs of anxiety disorders and these are both substantial. For example; Marcus et al. (1997) found that in one American Self-reported anxiety study an estimated 60.4 million days/ year in lost productivity, which was the same level of loss related to the common cold or pneumonia. The estimated annual cost of all types of anxiety disorders in 1990 were 42.3 billion US dollars (Greenberg et al., 1999), while the annual economic costs of the anxiety disorders as reported by Rice and Miller (1998) were bigger than that for schizophrenia.

2.2.8: The biology of Anxiety

Anxiety is a complicated disorder and related to many different factors of the behavioural, physiological, affective, and cognitive fields of human function. Beck et al. (2005) reported four functional structures which sub-classify the symptoms of anxiety that related to the adaptive response to threat and danger.

2.2.8.1: Symptoms of anxiety related to human function

2.2.8.1.A: Physiological symptoms

- Increase heart rate, palpitations;
- Shortness of breath, rapid breathing;
- Chest pain or pressure;
- Choking sensation;
- Dizzy, lightheaded;
- Sweaty, hot flashes, chills;
- Nausea, upset stomach, diarrhoea;
- Trembling, shaking;
- Tingling or numbness in arms, legs;
- Weakness, unsteady, faintness;
- Tense muscles, rigidity; and
- Dry mouth

2.2.8.1.B: Cognitive symptoms

- Fear of losing control, being unable to cope;
- Fear of physical injury or death;
- Fear of "going crazy";
- Fear of negative evaluation by others;
- Frightening thoughts, images, or memories;
- Perceptions of unreality or detachment;
- Poor concentration, confusion, distractible;
- Narrowing of attention, hyper-vigilance for threat;
- Poor memory; and
- Difficulty in reasoning, loss of objectivity

2.2.8.1.C: Behavioural symptoms

- Avoidance of threat cues or situations;
- Escape, flight;
- Pursuit of safety, reassurance;
- Restlessness, agitation, pacing;
- Hyperventilation;
- Freezing, motionless; and
- Difficult speaking

2.2.8.1.D: Affective symptoms

- Nervous, tense, wound-up;
- Frightened, fearful, terrified;
- Edgy, jumpy, jittery; and
- Impatient, frustrated

The usual physiological reactions that normally happen in the occurrence of threat or danger are considered a kind of defensive reactions. These reactions, which are recognised in the many conditions of fear-elicited situations for both animals and human beings, involve autonomic arousal that prepares that animal or human being to

deal with danger by fleeing (flight) or by directly face the danger (fight), this course of action being identified as the 'fight-or-flight' response (Canon, 1927).

According to the physiological reactions behavioural involved escape or avoidance are referred to as the safety-seeking responses; the cognitive reactions provide the significant explanation of our internal situation as that of anxiety; and finally the affective domain is resulted from cognitive and physiological situations, and comprises the subjective experience of feeling anxious (Clark & Beck, 2011).

2.2.8.2: Psycho-physiological aspects of anxiety

Many of the previously listed symptoms of anxiety are physiological in nature and activate the sympathetic nervous system (SNS) and parasympathetic nervous system (PNS). In addition, the activation of the SNS is the most important physiological reaction in anxiety, that leads to hyper-arousal symptoms such as constriction of the peripheral blood vessels, increased strength of the skeletal muscles, increased heart rate and force of contraction, dilation of the lungs to increase oxygen supply, dilation of the pupils for improved vision, cessation of digestive activity, increase in basal metabolism, and increased secretion of epinephrine and nor-epinephrine from the adrenal medulla (Bradley, 2000; & Clark, & Beck, 2011). In addition, all of these peripheral physiological responses are linked to the arousal but cause, at the same time, different perception-related symptoms such as trembling, shaking, hot and cold spells, heart palpitations, dry mouth, sweating, shortness of breath, chest pain or pressure, and muscle tension (Barlow, 2002).

In addition, the function of parasympathetic nervous system (PNS) activation, which causes a series of physiological responses, has not yet been investigated in anxiety (Clark & Beck, 2011). The PNS is responsible for symptoms such as strong immobility, drop in blood pressure, and fainting, which are a type of so-called 'conservation-withdrawal' response strategy (Friedman & Thayer, 1998 cited in Clark & Beck, 2011). The results of PNS stimulation include decreased heart rate and force of contraction, constricted pupils, relaxed abdominal muscles, and constriction of the lungs (Bradley, 2000). Furthermore, studies on heart rate changeability during panic attacks indicated

that the cardiovascular hyperactivity related to the anxiety should not be explained just in terms of extreme SNS activation but also by reduced compensatory PNS excitation. So the parasympathetic nervous system (PNS) most likely plays a larger role in anxiety than previously thought (Clark & Beck, 2011).

The elevation of autonomic arousal level in the presence or absence of an anxiety-producing situation is one of the strongest and continuing findings in the past 50 years of psycho-physiological studies. Barlow (2002) indicated that persistently anxious individuals show a constantly elevated autonomic arousal level often in the absence of an anxiety-producing situation. However, experimental studies to support evidence for autonomic variations between persons inflicted by anxiety and other non-anxious control participants regarding stressful, fearful and/ or threatening stimuli have not been consistently reported (Barlow, 2002). Freidman and Thayer (1998) also indicated that reduced heart rate and electro-dermal variability challenge the view that anxiety is considered by excessive autonomic ability and reactivity. However, anxious persons do illustrate a slower decline in their physiological response to stressors, but this is most likely as result to their early elevated baseline arousal level (Barlow, 2002).

Recent research related to psycho-physiological considerations suggests that persons with chronic anxiety show reduced autonomic flexibility in response to stressful situations (Noyes & Hoehn-Saric, 1998). In a study of heart rate reactivity under baseline, relaxation, and worry conditions, Thayer et al. (1996) found that individuals with GAD or those actively engaged in worry had lower cardiac vagal control, which supports the view that GAD is characterized by autonomic inflexibility. Overall, the significant psycho-physiological characteristics of anxiety disorders such as elevated basal arousal level, slower habituation, and reduced autonomic flexibility might be due to the misunderstanding of threat that is the core cognitive nature of anxiety disorders. But a different physiological response model may differentiate panic disorder, phobia, and GAD, which avoids generalizing research results within the anxiety disorders. In addition, it would be uncertain whether the anxiety condition is chiefly an excess of SNS activation and a removal of vagal activity, or whether SNS

activity is reduced and PNS activity stays normal under the circumstances of daily living (Clark & Beck, 2011).

2.2.8.3: Genetic consideration of anxiety

It is well-documented that most types of the anxiety disorders run in families, if parents or other close family have an anxiety disorder, children could be at a higher risk of developing an anxiety disorder during their life. Family environmental factors are also important; living in a family in which fear and anxiety are experienced can have a detrimental effect on a person in his/ her adulthood (Kendler, & Prescott, 2006). Hettema et al. (2001) in their meta-analysis of family and twin studies for phobias, panic disorder, OCD, and GAD reported that there are significant familial aggregates for all four disorders, with the strongest evidence for panic disorder. In addition, genetic factors have been studied more, and researchers have found genetic predisposition for two broad groups of anxiety disorders: a panic disorder and specific phobias such as agoraphobia (Hettema et al., 2005).

For all anxiety disorders, estimations of heritability ranged between 30% and 40%, leaving the biggest percentage of the differences due to personal differences related to environmental variation. Even at the symptomatic level, heritability accounts for just 27% of the unpredictability by predisposing individuals to general distress, with environmental factors determining the increase of specific anxiety or depressive symptoms (Kendler et al., 1987). In addition, Barlow (2002) raised the possibility that a separate genetic transmission might be evident for anxiety and panic. A prior study achieved by Kendler et al. (1992a) also indicated that there were common genetic factors for major depression and GAD with specific consideration for each disorder recognized by experiencing different life events. Kendler and his colleagues (1995) using structural equation modelling of diagnostic data collected on a large-sample female twin study, found separate genetic risk factors for major depression and generalized anxiety disorder (GAD), on the one hand, and for acute, short-lived anxiety like phobias and panic, on the other.

There are no solid confirmations that persons inherit particular anxiety disorders, but there is strong support, which depends on empirical study results, that there is a strong probability for inheritance of a general vulnerability to develop an anxiety disorder (Barlow, 2002). But this nonspecific vulnerability for anxiety could be negative affectivity, high trait anxiety, neuroticism, or so-called by Barlow, et al. (2004) a 'negative affect syndrome'. Vulnerable persons might demonstrate a stronger emotional reaction to rough or stressful situations. Nevertheless, environmental and cognitive causes could interrelate with this genetic disposition to decide which of the specific anxiety disorders is experienced by an exacting person.

2.2.8.4: Neurophysiologic aspects of anxiety

During last few years fast progress has been reported to in the understanding of the neurobiological sources of anxiety and fear. In addition, the significant finding that has appeared is the vital function of the amygdala in emotional processing and memory (Clark & Beck, 2011). Animal and human research revealed the direct involvement of the amygdala in the emotional inflection of memory, the assessment of stimuli with affective significance, and the appraisal of social signals related to danger (Anderson & Phelps, 2000). LeDoux (2000) in his research regarding the auditory fear conditioning, contributed most of the manifestations to the involvement of the amygdala as the neural substrate for the achievement of conditioned fear responses. LeDoux (1989) argued that one of the most significant tasks to the emotional brain is to appraise; the affective significance, such as threat versus non-threat; of mental such as thoughts and memories; physical; or external stimuli and he had anticipated two similar neural paths in the amygdala's dealing out of fear stimulus:

- The first path is responsible for the direct transmission of a conditioned fear stimulus through the sensory thalamus to the lateral nucleus of the amygdala, bypassing the cortex;
- The second path is responsible for the transmission of fear stimulus information from the sensory thalamus through the sensory cortex and on to the lateral nucleus

Inside the amygdala region: the lateral nucleus, which receives inputs in fear conditioning, activates the central nucleus that is responsible for the expression of the conditioned fear response. Figure 2.1 shows the two parallel pathways of LeDoux's conditioned fear reaction system.

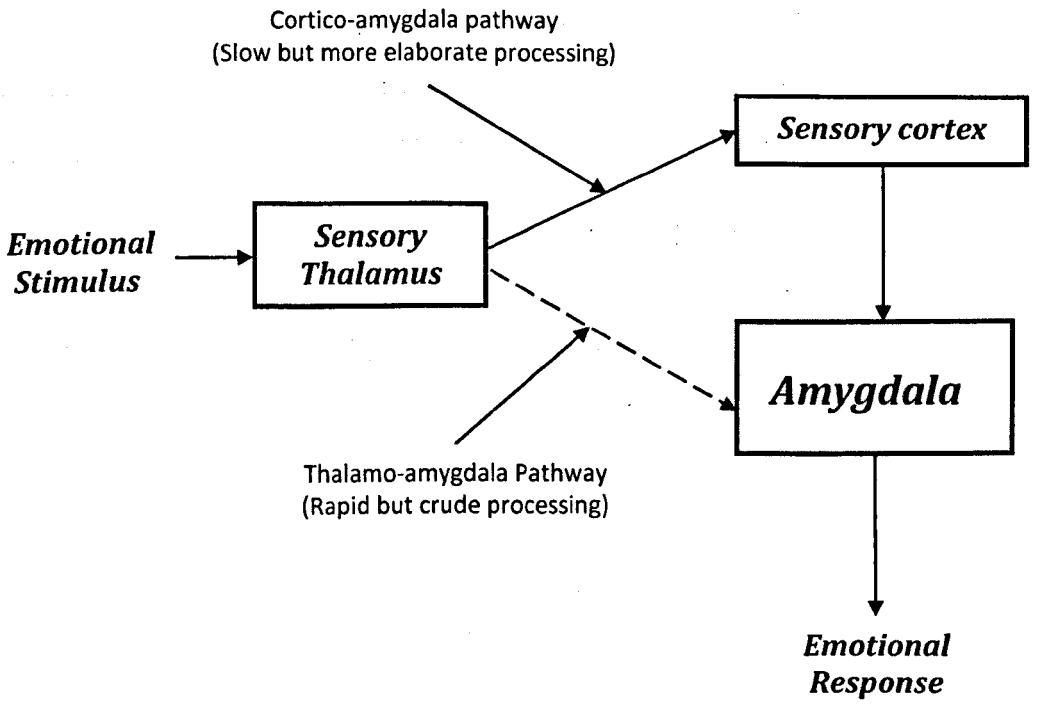

Figure 2.1: LeDoux's parallel neural pathways in auditory fear conditioning

A number of implications were illustrated by LeDoux (1996) from his dual pathways of fear. He concluded that the more direct thalamo-amygdala path the so-called low road, is quicker, more rudimentary, and occurs without thinking, reasoning, and consciousness. In addition, the thalamo-cortical-amygdala path which so-called the high road, is slower but involves more elaborative processing of the fear stimulus because of wide participation of higher cortical regions of the brain. Although LeDoux (1996) discusses the clear progressive benefit of an automatic, preconscious neural basis to information processing of fear stimuli, his research verified that the cortical pathway is essential for fear conditioning to more complex stimuli such as when the

animal must distinguish between two alike tones in which just one is paired with the unconditioned stimulus (UCS) (Clark & Beck, 2011).

The vital function of the amygdala in fear is compatible with its neuro-anatomical relations. The amygdala has various output projections via the central nucleus to the hypothalamus, hippocampus, and upward to different parts of the cortex, and also downward to different brainstem compositions involved in autonomic arousal and neuro-endocrine responses related to stress and anxiety like the Periaqueductal Gray region (PAG), the ventral tegmental area, the locus ceruleus, and the raphe nuclei (Barlow, 2002). All of these neutral structures have been concerned in the experience of anxiety, including the bed nucleus of the stria terminalis, which may be the most important neural substrate of anxiety (Davis, 1998; & Grillon, 2002).

There have been long debates around the function of conscious cognitive processing in fear related to what LeDoux's research suggested: a rapid and rudimentary non-cortical thalamo-amygdala pathway in the processing of conditioned fear. LeDoux (1996) found that fear relevant stimuli can be implicitly processed by the amygdala through the subcortical thalamo-amygdala pathway without conscious representation (Clark & Beck, 2011).

LeDoux (1996) also found that the thalamo-cortico-amygdala pathway was activated in more complex fear conditioning. Furthermore, the amygdala has wide relations with the hippocampus and cortical regions, where it receives inputs from cortical sensory processing areas, the transitional cortical area, and the medial prefrontal cortex (LeDoux, 1996, 2000). LeDoux emphasizes that the hippocampal system involving explicit memory and the amygdala system involving emotional memory will be triggered concurrently by the same stimuli and will operate at the same time. Therefore cortical brain structures involved in working memory, such as the prefrontal cortex and the anterior cingulated and orbital cortical regions, and structures involved in long-term declarative memory, like the hippocampus and temporal lobe, are implicated with amygdala-dependent emotional arousal to provide the neural basis to the subjective (conscious) experience of fear (LeDoux, 2000).

The neural substrates of cognition, then, can be anticipated to play a significant role in the type of fear acquisition and persistence that characterizes complex human fears and anxiety disorders (Clark & Beck, 2011).

Luu et al. (1998) argued in their review that fear-related psychological demonstrations of the cortex has an effect on the emotional functioning not just at the later phase of fear expression and responsiveness, but cortical influence can also provide a preventive task even before sensory information is physically existing. This feeling was recently explored in a review paper by McNally (2007) in which he concluded that activation in the medial prefrontal cortex can repress conditioned fear acquisition that is arbitrated by the amygdala. As a result, prefrontal executive functions, such as conscious cognitive processes, can have fear-inhibiting consequences that engage learning new inhibitory associations that repress fear expression (McNally, 2007).

Reviewing eleven neuro-imaging studies of psychological interventions for anxiety and depression Frewen et al. (2008) reported that Cognitive Behavioural Therapy (CBT) alters functioning in brain regions such as the dorsolateral, ventrolateral, and medial prefrontal cortices; anterior cingulate; posterior cingulate/ precuneus; and the insular cortices that are associated with problem solving, self-referential and relational processing, and regulation of negative effect.

Obviously, after that, the broad participation of advanced order cortical regions of the brain in emotional experiences is reliable with the argument that cognition plays an important role in the production of anxiety and that interventions like cognitive therapy can successfully reduce anxiety by engaging cortical regions responsible for higher order reasoning and executive function (Clark & Beck, 2011).

2.2.8.5: Brain neurotransmitters

Brain neurotransmitters are responsible for regulation of brain activities such as feelings, emotions, and thoughts. A deficit or abnormality in the balances of the neurotransmitters in the brain can lead to a problem with brain messages sent out. Three major neurotransmitters are involved in the biology of anxiety: serotonergic,

noradrenergic and gamma-aminobutyric acid (GABA) as well as the corticotropin-releasing hormonal pathway (Noyes & Hoehn-Saric, 1998; & Vermetten et al., 2006). Serotonin is responsible in the regulation of mood, impulses, aggression, appetite, sleep, body temperature and pain; noradrenergic (norepinephrine) plays role in the fight or flight response and in the regulation of mood, sleep and blood pressure; and gamma-aminobutyric acid (GABA) plays a role in helping to induce relaxation and sleep, and in preventing over excitation. (Vermetten et al., 2006).

The serotonergic neurotransmitters have become of increasingly important in researches on anxiety and panic. Serotonin acts as a neurochemical break on behaviour, with blockage of serotonin receptors in humans associated with anxiety (Noyes & Hoehn-Saric, 1998). Even though low levels of serotonin have been implicated as a key contributor to anxiety, direct neurophysiological proof for defects in serotonin for anxiety disorders like generalized anxiety disorder (GAD) compared to controls is variable (Sinha et al, 2004). The serotonergic system projects to different regions of the brain that adjust anxiety like the amygdala, septo-hippocampal, and prefrontal cortical regions and so may have a direct effect on anxiety or an indirect effect by changing the function of other neurotransmitters (Noyes & Hoehn-Saric, 1998; & Sinha et al., 2004).

Gardner et al. (1993) argued that one of the subgroups of the inhibitory transmitter GABA contains benzodiazepine receptors that enhance the inhibitory effects of GABA when benzodiazepine molecules bind to these receptor sites. Barlow, (2002) argued that generalized anxiety disorder may be due to a suppressed benzodiazepine-GABA system. The anxiolytic effects of benzodiazepine drugs, such as lorazepam, alprazolam, appear to have their clinical effects by enhancing benzodiazepine-GABA inhibition.

Corticotropin-releasing hormone (CRH) is a neurotransmitter that is primarily accumulated in the hypothalamic para-ventricular nuclei (PVN). Stressful or threatening stimuli can stimulate certain brain regions like the locus ceruleus, amygdala, hippocampus, and prefrontal cortex, which then releases CRH. CRH then stimulates secretion of adrenocorticotropic hormone (ACTH) from the anterior

pituitary gland and other pituitary-adrenal activity that results in increased making and release of cortisol (Barlow, 2002; Noyes & Hoehn-Saric, 1998). The CRH, then, not only arbitrates endocrine responses to stress but also other broad brain and behavioural responses that play a role in the expression of stress, anxiety, and depression (Barlow, 2002). Overall, then, abnormalities at the neurotransmitter level appear to have anxiogenic or anxiolytic effects that play an important contributing role in heightened physiological states that characterize fear and anxiety. Nevertheless, the precise nature of these abnormalities is still unknown (Clark & Beck, 2011). Table 2.1 provides a summary of the biological aspects of anxiety that might underlie the cognitive features of these disorders.

Table 2.1: Biological Concomitant of Cognition in Anxiety

	Biological factors		Cognitive sequelae
1	Elevated tonic autonomic activation	1	Increased salience of threat-related stimuli
2	Slower habituation rate	2	Sustained attention to threat
3	Diminished autonomic flexibility	3	Reduced ability to shift attention
4	Genetic predisposition for negative emotionality	4	Hyper-valent schemas of threat and danger
5	Sub-cortical fear potentiating	5	Preconscious fear stimulus identification and immediate physiological arousal
6	Extensive cortical afferent pathways to sub-cortical emotion relevant circuitry	6	Cognitive appraisal and memory influence fear perception and modulates fear expression and action

2.2.9: Cognitive aspects of anxiety

Clark and Beck (2011) argued that the cognitive viewpoint can assist people recognize some clear disagreement in anxiety disorders. They wondered how it is possible for an individual to be so anxious over an illogical and unlikely threat, and respond with easiness and no obvious anxiety in the face of more rational dangers. What is it that accounts for the extremely discriminating and precise nature of anxiety, and why is the anxiety so persistent in spite of repeated non-occurrences of the expected danger?

Figure 2.2: Cognitive mode of Anxiety of Clark and Beck, 2011

2.2.9.1: Anxiety: A State of Intensified Susceptibility

The cognitive view of anxiety depends on the concept of vulnerability (Clark & Beck, 2011). Vulnerability is defined as a person's perception of himself as subject to internal or external dangers over which his control is lacking or is insufficient to afford him a sense of safety (Beck, Emery, and Greenberg, 1985).

In anxiety the heightened sense of vulnerability is obvious in an individual's exaggerated appraisals of potential personal harm in reacting to signs that are neutral or harmless. In addition, this primary appraisal of threat involves a wrong view in

which the possibility that harm will happen and the apparent severity of the harm are significantly overrated (Clark & Beck, 2011). Rachman (2004) noted that terrified persons are much more likely to overestimate the intensity of threat, which then leads to avoidance behaviour. Anxious persons fail to distinguish the safety features of threat-evaluated circumstances and tend to underestimate their aptitude to cope with the predictable harm or danger (Beck et al., 1985, 2005). This secondary elaborative reappraisal happens at once as a result of the primary threat appraisal, and in an anxiety states it intensifies the early perception of threat. Thus the intensity of an anxiety state depends on the balance between one's initial appraisal of threat and the secondary appraisal of coping ability and safety.

Behaviour to deal with the danger might involve a fight-or-flight response, but it could also consist of other instrumental behaviours like taking a defensive attitude, calling for assistance, or negotiation to lessen the threat (Beck et al., 2005). Autonomic arousal and other physiological reactions that happen during threat vulnerability are important aspects of this early reflexive defence system. The presence of anxiety activates behavioural recruitment to deal with perceived threat.

Although this primal behavioural recruitment evolves as a rapid and efficient response to physical threat, it can weaken a necessary response when triggered in mild circumstances or the difficult, diffusely stressful circumstances of contemporary society. In addition, recruitment of the primal defence system can also have adverse effects when it is misunderstood as signalling a severe disorder, such as when a person with panic disorder misinterprets a high heart rate as a possible myocardial infarction (Beck et al., 1985).

A second type of behavioural response often seen in anxiety states as a result of a perception of threat is immobility in situations where active coping might increase the real or imagined danger. In addition, signs of this immobility response may be evident as freezing or feeling faint. It is linked with the cognitive perspective of being completely powerless. The immobility response is clear in social anxiety, such as when a highly anxious person feels faint when attempting to deliver a public speech (Beck et al., 1985).

2.2.9.2: Overstated threat evaluations

The course of evaluating or appraising external or internal cue as possible danger, harm, or a threat to personal essential resources or safety involves an automatic, rapid, and highly efficient behavioural, physiological, cognitive, and affective defensive system that developed to defend and guarantee the survival of the living being (Clark & Beck, 2011). It has been well-documented that there was a clear developmental importance of a cognitive system prepared to swiftly and selectively inspect the environment for anything that might cause a physical hazard to the ancient families (Beck, 1985; Clark & Beck, 1988; Craske, 2003; & Ohman & Mineka, 2001). Threat is quickly evaluated in terms of its sequential and physical closeness or intensifying character, possibility of happening, and severity of result. And together these evaluated features of the stimulus will result in the preliminary mission of a threat value. In addition, this preliminary mission of threat value is inherent in all experiences of anxiety (Clark & Beck, 2011). In the cognitive model this preliminary, relatively automatic threat evaluation is due to activation of the primal threat mode (Figure 2.2). The appraisal of threat will involve various cognitive processes and structures including attention, reasoning, memory, conscious thought, and judgment (Clark & Beck, 2011).

2.2.9.3: Intensified Weakness

During the secondary evaluation of personal resources and coping capability a more conscious, strategic evaluation of individual's capability are involved to react constructively to supposed threat. This evaluation (appraisal) happens at the secondary elaborative phase of the cognitive model (Figure 2.1) (Clark & Beck, 2011). Positive self-efficacy and result expectation could lead to a decrease in anxiety, particularly if the individual's preliminary efforts to deal with the threat appear successful. On the other hand, low apparent self-efficacy and a negative result expectation would lead to a heightened state of helplessness and greater feelings of anxiety (Clark & Beck, 2011).

Even though secondary appraisal (evaluation) of coping resources is activated by the primary threat appraisal, both will occur almost concurrently as a highly mutual and interactive cognitive evaluation (Beck et al., 1985, 2005).

2.2.9.4: Inhibitory Processing of Protection

It is argued that anxiety is not just induced by a selective enhanced processing of danger but also a selective repression of information that is unrelated to supposed danger (Beck, 1985). Clark and Beck (1988) included underrated rescue dynamics as a cognitive fault that will contribute to an exaggerated appraisal of threat in anxiety. As a result any corrective information, which could lead to a decrease in the threat rating of the situation, is lost and the anxiety perseveres. An example of inhibited processing of safety cues is that the individual may search for unsuitable means to secure safety or avoid harm. Therefore, the individual with agoraphobia may only venture outside with certain family members because this appears to decrease the chance of a panic attack, or the individual with contamination obsessions may increase certain compulsive rituals to lessen anxiety and secure a sense of safety from the scene of contamination (Clark & Beck, 2011).

2.2.9.5: Reduced Positive or Insightful Thinking

At the time of experiencing an anxiety state constructive modes of thinking are not easily reached. The more constructive, reflective approach to threat is under conscious control and so takes more time and effort to utilise because it involves not only a more complete appraisal of the threat and security characters of a state, but it also necessitate selection of instrumental behaviours for dealing with the anxiety (Clark & Beck, 2011; Beck et al. 1985 & 2005). It is concluded by beck et al. (2005) that this constructive mode of thinking may be an option for anxiety-reduction system to the anxiety-potentiating, automatic primal threat process. Beck (1996) indicated that once an automatic mode of thinking is triggered, it is inclined to dominant information processing until the activating circumstance disappears.

The failure in reaching a more constructive thinking process contributes to the perseverance of anxiety. So it is argued that a key factor in the experience of panic is

the failure to reach a realistic appraisal for the situation (e.g. to apply tests, draw on past experiences, and generate alternative explanations); or a specific physical sensation (e.g. chest pain) in any way other than from a disastrous viewpoint (Beck, 1987).

2.2.9.6: Involuntary and Intentional Processing

Clark and Beck (2011) argued that automatic processing is much clearer in the early primary appraisal of danger involving activation of the primal threat mode while controlled strategic processing is much stronger in the secondary elaborative stage of threat reappraisal, coping resources, and safety seeking. As earlier reported, there is significant experimental verification from conditioning experiments that acquired fear responses can be reduced via social transmission of information. Furthermore, information on the expectedness and management of future threat, danger, or other negative events largely determines the presence or absence of anxious apprehension (Barlow, 2002). In addition, personal and medical experience supports the statement that conscious controlled cognition can have a considerable anxiety-reducing effect.

2.2.9.7: Self-maintaining Process

One anxiety episode may persist from a few minutes to many hours but some patients with general anxiety disorder (GAD) complain that they are never actually free of anxiety (Clark & Beck, 2011). Clark and Beck (2011) argued that the perseverance of anxiety must be seen as a cruel sequence or a self-perpetuating process and once the anxiety programme is triggered, it tends to be self-perpetuating through a number of processes. Firstly, self-focused awareness is improved during anxiety states so that persons become highly alert to their own anxiety-related thoughts and behaviours. This heightened attention to the symptoms of anxiety will strengthen individual's subjective fear. Secondly, the occurrence of anxiety can itself promote the occurrence of the feared threat, for example, when the speech-anxious person goes blank or begins to sweat copiously. Concentration on these symptoms could then interfere with the individual's capability to deliver the speech (Clark & Beck, 2011).

Finally the anxious individual understands the incidence of anxiety itself as greatly threatening growth and something that must be decreased as rapidly as potential in order to reduce avoid its disastrous effects. In this case the individual literally becomes anxious about being anxious Clark & Beck, 2011).

2.2.9.8: Cognitive Predominance

Beck et al. (2005) reported that the cognitive model states that the central dilemma in anxiety disorders is the launch of hypervalent threat schemas that present an excessively unsafe perspective on reality and the self as weak, helpless, and vulnerable. Clark and Beck (2011) cited that from a cognitive perspective, a preliminary quick and involuntary stimulus assessment of danger happens in the early stage of anxiety and within this framework cognition is recognized as primary in the acquisition and preservation of fear responses. Furthermore, because of the primacy or significance of cognition, it is proposed that some alteration in the cognitive conceptualization of threat is needed before any decrease in anxiety can be expected (Clark & Beck, 2011).

2.2.9.9: Cognitive Susceptibility to Anxiety

Clark and Beck (2011) argued that there are individual differences in vulnerability or risk for anxiety disorders and Individuals are at increased risk for anxiety because of certain genetic, neuro-physiological, and learning histories that are contributory factors in the anxiety disorders. Nevertheless, the cognitive model also states that particular lasting schemas involving rules and assumptions about danger and helplessness may influence an individual to anxiety.

2.2.10: Behavioural Theories

Clark and Beck (2011) argued that fear responses can be obtained throughout an associative learning course. Theoretical and experimental achievement from this perspective has focused on the physiological and behavioural responses that describe an anxious or fearful situation and early learning theory focused on the acquisition of fears or phobic reactions through classical conditioning.

2.2.10.1: Conditioning Theories

According to traditional conditioning, a neutral stimulus, when repetitively related to an aversive experience (unconditioned stimulus) leads to the experience of anxiety (unconditioned response), and becomes associated with the aversive experience; it acquires the ability to extract a similar anxiety response (conditioned response) Edelmann, 1992).

Classical conditioning theory emphasizes that the individual fears are acquired as a result of some neutral stimulus coming into association with some previous anxiety-provoking experience such as a greatly throbbing and terrorizing experience at the dentist during childhood.

Two-factor theory

This theory had derived from the classical conditioning theory and was related to the name of the famous psychologist Mowrer (1939, 1953, and 1960) who introduced a major revision to conditioning theory in order to better account for avoidance behaviour and the persistence of human fears. The two-factor theory became a widely accepted behavioural account of the etiology and persistence of clinical fears and anxiety states throughout the 1960s and early 1970s (Eysenck & Rachman, 1965). Although no longer considered an acceptable theory of anxiety, the two-factor theory is significant for two explanations. Firstly, many of the behavioural interventions that have been verified as successful in the treatment of anxiety disorders had their origins in the two-factor model. And secondly, the current cognitive models of anxiety were in large part born out of the criticisms and insufficiency of the two-factor theory (Clark & Beck, 2011).

Serious problems were raise, during the late 1970s, with the two-factor model clarification for human phobias;

1- Classical conditioning supposes that any neutral stimulus can acquire fear-eliciting properties if associated with an unconditioned stimulus. However, this hypothesis was not supported in aversive conditioning experiments, in which some stimuli produced a conditioned fear response much more simply than other stimuli;

2- Many persons who develop clinical phobias cannot remember a traumatic conditioning experience;

3- There is substantial experimental and clinical evidence for non-associative learning of fears through explicit observation or informational transmission;

4- Individuals often experience traumatic events without developing a conditioned fear response (Rachman, 1976, 1977). Again the two-factor model requires considerable refinement to explain why only a minority of individuals develop phobias in response to a traumatic experience (Clark & Beck, 2011);

5- Finally, the two-factor theory has difficulty explaining the prevalence of phobias (Rachman, 1977).

Although various refinements were proposed, it became clear that the two-factor theory of conditioning was unable to explain the development and persistence of human fears and anxiety disorders (Clark & Beck, 2011).

2.2.10.2: The Fear Module

It is stated that because fear develops as a defence against predators and other threats to survival, it involves a fear module composed of behavioural, psycho-physiological, and verbal-cognitive components (Ohman & Mineka, 2001). So Ohman and Mineka (2001) defined the fear module as a quite independent behavioural, psychological, and nervous system that is specially modified to help resolve adaptive problems met by potentially life-threatening circumstances in the ecology of the distant forefathers.

Ohman & Mineka (2001) discussed four characteristics of the fear module:

A- It is selectively to make aware to respond to stimuli that are evolutionarily proponent because they posed specific threats to the survival of the ancestors. They reviewed a large experimental literature that verified selective association in human aversive conditioning in which individuals evidence better conditioning and greater confrontation to extermination for phylogenetic stimuli than for ontogenetic materials Ohman and Mineka (2001) concluded that 1- evolutionarily prepared fear-relevant stimuli have special access to the human fear module and 2- selective association of these prepared stimuli is largely independent of conscious cognition.

B- The characteristic of the fear module is its automaticity. Ohman and Mineka (2001) stated that because the fear module grew to deal with phylogenetic threats to survival, it can be automatically triggered without conscious awareness of the activating stimulus. Evidence for automatic preconscious activation of fear includes physiological fear response to fear stimuli that are not consciously recognized, continued conditioned fear response to non-reportable stimuli, and the acquisition of a conditioned fear response to fear-relevant stimuli that were not responsive to conscious awareness.

C- The feature of encapsulation. Ohman and Mineka (2001) cited that the fear module is supposed to be quite impassable to other modules with which it has a limited direct influences and so will have a tendency to run its sequence once triggered with few opportunities that other processes can stop it (Ohman & Wiens, 2004). Even though the fear module is relatively impassable to conscious effects, Ohman and Mineka reported that the fear module itself can have a deep effect by biasing and misrepresenting conscious cognition of the threat stimulus. In support of their proposal for the individuality of the fear module from the effect of conscious cognition, Ohman and Weins (2004) reported suggestion that 1- covering the stimuli may affect conscious appraisals but not conditioned responses, 2- directions that change the obvious UCS-CS expectations do not affect conditioned response to biological fear-relevant stimuli, 3- persons can obtain conditioned fear responses to covered stimuli outside conscious awareness, and 4- conditioned fear responses to covered stimuli can affect conscious cognition in the form of expectation judgments.

D- The last characteristic is its precise neural circuitry. Ohman and Mineka (2001) consider the amygdala the central neural structure involved in the control of fear and fear learning and contend that fear activation occurs via LeDoux's (1996) sub-cortical, non-cognitive thalamo-amygdala pathway, whereas cognitive learning occurs via the hippocampus and higher cortical regions.

2.2.10.3: The case for cognition

There are wide differences between Ohman and Mineka's (2001) viewpoint on fear and anxiety and the viewpoint related to the cognitive perspective of Beck et al (1985 & 2005) and Beck and Clark (1997). Even though all of them admit that cognitive considerations should be targeted during the intervention because they play a key role in the long-term maintenance of anxiety and they still consider anxious thinking, beliefs, and processing biases a consequence of fear activation (Clark & Beck, 2011). The point of view of Ohman and Mineka (2001) does not consider conscious cognition serious in the pathogenesis of fear itself, this point of view is in opposition to the conceptions of fear that Clark and Beck (2011) have offered. The non-cognitive view of fear of Ohman and Mineka (2001) is apparent in other learning theorists such as Bouton, Mineka, and Barlow (2001) who reported that interoceptive conditioning in panic disorder happens without conscious awareness and is fairly autonomous of declarative knowledge systems. But, Clark and Beck (2011) consider cognitive appraisal a fundamental component of fear and vital to accepting the etiology, persistence, and intervention of anxiety disorders. Clark and Beck's view is grounded on numerous points:

2.2.10.3.A: Presence of Preconscious Cognition

Opponents of cognitive models lean towards to an exaggeration of conscious awareness when debating cognition, arguing that the considerable experimental evidence of conditioned fear responses without conscious awareness does not support basic views of the cognitive viewpoint as Ohman and Mineka (2001) reported. But, there are similarly strong experimental studies demonstrating preconscious, automatic cognitive and attention processing of fear stimuli (MacLeod, 1999; Wells &Matthews, 1994; & Williams et al., 1997). Therefore the cognitive perspective on anxiety is misrepresented when cognition is characterized only in terms of conscious appraisal (Clark & Beck, 2011).

2.2.10.3.B: Cognitive courses in fear acquisition (such as in conditioning)

It is argued that cognitive processes have significance of fear activation and so play slight role in their acquisition (Ohman & Mineka, 2001). Nevertheless, over the last three decades several learning theorists have argued that cognitive conceptions must be incorporated into conditioning models to describe the perseverance of fear responses (Clark & Beck, 2011). Davey (1997) suggested that outcome expectations as well as individual's cognitive representation of the DCS will affect the strength of the fear CR in response to a CS. In other words, CRs increase or decrease in strength depending on how the individual appraises the significance of the DCS or trauma. Then according to Davey (1997) cognitive appraisal is a key element in the Pavlovian theory of fear conditioning.

2.2.10.3.C: Can conscious cognitive processes modify fear responses?

Ohman and Mineka refuse to accept the idea that the fear module is impenetrable to conscious cognitive control (Ohman & Mineka, 2001, cited in Clark & Beck, 2011). Though, this opinion is hard to reconcile with empirical confirmation that cognitive or informational factors can lead to a decrease in fear. Brewin (1988) makes a case for the influence of cognition on fear responses, stating that `a theory that assigns a role to conscious thought processes is necessary to explain how people can alternately frighten and reassure themselves by thinking different thoughts, test out a variety of different coping responses, set goals and reward or punish themselves depending on the outcome` (Brewin, 1988. p. 46).

2.2.10.3.D: Is the Amygdala specific to fear

Clark and Beck (2011) reported that the main argument of Ohman and Mineka (2001) is that a direct thalamus-amygdala relationship in fear activation and emotional learning accounts for the automaticity of the fear module and so is distant from declarative acquisition of information via the hippocampus. Thus activation of the amygdala instigates a fear response which then leads to more complex cognition and memory processes via projections to the hippocampus and higher cortical brain regions.

Even though experimental studies have been fairly reliable in showing amygdaloid activation in the processing of fearful stimuli, there is evidence that the amygdala may also be involved in other emotional functions such as the appraisal of the social and emotional significance of facial emotions (Anderson & Phelps, 2000, cited in Clark & Beck, 2011). Neuroimaging researches propose more activation happens in the prefrontal cortex, amygdala, other midbrain structures, and the brainstem when processing any usually negative, arousing emotional stimuli, which proposes that the amygdale and other structures involved in emotional processing may not be specific to fear but rather to a variety of emotional stimuli (Clark & Beck, 2011).

Other neuroimaging studies propose that the amygdala can be influenced by cognitive processes mediated by higher cortical regions of the brain. McNally (2007) reviewed evidence that the medial prefrontal cortex can suppress conditioned fear acquired via activation of the amygdala. Hariri et al. (2003) found that perceptual processing of threatening pictorial scenes was related to a strong bilateral amygdale response that was attenuated by cognitive evaluation of the fear stimuli. So these findings propose that conscious cognitive processes mediated by other cortical and subcortical regions of the brain have an important influence on the amygdala and together supply an integrated neural account of the experience of fear (Clark & Beck, 2011).

2.2.10.3.E: The title role cortical regions in fear

The critical issue for a cognitive viewpoint on anxiety is whether conscious cognitive processes play a satisfactorily significant role in the spread and improvement of anxiety to secure an emphasis at the cognitive level. There is substantial neurophysiological evidence that higher cortical regions of the brain are involved in the nature of human fear and anxiety responses that are the target of medical treatment (Clark & Beck, 2011). It is reported that the hippocampus and related parts of the cortex involved in the creation and recovery of memories are associated with more complex appropriate fear conditioning. Furthermore, it is noted that the subjective feeling associated with fear will involve connections between the amygdala

and the prefrontal cortex, anterior cingulate, and orbital cortical regions, as well as the hippocampus (LeDoux, 1996, & 2000).

2.2.11: Types of anxiety disorder

These are according to DSM-V-TR, 2000

Generalized Anxiety Disorder (GAD), Panic Disorder, Agoraphobia, Posttraumatic stress disorder, Acute Stress Disorder, Obsessive-Compulsive Disorder (Obsessions and Compulsions), Specific Phobia, and Social phobia

2.2.11.1: Generalized Anxiety

Excessive anxiety about a number of events or activities occurs almost daily and for at least six months in duration. The person finds it difficult to control the worry. The anxiety and worry are associated with at least three of the following six symptoms (with at least some symptoms present for more days than not, for the past six months):

- Restlessness or feeling keyed up or on edge
- Being easily fatigued
- Difficulty concentrating or mind going blank
- Irritability
- Muscle tension
- Sleep disturbance

2.2.11.2: Panic disorder

Recurrent unexpected panic attacks, at least one of the attacks have been followed by one or more of the following:

- Persistent concern about having additional panic attacks
- Worry about the implications of the attack or its consequences
- A significant change in behaviour related to the attacks

2.2.11.3: Agoraphobia

Fear of being in places or situations from which escape might be difficult (or embarrassing) or in which help might not be available in the event of having unexpected panic-like symptoms

2.2.11.4: Posttraumatic stress

The person has been exposed to a traumatic event in which both of the following were present:

- The person experienced, witnessed, or was confronted with an event that involved actual or threatened death or serious injury or a threat to the physical integrity of others.
- The person's response involved intense fear, helplessness, or horror.

The traumatic event is persistently re-experienced in at least one of the following ways:

- Recurrent and intrusive distress recollections of the event, including images, thoughts, or perceptions.
- Recurrent distress dreams of the event.
- Acting or feeling as if the traumatic events was recurring, including a sense of reliving the experience, illusions, hallucinations, and flashback episodes.
- Intense psychological distress at exposure to cues that symbolise an aspect of the traumatic event.
- Physiological reactivity on exposure to cues that symbolise or resemble an aspect of the traumatic event.

2.2.11.5: Acute Stress Disorder

The person has been exposed to a traumatic event in which both of the following were present:

- The person experienced, witnessed, or was confronted with events that involved actual or threatened death or serious injury.
- The person's response involved intense fear, helplessness, or horror.

Either while experiencing or after experiencing the distressing event, the person has at least three of the following:

- A subjective sense of numbing, detachment, or absence of emotional responsiveness
- A reduction in awareness of his or her surroundings
- Derealisation
- Depersonalisation
- Dissociative amnesia

2.2.11.6: Obsessive-Compulsive Disorder

2.2.11.6.A: Obsessions

- Recurrent and persistent thoughts, impulses, or images that are experienced as intrusive and inappropriate, causing anxiety or distress.
- The thoughts, impulses, or images are not simply excessive worries about real-life problems.
- The person attempts to ignore or suppress such thoughts, impulses, or images or to neutralize them with some other thoughts or action.
- The person recognizes that the obsession thoughts, impulses, or images are a product of his or her own mind.

2.2.11.6.B: Compulsions

- Repetitive behaviours or mental acts that the person feels driven to perform in response to an obsession or according to rules that must be applied rigidly.
- The behaviours or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation.
- These behaviours or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent, or they are clearly excessive.

2.2.11.6.C: Obsessive-Compulsive Disorder

- At some point during the course of the disorder, the person has recognized that the obsessions or compulsions are excessive or unreasonable.

- The obsessions or compulsions cause marked distress, take up more than 1 hour a day, or significantly interfere with the person's normal routine, occupation, or usual social activities.
- If another Axis I disorder, substance use, or general medical condition is present, the content of the obsessions or compulsions is not restricted to it. Persistent fear, that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation. Exposure provokes immediate anxiety, which can take the form of a situational predisposed panic attack. Patients recognize that the fear is excessive or unreasonable. Patients avoid the phobic situation or else endure it with intense anxiety or distress. The distress in the feared situation interferes significantly with the person's normal routine, occupational functioning, or social activities or relationships.

2.2.11.7: Specific Phobia

Social Phobia

Social phobia is classified as a fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others and feels he or she will act in an embarrassing manner.

Exposure to the feared social situation provokes anxiety, which can take the form of a panic attack. The person recognizes that the fear is excessive or unreasonable.

The feared social or performance situations are avoided or are endured with distress.

The avoidance, anxious anticipation, or distress in the feared situation interferes significantly with the person's normal routine, occupational functioning, or social activities or relationships.

The condition is not better accounted for by another mental disorder, substance use, or general medical condition. If a general medical condition or another mental disorder is present, the fear is unrelated to it. The phobia may be considered generalized if fears include most social situations.

2.3: Depression (Major depressive disorder)

Major depressive disorder is a mental disorder characterized by low mood or depressed mood accompanied by lowered self-esteem, and also by loss of pleasure or interest in usually pleasant activities with an inability to concentrate, insomnia, loss of appetite, anhedonia, feelings of extreme sadness, guilt, helplessness and hopelessness, and thoughts of death (A.P.A, 1980; & Tomb, 1995).

The expression of Major Depressive Disorder was selected by the American Psychiatric Association to refer to Mood Disorder in 1980 (American Psychiatry Association, 1980). Major depressive disorder is known also as; major depression; clinical depression; recurrent depressive disorder; and unipolar depression or unipolar disorder (A.P.A, 1980).

According to DSM-IV-TR the mood disorders can be classified in to the following subcategories: Major depressive disorder, Dysthymic disorder, Bipolar disorder, Cyclothymic disorder, Mood disorder due to a general medical condition, Substance-induced mood disorder, and Seasonal affective disorder.

2.3.1: Diagnostic criteria of Major depression according to DSM-V-TR, 2000

- One or both of the following two criteria required elements need to be present:

1. Depressed mood, or
2. Loss of pleasure or interest.

- It is sufficient to have either of these symptoms in conjunction with four of a list of other symptoms, these include:

a. Feelings of devastating sadness or fear, or seeming inability to experience emotion.
b. Clear decrease of interest in pleasurable activities.
c. Altering appetite and clear weight loss or weight gain.
d. Disturbed sleep patterns, either insomnia or oversleeping.
e. Changes in activity levels, restlessness or moving significantly slower than normal.

f. Fatigue, both physical and mental.
g. Feelings of guilt, anxiety, helplessness, and/or fear.
h. Low self-esteem.
i. Decrease in ability to make decisions or concentrate.
j. Suicidal thoughts or thinking about death

2.3.2: Diagnostic criteria for depression ICD-10 uses an agreed list of ten depressive symptoms (NICE, 2004):

1- persistent sadness or low mood; and/or
2- loss of interests or pleasure
3- fatigue or low energy

* At least one of these, most days, most of the time for at least two weeks

+ If any of above present, ask about associated symptoms:

1. Disturbed sleep
2. Poor concentration or indecisiveness
3. Low self-confidence
4. Poor or increased appetite
5. Suicidal thoughts or acts
6. Agitation or slowing of movements
7. Guilt or self-blame

* The 10 symptoms then define the degree of depression and management is based on the particular degree:

1. Not depressed (fewer than four symptoms)
2. Mild depression (four symptoms)
3. Moderate depression (five to six symptoms)
4. Severe depression (seven or more symptoms, with or without psychotic symptoms)

* Symptoms should be present for a month or more and every symptom should be present for most of every day

During depressive occurrences of all three ranges (mild, moderate, and severe), the person typically suffers from depressed mood, loss of interest and pleasure, and

decreased energy leading to increased persistent fatigue and reduced activities. Noticeable fatigue after only minor effort is common. Other common symptoms are :

a. Reduced concentration and attention;
b. Decreased self-esteem and self-confidence;
c. Ideas of guilt and unworthiness (even in a mild type of occurrences); depressing and pessimistic views of the future;
d. Ideas or acts of self-harm or suicide; disturbed sleep;
e. Reduced appetite.

The depressed mood differs little from day to day, and is often insensitive to surroundings, yet may show differences as the day progresses. As with manic incidences, the clinical demonstration shows noticeable individual differences, and uncharacteristic demonstrations are common in adolescents. In some cases, anxiety, distress, and motor distress may be more noticeable at times than the depression, and the mood alteration may also be covered by added features such as irritability, excessive consumption of alcohol, exaggerated behaviour, and exacerbation of pre-existing phobic or obsession symptoms, or by hypochondriac obsessions. For depressive incidences of all three levels of severity, a duration of at least two weeks is typically required for diagnosis, but shorter periods may be possible if symptoms are unusually severe and of quick onset.

Some of the symptoms mentioned above may be obvious and develop individual features that are widely observed as having special clinical importance. The most typical examples of these somatic symptoms are: loss of interest or pleasure in activities that are usually pleasurable; lack of emotional responsiveness to usually pleasurable environments and events; waking in the morning two hours or more before the usual time; depression being worse in the morning; objective indication of certain psychomotor retardation or agitation; noticeable loss of appetite; weight loss; marked loss of sex drive. Typically, this somatic syndrome is not considered as present unless about four of these symptoms are absolutely present.

These levels of severity are identified to cover a wide range of clinical states that are experienced in different types of psychiatric practice. Persons with mild depressive

incidences are common in primary care and general medical settings, while psychiatric inpatient units deal mainly with patients suffering from severe levels.

Differences between mild, moderate, and severe depressive incidences, rest upon a difficult clinical decision that involves the number, type, and severity of symptoms present. The degree of normal social and work accomplishments is regularly a suitable overall guide to the likely level of severity of the incidence, but individual, social, and cultural effects that disturb a smooth relationship between severity of symptoms and social performance are common and make it unwise to contain social performance among the necessary criteria of severity.

2.3.3: Differences in diagnostic criteria of depression between ICD-10 and DSM-IV-TR

The most commonly used criteria for diagnosing depressive disorders are established in the World Health Organization's International Statistical Classification of Diseases and Related Health Problems (ICD-10) which uses the name recurrent depressive disorder (ICD-10, 1994) and American Psychiatric Association's revised fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, 2000). The first system is typically used in European countries, while the latter is used in the United States of America and many other non-European nations (Sadock 2002). The authors of both systems have worked towards common diagnostic criteria (DSM-IV-TR, 2000).

Both ICD-10 and DSM-IV-TR outline typical depressive signs. ICD-10 defines three typical depressive signs which are depressed mood, anhedonia, and reduced energy, two of them should be existent to decide depressive disorder diagnosis (ICD-10, 1992). According DSM-IV-TR there are two typical depressive signs: depressed mood, anhedonia, at least one of them must be existing to decide diagnosis of major depressive incidence (DSM-IV-TR, 2000).

Major depressive disorder is categorized as a mood disorder in DSM-IV-TR (DSM-IV-TR, 2000, p.345). The diagnosis centres on the existence of single or recurrent major depressive incidences (DSM-IV-TR, 2000, p. 349). Additional qualifiers are used to categorize both the incidence itself and the course of the disorder. The classification

Depressive Disorder is diagnosed if the persons' symptoms do not meet the criteria for a major depressive incidence. The ICD-10 system does not use the term major depressive disorder, but lists very similar criteria for the diagnosis of a depressive episode as mild, moderate or severe; the term recurrent may be added if there have been several incidences without mania (ICD-10, 1992).

2.3.4: Theories of depression

The bio-psychosocial causes suggest that biological, psychological, and social elements all have a key role in affecting depression (DHHS, 1999). The stress-diathetic model identifies that depression appears when a pre-existing susceptibility (or diathesis) is triggered by stressful life happenings. The pre-existing susceptibility can be either; genetic (Caspi et al., 2003; & Haeffel et al., 2008), suggesting an interaction between environment and nurture; or schematic, resulting from opinions of the world learned in childhood (Slavich, 2004).

Empirical research has supported the models of interaction. In New Zealand researchers adopted prospective approaches to explore how depression developed over time amongst a cohort initially without depression. They concluded that differences among the serotonin transporter (5-HTT) gene influenced the likelihood that people who have experienced stressful life events will continue to experience depression. Depression may follow for anyone on such occasions, but appears to be more likely to develop in individuals with one or two short alleles of the 5-HTT gene (Caspi et al., 2003). Moreover, researchers in Sweden determined that depression can be inherited and the amount to which personal variances in incidence are related to genetic differences can be approximated to be about 30% for men and 40% for women (Kendler et al., 2006). Psychologists, who believe in biological theories, have suggested that the genetic source for depression have been present since selected adaptations in our species development. A substance-induced mood disorder similar to major depression has been linked to long-standing drug abuse, or to withdrawal from certain sedatives and hypnotics (Schuckit et al., 1997; & Ashton, 2002).

2.3.4.1: Biological theories of depression: Monoamines theory

In the brain about thirty neurotransmitters are recognized, and research has revealed that there are relations between clinical depression and the effects of three main neurotransmitters: nor-epinephrine, serotonin, and dopamine. Antidepressant medicines influence the general balance of these three neurotransmitters within components of the brain that adjust emotion, appetite, reactions to stress, bodily motives of sleep, and sexual potency (Nutt, 2008).

In general, antidepressants enhance the levels of some of the monoamines, which are small component parts of the in the synaptic cleft between neurons in the brain. Various medications directly influence the monoamine receptors. Serotonin is believed to normalize other neurotransmitters; diminished serotonin action may permit these systems to act in abnormal and unreliable ways (Barlow, 2005, p 226). As mentioned previously, depression occurs when low levels of serotonin support low levels of nor-epinephrine (Shah et al., 1999). A number of antidepressant medications directly increase the levels of nor-epinephrine, while others increase the levels of dopamine. These interpretations supported the monoamine theory of depression. Regarding its current structure, the monoamine theory hypothesizes that any shortage of certain neurotransmitters is responsible for the corresponding characteristics of depression: nor-epinephrine may be linked to attentiveness and energy in addition to anxiety, attention, and interest in life; deficiency of serotonin may lead to anxiety, obsessions, and compulsions; and lack dopamine may develop attention, motivation, pleasure, and reward, in addition to interest in life (Nutt, 2008).

Moreover, the observations that drugs which enhance the quantity of accessible monoamines are effective antidepressants and new progress in psychiatric genetics show that phenotypical difference in central monoamine function may be connected to susceptibility to depression. Despite these conclusions, the cause of depression is not merely monoamine shortage (Krishnan & Nestler, 2008). Within the last two decades, research has shown several limits of the monoamine theory (Hirschfeld, 2000). One argument is that the mood-enhancing influence of MAO inhibitors and SSRIs require weeks of treatment to develop, but the boost in accessible monoamines

happens within hours. Another argument is based on research with pharmacological agents that cause reduction of monoamines. While induced reduction in the concentration of monoamines may lower the mood of untreated depressed individuals, it does not influence the mood of non-depressed individuals (Krishnan & Nestler, 2008).

A gene-environment interaction was theorized, in 2003, to describe why life stress is a predictor for depressive incidents in some individuals, but not in others, depending on an allelic difference of the "serotonin-transporter-linked promoter region" (5-HTTLPR) (Caspi et al. 2003). However, two meta-analysis studies in 2009 suggested that stressful life events were associated with depression, but found no evidence for an association with the 5-HTTLPR genotype (Risch et al., 2009; & Munafò et al., 2009). A 2010-review indicated a systematic association between the method used to evaluate environmental difficulty and the results of the studies, and that both 2009 meta-analyses were considerably biased toward negative studies, which used self-reported measures of difficulty (Uher & McGuffin, 2010).

2.3.4.2: Psychological theories of depression

A variety of personality features and personality development seems to be vital to the incidence and persistence of depression (Raphael, 2000), with negative expressing of emotions as a general pre-indicator (Morris et al., 2009). Although depressive incidents are strongly linked with stressful and unfavourable events, an individual's distinguishing style of coping may be related with his/her resilience (Barlow & Durand, 2008; & Sadock, 2002). Additionally, low self-esteem and self-defeating or disturbed thinking are also related to depression.

Furthermore, depression is less likely to happen, as well as being quicker to reduce, among those who are religious (Dein, 2006; &McCullough et al., 1999). Warman and Beck (2003) concluded that it is not always obvious which factors are the real causes and which factors are the effects of depression; but, depressed individuals who are able to react upon and defy their thinking patterns often demonstrate enhanced mood and self-esteem.

In the early 1960s Beck developed what is now identified as a cognitive model of depression; he suggested that three concepts trigger depression: (1) a triad of negative thoughts composed of cognitive errors about oneself, one's world, and one's future; (2) persistent models of depressive thinking, or schemas; and (3) distorted information processing (Beck, 1987). From this model, Beck develops the structured procedures of cognitive behavioural therapy (CBT). Seligman (1975) concluded that depression in human beings is alike to learned powerlessness in laboratory animals, who stay in un pleasant conditions when they are able to flee, but do not do so because they have previously learned they had no control.

English psychiatrist Bowlby who developed the attachment theory in the 1960s, supposed that there is a association between depressive disorder in adulthood and the quality of the prior relationship between the infant and the parents or adult caregiver. In particular, the experiences of early loss, separation or rejection by the parent or caregiver may create an insecure internal cognitive image of the self as unlovable and of attachment facts as unloving and unreliable. This conforms to parts of Beck's cognitive triad (Barlow & Durand, 2008; & Ma, 2006).

Depressed persons often blame themselves for negative actions (Barlow, 2005). Pinto and Francis (1993), in their study of hospitalized adolescents with self-reported depression, concluded that those who blame themselves for negative incidences may also not take praise for positive results. This trend is a feature of a depressive attributional, or pessimistic explanatory style (Barlow, 2005).

Furthermore, depressed persons have negative ideas about themselves, based on experiences of failure, viewing the failure of social models, a lack of social influence that they can achieve, and their own bodily and emotional conditions including tension and stress. These effects may cause a negative self-concept and a lack of self-efficacy, that is, they do not think they can influence events or accomplish personal ambitions (Bandura, 1998).

Brown and Harris (2001) assessed depression in women and showed that susceptibility factors, for example: lack of a assured social relationship, early maternal loss,

responsibility for the care of a number of young children at home, and being without a job, all act together with life stressors to enhance the risk of being depressed.
In older adults, Hinrichsen and Emery (2006) concluded that the risk factors may be due to recurrent health troubles, alteration in relationships with a spouse or adult children as a result to the changeover to a care-giving role, the loss or death of an important other, or a change in the accessibility or feature of social relationships with older friends because of their own health-related life modifications.

According to the psychoanalytic school of psychology perception, melancholia or depression may be associated with interpersonal loss (Carhart-harris et al., 2008; & Freud, 1984) and early life experiences (Radden, 2003). Psychotherapists connect depression to the lack of interpersonal relationships, the child's early life experiences (Frankl, 2000) and an image of future times (Geppert, 2006; & May, 1994).
Finally, Maslow (1971) concluded that depression could occur when people are not capable of achieve their requirements or fail to recognize their full ability (Boeree, 1998; & Maslow, 1971).

2.3.4.3: Social theories of depression

Raphael (2000) concluded that being poor and socially isolated are connected with an increased risk of general mental health troubles. Physical and/or emotional abuse is also linked with increased risk of developing psychiatric disorders such as depression later on in life (Heim et al., 2008).
Raphael (2000) added that the instability in family performance, for example, parental depression, severe marital problems, conflict, divorce or separation, death of a parent, and/ or other problems in parenting are slikely to be further risk factors for depressive disorders.
During adulthood, Kessler (1997) indicated that the stressful life events are greatly linked with the onset of major depressive occurrences. Life actions related to social refusal seem to be mainly related to depression (Kendler, 2003; & Slavich et al., 2009).
In addition, Monroe et al. (2007) and Sadock (2002) concluded that a first occurrence of depression is more likely to be preceded by stressful life events than are persistent.

This is consistent with the assumption that people may become progressively more sensitive to life stress over succeeding recurrences of depression.

Vilhjalmsson (1993) reported that the association between life-related stressors and social support has lead to a long discussion; the deficiency of social support may raise the probability that life-related stressors will develop depression, or the lack of social support may comprise a type of tension and strain that help directly in developing depression. There is confirmation that neighbourhood social problems and disturbances such as crime or illegal drug use, is a risk factor for developing depression and that a high neighbourhood socioeconomic position, with better facilities, is a protective factor against developing depression (Kim, 2008).

Additionally, difficult circumstances in the workplace, chiefly demanding jobs with little range for decision-making, are linked with depression, even though the large variety confounding factors makes it hard to verify that the relationship is fundamental (Bonde, 2008).

2.3.5: Sex Differences related to Depression prevalence

Women within different cultures and ethnicities are reported to be about twice as likely as men to develop depression (Nolen-Hoeksema, 1990; & Weissman et al., 1996). Depressive disorders are extremely common in women and they have lifetime prevalence for major depressive disorder of 21.3%, compared with just 12.7% in men (Kessler, 1993). Most explanations for the gender difference in depression have focused on individual variables, but two integrated models have been developed by investigators to address the gender difference; one took a transactional approach and the other took developmental approach (Nolen-Hoeksema, 2001). The transactional model is suitable because it is apparent that depression damages social and/or occupational performance, and therefore they could have an important impact on a person's surroundings. Developmental models are suitable because the gender difference varies considerably with age. Girls are not expected to have more depression than boys during childhood, but at around the age of thirteen, girls' rates of depression start to rise dramatically, while boys' rates of depression stay low, and

sometimes may decrease. During late adolescence, girls are twice as likely as boys to have depression, and this gender percentage stays about the same during adulthood (Nolen-Hoeksema, 2001). Nolen-Hoeksema (2001) suggested that the reason for this might be that women have less power and standing than men in most societies. They experience certain traumas, particularly sexual abuse, more often than men; and they also experience more chronic strains, such as lack of respect, harassment, poverty, and constrained choices. In addition, when women and men are under the same stressors, gender differences in biological responses to stressors, self-concepts, or coping styles might make women more susceptible to depression.

It is also argued that recurrent stressful situations and responsiveness to stress are to be expected to have mutual effects on each other. Stressful situations can make both biological and psychological systems sensitive to future stress, making it more likely that persons will respond with depression. Additionally,, responsiveness to stress impairs problem solving, and therefore, the increase or creation of new stressors may cause poor life choice, which might then contribute to more depression (Nolen-Hoeksema, 2001).

2.3.6: Prevalence of Depression

The approximated prevalence rates of major depression among the age group 16 to 65 year is 2.1% (males 1.7%, females 2.5%) in the UK, but if the less specific and broader category of 'mixed depression & anxiety' (ICD-10, 1992) was included, these figures increase considerably to 9.8% (males 7.1%, females 12.4%).

In mixed depression and anxiety, it can be seen that the gender ratio is more weighted to females (Meltzer et al, 1995a & 1995b). Prevalence rates are greatly influenced by gender, age and marital status. In the same survey, female prevalence was marked during the reproductive years, but after the age of 55 balance changes. Prevalence is highest among the separated; 5.6% female, and 11.1% male. Other high rates are observed among widowed males 7.0% and divorced females 4.6%. The lowest prevalence occurs among the married females 1.7% and males 1.4%. Lone parents

have higher rates than couples, and couples with children higher rates than those without (Meltzer et al, 1995a & 1995b).

Gender and ethnicity also can act together: prevalence rates for males from minority ethnic groups were not greatly different from those for white males, but female rates varied considerably, the highest rates being found amongst Asians and Orientals 5.1%, and the lowest rates for West Indians or Africans are 0.6% (Meltzer et al, 1995a). However, these approximations are based on quite small samples of people from minority ethnic groups.

Gender and a number of socio-economic factors also considerably influence prevalence rates: unemployed women have over twice the prevalence of depression of unemployed men; 5.6% for women and 2.7% for men, while the rates are low for both genders in full-time employment; 1.1% for women and 1.2% for men, with part-time women workers in between; 2.2% (Meltzer, 1995a & 1995b).

A 2007-2008 national survey of the Iraq population (the Iraq Mental Health Survey-IMHS) revealed, with the cooperation of the World Health organization (WHO), that the prevalence of major depressive disorder was the most common disorder (7.2%) and Twelve-month prevalence was 13.6%, with 42.1% of cases classified mild, 36.0% moderate, and 21.9% severe. The disorders most often classified serious were bipolar disorder (76.9%) and substance-related disorders (54.9%) (Al-Hasnawi et al., 2009).

Prevalence rates for the homeless who live in leased accommodation and hostels are very high, at 13.0% for ICD depression, and 27.0% for all forms of depression (Meltzer, 1995b). Another study, of the homeless indicated that 60% were depressed (Gill et al, 1996). Those who are depressed consume no more alcohol than the non-depressed, but their cigarette consumption is higher (Meltzer et al, 1995b).

Depression prevalence rates are also high for asylum seekers, with 33.3% of asylum seekers in Newham are diagnosed with depression (Gammell et al, 1993), considerably higher than the rate in the general population.

Annual period prevalence rates are higher with male rates ranging between 2.4% and 3.4% and females rates between 3.3% and 7.1% in Puerto Rico, Edmonton, Canada, and Christchurch, New Zealand (Jenkins et al, 2003). Even higher rates are obtained for

one-year prevalence using the International Composite Interview Schedule in the USA of 7.7% for males, and 12.9% for females (Kessler et al, 1994), but the most recent estimations of the prevalence of major depression in the USA were 16.6% for lifetime and 6.6% for the 12 months before the survey. Prevalence seems to be lower outside the United States and it varies considerably between countries (Wang et al., 2005). In general, the global rate of prevalence is still high, with one meta-analysis of 23 studies from countries across Asia, Europe, North and South America, and Australasia revealing pooled rates of 6.7% for lifetime prevalence and 4.1% for 12-month prevalence (Katon & Schulberg, 1992). The authors claim that depressive disorders are the fourth most important cause of disability worldwide.

It is apparent that broadly contradictory rates of prevalence between the clinics studied in these countries reflect real differences in prevalence in these clinics rather than differing concepts of depression between countries (Simon et al, 2002). In any event, the evidence overwhelmingly supports the view that the prevalence of depression, however it is defined, varies considerably according to gender and a wide range of social, ethnic and economic factors.

2.3.7: Prevalence rates of other Depressive Disorders

About 30% of adult Americans have reported the experience of dysphoria for a period of greater than 2 weeks at some point during their lifetime (Weissman et al., 1991). Major depressive experience is less common, with Epidemiological Catchment Area (ECA) data suggesting a lifetime prevalence of 6.3% and one-year prevalence rates of 3.7% (Weissman et al., 1991). Results of the National Comorbidity Survey (NCS) indicated a lifetime prevalence rate of 17.1% and an one-year prevalence rates of 10.3% (Kessler, et al., 1994; & Kaelber, et al., 1995). The American Psychiatric Association approximates the lifetime risk of Major Depressive Disorders (MDD) between 10% to 25% for women and 5% to 12% for men and the lifetime prevalence of dysthymia at about 6%, with females being twice as likely to develop both disorders (APA, 1994). A worrying finding is that the occurrence of depression and suicidal behaviour appears to be growing across generations (Cross-National Collaborative

Group, 1992). In primary care, data reporting clinical depression is largely unidentified in this situation, depression is among the most frequently experienced psychiatric problems, with as many as 10% to 29% of patients presenting with a depressive disorder (McQuaid, et al., 1999). Furthermore, depression also is the second most common mental disorder among patients admitted to American mental hospitals (Olfson & Mechanic, 1996).

Different functional impairment connected to different depressive disorders also is quite widespread; according to Stevens et al. (1995) these are exacerbation of medical diseases, and have harmful effects on body health; Beck, et al. (1979) reported maladaptive cognitive courses; Lewinsohn (1974) reported decline in the engagement of enjoyable or reward activities; and finally, Klerman et al. (1984) referred to problems with interpersonal relationships. Heiligenstein (1996) compared two groups of college students, non-depressed and depressed, and found that depressed college students ignore more classes, show poorer performance in the classes they do attend, and reported more difficulty in their social relationships. Furthermore, Rohde et al. (1990) reported that the experience of a major depressive episode greatly raises the possibility of future depressive episodes and is extremely comorbid with other mental disorders such as anxiety disorders (Mineka, et al., 1998) and alcohol addiction (Regier et al., 1990).

2.3.8: Risk Factors linked to depression

Gender appears to play a major role in developing of clinical depression as mentioned previously. There are other different risk factors which are reported to be related to the likelihood of depression. Kaelber et al. (1995) reported risk factors including Caucasian ethnicity, medical diseases, weak physical health, experiencing a divorce or separation, previous depressive occurrences, low socioeconomic status, adverse life events such as unemployment, loss of loved one, and family history of depression.

Burke et al. (1990) reported that depression can develop at any age and the average age of onset is 15 to 19 years in females and 25 to 29 years for males, but the average age of onset gradually declining over the past decades (Weissman, et al., 1991). In

addition, earlier onset is connected with persistent chronicity and poorer reaction to treatment (Akiskal & Cassano, 1997). The aged do not appear more vulnerable to depression (Roberts, et al., 1997). Although risk factors such as these should be considered, it is very important to know that they are based on robust information. Kaelber et al. (1995) concluded that it is uncertain to what degree particular risk factors are contributing. Hopko, et al. (2004) concluded that a wide range of evaluation strategies for depression may help the process of individualized assessment instead of generalizations in assessment. This would be based on the patients' unique clinical presentations and symptoms, severity of symptoms, and proximate factors or events linked with the inflections and continuation of symptoms.

2.3.9: Depression co-morbidity

Depression regularly occurs together with other mental disorders. The National Co-morbidity Survey (NCS, USA) between 1990 and 1992 reported many facts in this field. A bout 51% of those with major depression also has a lifetime of anxiety (Kesseler, et al., 1996). Hirschfeld (2001) reported that anxiety symptoms can have a key impact on the course of a depressive disease, with delayed recovery, increased risk of deterioration, greater disability and increased suicide attempts. Sapolsky (2004) argued, in the same way, that the relationship between depression, stress, and anxiety could be measured and verified biologically. There are increased rates of alcohol and drug abuse and dependence; and approximately 33.3% of persons diagnosed with Attention Deficit and Hyperactivity Disorder (ADHD) develop comorbid depression (Grant, 1995; & Hallowell & Ratey, 2005); and depression and PTSD often happen together (Devane et al., 2005; & Regier et al., 1998).

Pain can often develop comorbid depression, one or more pain symptoms is present in about 65% of depressed individuals, and anywhere from 5% to 85% of individuals with pain will be suffering from depression. This percentage depends on the different settings; for example, there is a lower prevalence in general practice, and higher in specialty clinics (Hopko et al., 2004). Shulman and Shapiro (2008) reported that depression is also linked to a 1.5-fold to 2-fold increased risk of cardiovascular disease,

independent of other known risk factors, and is itself linked directly or indirectly to risk factors such as obesity and smoking, in addition, People with major depression are less likely to follow medical instructions for treating cardiovascular diseases, which further may increase their risk. Also, cardiologists may not identify underlying depression that complicates a cardiovascular disease under their care (Schulman & Shapiro, 2008).

2.4: Stress and Coping

Although there is no unique definition accepted universally to define coping, there appears an agreement among psychologists, psychiatrics, and researchers that cognition forms most important component of the individual's adaptation to traumatic and extremely threatening events (Benner, Roskies & Lazarus, 1980; & Foa, Steketee, & Olasov Rothbaum, 1989). Before explaining the coping as process in details, it is important to have an idea about stress its definition, theories and historical prospects.

2.4.1: Stress

It is repeatedly supposed that stress is present when people tackle circumstances that surpass their ability to manage these circumstances (Lazarus, 1999; & Lazarus & Folkman 1984). At any time an individual is pushed to deal with some problems or obstacle or alarming threat, the experience is stressful and it is not uncommon to believe of stress as being a particular set of experiences, however it may be that stress is not more than the experience of coming across or expecting difficulty in individual's goal-related efforts (Carver & Connor-Smith, 2010).

Stress is an idiom which is frequently employed nowadays but has increasingly turned out to be hard to describe. Stress classically explains a negative idea that may have a shock on individual's psychological and physical welfare, however it is not clear what accurately describes stress and whether it is a cause or an effect.

The idiom of stress had none of its current implication earlier than the second decade of last century. Keil (2004) reported that this word is a form of the Middle English 'destresse' which is derived from the Latin stringere that means to draw tight. In addition, the term had infrequently been used, in the 1920s and 1930s, in psycho-biological circles to refer to unwelcome psychological strains that may cause disease (Cannon, 1926). Over the last six decades the term of stress was transited from physics to the behavioural sciences so the application of this term was changed. Selye in 1936 in his paper in 'Nature' defined stress as the reaction of the organism to some sort of outside threat (Selye, 1936). Selye returned, in 1976, to define stress as a bodily processes created by conditions that put physical or psychological strains on an individual (Selye, 1976) and these the external forces that impose on the body are described as stressors (McGrath, 1982).

To some extent, different views of stress were set by Hobfoll (1998) using an economic image explaining that individuals possess resources that they struggle to guard, protect, and preserve. These resources are of great values for those individuals. The resources can be; physical such as car or house; circumstances of life such as stable employment, relatives and friends; and personal qualities such as work skills or other assets such as money or knowledge (Hobfoll, 1998). So according to Hobfoll views, stress happen when some of these resources are endangered or missing.

Carver and Connor-Smith (2010) concluded that in moving from mere difficulty to stress; at least three conditions are possible: firstly, threat is the looming incidence of an event that is anticipated to have awful consequences; secondly, damage is the perception that these awful consequences are already present, and thirdly, loss is the perception that a desired thing has been missed. These unpleasant experiences are all stressful, but they differ in their motivational underpinnings. Loss prevents the maintenance of a desired situation of relationships. For example, the death of a spouse stops the maintenance of the relationship and its activities. Threat and harm are more unclear because they apply to failures to gain motivations, approach-related events,

and failures to keep away from punishers (avoidance-related events) (Carver & Connor-Smith, 2010)

There are differences in the negative emotions happening from problems in approach versus problems in avoidance (Carver 2004; & Carver & Harmon-Jones 2009). Threat in a merely approach context yields frustration and anger; threat in a merely avoidance context yields anxiety and fear. In addition, loss yields sadness and unhappiness, as may harm in the context of avoidance. To the extent that stress is approach related, then, one set of negatively valence affects will predominate. To the extent that the experience is avoidance related, other negatively valence affects will predominate. To the extent that anger and fear differ physiologically, the grounding of the stress response in approach versus avoidance also matters physiologically (Carver & Connor-Smith, 2010). The concept of challenge is also invoked in the context of stress (Lazarus & Folkman 1984). Challenge is a state in which the individual's efforts are strongly occupied, therefore challenging abilities, but in which the individual perceives the chance for gain. In addition, a challenge might be believed of as a most favourable that seems surmountable but the elimination of which will ensure a better state of relationships (Carver & Connor-Smith, 2010). Pure challenge seems to involve the approach system but not the avoidance system and it also implies anticipation of achievement. Affects related to challenge include hope, eagerness, and excitement (Lazarus 2006). The features and costs of challenge seem to be different to those of threat and loss so as to question the view that challenge should be viewed as a form of stress (Blascovich 2008).

The experience of stress appears to be inevitably related to the detection of goals and avoidance of threats. Most basically, stress happens when an individual observes an imminent punisher or has an imminent incapability to achieve a goal, or observes the definite occurrence of a punisher or elimination of a goal. From the goal-pursuit view, these experiences form the broad and very general realm of so-called behaviour-under-adversity (Carver & Connor-Smith, 2010).

2.4.1.1: Stress theories

The main focus of stress theories are the precise association between stressors (the external demands) and the stress itself (the physical processes) and can be classified in two various groups:

1- Selye's approach also called systemic stress which is based on physiology and psychobiology in describing the process; and

2- Cognitive approaches also called psychological stress, developed mainly by Lazarus (1966) and then modified (Lazarus, 1991; Lazarus & Folkman, 1986; & McGrath, 1982) which is based on cognition in dealing with the stress.

2.4.1.1.A: Theory of Selye for stress

The work of the endocrinologist Hans Selye on stress attracted the attention and the concerns of the people who worked in different fields of science and even the media. In his studies on animals he observed that a diversity of stimulus events such as cold, heat, or toxic agents applied strongly and for long enough are able to produce general effects that are not specific to each stimulus event (Krohne, 1996).

In Selye's view, all these non-purposely caused changes comprise the stereotypical response pattern of systemic stress which was defined as a state manifested by a syndrome which consists of all the non-specifically induced changes in a biologic system. This stereotypical response pattern was later called the General Adaptation Syndrome, and progresses over three phases (Krohne, 1996):

1- The alarm response involves a first shock stage which displays autonomic stimulation with an increase in adrenaline release;

2- If harmful stimulation persists, the organism goes into the phase of resistance. During this phase, the symptoms of the alarm reaction fades away, but, as resistance to the harmful stimulation raises, resistance to other kinds of stressors reduces at the same time and;

3- If the harmful stimulation continues, resistance leads to the phase of exhaustion. The creature's ability of adapting to the stressor is exhausted, the symptoms of phase

one come back, but resistance is no longer effective. Permanent tissue damages emerge and if the stimulus continues, the creature may die.

In spite of Selye's work effects on stress researchers, noticeable limitations in this theory were clear; Selye's idea about stress being a response to a number of different events had the critical result that the notion of stress turned into a broad concept for different types of approaches. Therefore, by becoming an alternative name for varied idioms such as threat, conflict, anxiety, or even emotional arousal, the concept of stress was at risk of losing its scientific worth (Engel 1985). Another criticism was focussed at the theory's core hypothesis of an indefinite cause of the General Adaptation Syndrome. Mason (1971) pointed out that the stressors observed as effective by Selye approved a general emotional meaning: they were strange, and strange to the animal. As a result, the animal's condition could be described in terms of uncertainty, helplessness and lack of control. Selye, though, was unsuccessful in identifying those methods that may describe the cognitive conversion of objective harmful events into the subjective experience of being troubled. In addition, Selye does not take into account coping process as important mediators of the stress-outcome relationship.

2.4.1.1.B: Theory of Lazarus for Psychological Stress

The main core of psychological theory of stress can be described by two concepts; appraisal, meaning a person's assessment of the significance of what is going on for their welfare; and coping which represents a person's efforts to handle specific demands through thinking and acting (Lazarus, 1993). From the time of its first appearance as a complete theory, the Lazarus stress theory (1966) has been revised several times, Lazarus (1991); Lazarus and Folkman (1984); and Lazarus and Launier (1978). In his latest revision in 1991 Lazarus reported that as a relational concept, stress is not defined as a specific type of external stimulation or a specific model of behavioural, physiological, or subjective responses. Instead, stress is viewed as a relationship between persons and their surroundings. Lazarus and Folkman (1986) referred to psychological stress as a relationship with the environment that the

individual appraises as important for his or her wellbeing and in which the demands tax or exceed available coping resources. This definition refers to two courses as central mediator within the person-environment transaction: cognitive appraisal and coping. Appraisal, it was first introduced into research on emotion by Arnold (1960) and elaborated with respect to stress processes by Lazarus (1966), and is a key factor for recognizing stress-related transactions. This concept is essential to describe individual differences in intensity, quality, and duration of an elicited emotion in environments that are independently alike for different persons. These appraisals are decided by a number of situational and personal factors. Situational factors include: controllability, predictability, and imminence of a potentially stressful event. Personal factors include: motivational dispositions, values, goals, and general anticipation (Krohne, 1996).

In 1991 Lazarus developed his theory of emotion; this theory also included a stress theory (Lazarus 1993). This theory reported two fundamental types of appraisal; primary appraisal and secondary appraisal. These two types depend on different resources of information. Primary appraisal concerns the occurrence of something which is related one's welfare, while secondary appraisal concerns coping processes. In primary appraisal, three elements are differentiated: goal relevance explains the degree to which an encounter refers to issues about which the individual cares; goal congruence defines the degree to which an event continues in accordance with personal goals; and ego-involvement assigns features of personal commitment such as moral values, self-esteem, and ego-ideal, or ego-identity.

Similarly, three secondary appraisal elements are differentiated: blame or credit results from a person's appraisal of who is in charge for a certain event. By coping possible Lazarus means a person's evaluation of the views for producing certain behavioural or cognitive actions that will positively affect a personally relevant encounter (Krohne, 1996). Future anticipations refer to the appraisal of the further option of an encounter with respect to goal congruence or incongruence. Specific patterns of primary and secondary appraisal lead to different kinds of stress. Lazarus

and Folkman (1984) distinguished three types: harm, threat, and challenge; harm refers to the psychological damage or loss that has already occurred; threat is the expectation of harm that may be about to happen; and challenge results from demands that an individual thinks confident about mastering (Krohne, 1996). These different types of psychological stress are set in specific kinds of emotional responses, therefore demonstrating the close combination of the fields of stress and emotion. In his research related to emotions, Lazarus (1991) reported fifteen essential emotions; nine of these emotions are described as negative: sadness, envy, jealousy, anger, fright, anxiety, guilt, disgust, and shame. Four of them are positive; pride, relief, love, and happiness; and two other emotions are hope and compassion, which have a mixed valence. For example, the anxiety response is based on the following model of primary and secondary appraisals: there has to be a goal relevance to the encounter, in addition, goal incongruence is high and at last, ego-involvement focuses on the safety of personal meaning or ego-identity against present threats. In other hand, precise appraisal models linked to stress or different emotional responses are explained as core relational themes. For example, the theme of anxiety is the confrontation with ambiguity and existing threat. The core relational theme of relief, though, is a distressing goal-incongruent situation that has altered for the better or vanished (Lazarus 1991). Coping is strongly related to the notion of cognitive appraisal and, therefore, to the stress-relevant individual-environment transactions (Krohne, 1996). The majority of approaches in coping research follow Folkman and Lazarus (1980) who define coping as the cognitive and behavioural efforts achieved to control, endure, or decrease external and internal demands and conflict among them. The definition of Folkman and Lazarus (1980) includes the following inferences:

1- Coping actions are not organized in relation to their effects, but according to certain features of the coping process;

2- The coping process includes behavioural as well as cognitive responses in the person.

3- Coping is composed of different single acts and is arranged successively, outlining a coping period. So coping is often categorized by the concurrent incidence of different action sequences and, hence, an interconnection of coping episodes and;

4- Coping processes can be differentiated by their focus on different elements of a stressful encounter (Lazarus & Folkman, 1984).

Individuals can try to alter the person-environment facts behind negative emotions or stress i.e. problem-focused coping and they can also relate to internal elements and attempt to decrease a negative emotional situation, or change the appraisal of the demanding state i.e. emotion-focused coping (Krohne, 1996).

2.4.1.1.C: Theories of resource:

The theories of resource are considered the bridge between Systemic and Cognitive perspectives. Resource theories of stress are not mainly concerned with features that produce stress, but with resources that protect the welfare in the face of stressful encounters. Some social and personal constructs have been anticipated, for example self-efficacy (Bandura 1977), sense of coherence (Antonovsky 1979), social support (Schwarzer and Leppin 1991), optimism (Scheier and Carver 1992), and hardiness (Kobasa 1979). Optimism and self-efficacy are single protecting factors; hardiness and sense of coherence characterize 3-part approaches. Hardiness is a combination of: commitment, internal control, and a sense of challenge as opposed to threat. In the same way, sense of coherence comprises from believing that the world is significant, expected, and fundamentally compassionate. Within the social support field, several types have been investigated, such as instrumental, informational, appraisal, and emotional support (Krohne, 1996).

2.4.2: Coping

Coping is defined as "constantly changing cognitive and behavioural efforts to manage specific external and/ or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus, & Folkman, 1984, p. 141). Compas et al. (2001) defined coping as efforts to prevent or reduce threat, harm, and loss, or to diminish associated distress. Some prefer to limit the concept of coping to voluntary responses

(Compas et al. 2001); others include automatic and involuntary responses within the coping construct (Eisenberg et al., 1997; & Skinner & Zimmer-Gembeck, 2007).
The definition manifests three key features:
A- Coping is process-oriented which means that it focuses on what the individual really thinks and they act in a specific stressful encounter and how these changes as the encounter unfolds.
B- Coping is contextual being influenced by the individual's appraisal of the real demands in the encounter and resources for managing them. The emphasis on context means that particular individual and circumstances together form coping efforts.
C- There are no prior assumptions as to whether it is good or bad coping because coping is simply defined as a person's efforts to manage demands, whether the efforts are successful or not. (Folkman & Lazarus, 1985)

Individuals react to perceptions of threat, harm, and loss using different behaviours and many of them receive the label of coping. Certainly, differentiating between voluntary and involuntary responses to stress is not easy, in fact, responses that begin as intentional and effortful may become involuntary with repetition. Here individuals limit themselves only to responses that are identified by the person engaging in them, therefore eliminating unconscious defensive reactions from the realm of consideration (Cramer 2003).

2.4.2.1: Coping differences and combinations

Coping is considered a comprehensive conception with an extended and multipart history (Compas et al. 2001; & Folkman & Moscowitz, 2004). Numerous differences have been suggested within the broad concept; the difference that launched current considerations of coping was that between problem-focused and emotion-focused coping (Lazarus & Folkman 1984). Problem-focused coping is focussed on the stressor itself, this means that individual has to take decisive steps to eliminate or to avoid the stressor or find ways to reduce the influence of the stressor if it cannot be avoided. For example, if redundancies are anticipated, the problem-focused coping strategies of an employee might consist of saving money, applying for further careers, finding training

to improve hiring prospects, or working harder at the current career to decrease the possibility of being redundant (Carver & Connor-Smith, 2010). So problem-focused coping is defined as extending efforts to recognize, modify, or eliminate the impact of a stressor, try to deal with the cause of the problem (Compas et al., 1988; & Weiten & Lloyd, 2006).

Emotion-focused coping is focussed on reducing distress caused by stressors. And because there are many methods to decrease distress, emotion-focused coping strategies include a wide variety of reactions which may range from self-soothing such as relaxation and looking for emotional supports; to expressing the negative emotion by actions such as yelling and crying; to concentrate on positive thoughts such as rumination and daydreams; and to try to escape from stressful thoughts by denial, avoidance, and hopeful thinking (Carver & Connor-Smith, 2010). So emotion-focused coping is defined as extending efforts to control and regulate emotional states that are the results of exposure to stress and involves releasing inhibited emotions, distracting one-self, managing hostile feelings, meditating (Auerbach, 1989; Compas et al., 1988; & Lazarus & Folkman, 1984).

Problem-focused and emotion-focused coping have different central objectives but some behaviours can assist either role, depending on the aim behind their use. For example, looking for support is emotion-focused coping if the aim is to get emotional support and comfort, but it is a problem-focused coping if the aim is to get advice or instrumental help (Carver & Connor-Smith, 2010). Problem-focused and emotion-focused coping can also empower one another. Active problem-focused coping reduces the threat, but, thus, also reduces the distress caused by that threat. Active emotion-focused coping reduces negative distress, making it likely to think through the problem more serenely, possibly yielding better problem-focused coping. This interrelatedness of problem-focused and emotion-focused coping makes it more valuable to think of the two as harmonizing coping roles rather than as two fully separate and independent coping classifications (Lazarus 2006). The other difference is between engagement and disengagement. Engagement or approach coping is

intended to deal with the stressor or associated emotions and feelings. Disengagement or avoidance coping is intended to avoid the threat or related emotions and feelings (Moos & Schaefer 1993; & Skinner et al., 2003). Engagement coping includes problem-focused coping and some forms of emotion-focused coping such as support looking for, acceptance, cognitive restructuring, and emotion regulation. Disengagement coping comprises responses (reactions) such as denial, avoidance, and hopeful thinking. Disengagement coping is often emotion-focused coping; this is because it involves an effort to escape emotional state of distress. Wishful thinking and fantasy move the person away from the stressor, temporarily at any rate, and denial produces a boundary between truth and the person's experience (Lazarus, 2006). Another difference is between accommodative coping and meaning-focused coping. Within engagement coping, differences have been identified between attempts to control the stressor itself (primary-control coping), and attempts to adapt or adjust to the stressor (secondary-control or accommodative coping) (Morling & Evered, 2006; & Skinner et al., 2003). The term 'accommodative' is used here because it does not carry nuances either of wielding control or of being secondary to other coping efforts (Carver & Connor-Smith, 2010).

Here the concept of accommodative coping derives from ideas about the course of successful aging (Brandtstädter & Renner 1990). Accommodative coping means adjustments within the self that are made as a reaction to restraints. Accommodation is relevant to responses such as cognitive restructuring, acceptance, and scaling back an individual's aims in the face of insurmountable intrusion (Carver & Connor-Smith, 2010). Another type of accommodation is self-distraction which has been historically considered 'disengagement coping', however positive factor analyses constantly indicated that intentionally engaging with positive actions is a means of adapting to uncontrollable events (Skinner et al., 2003). Another related notion is 'meaning-focused coping', named by Folkman (1997, & 2008) where individuals draw on their values, attitudes, and beliefs to discover, or remind themselves of benefits during stressful circumstances (Tennen & Affleck, 2002). Meaning-focused coping suggests that positive emotions as well as negative emotions are familiar during stressful

situations (Andrykowsky et al., 1993), and the positive emotions actual effects on the outcomes, mainly when individuals attempt to find benefit and meaning during hardship (Helgeson et al., 2006; & Park et al., 2009). The last consideration regarding differences in the coping process is proactivity in coping. Even though most discussions of coping put emphasis on reactions to threat and harm, it has reported that some coping processes happen proactively before the incidence of any stressor (Aspinwall & Taylor, 1997). Carver and Connor-Smith (2010) concluded that proactive coping is not necessarily diverse in nature from the rest of coping, but it is used to avoid threatening or harmful states from arising, in addition it is almost constantly problem focused, involving accumulation of resources that will be useful if a threat arises.

2.4.2.2: Theories of Coping

2.4.2.2.A: Overview of the different approaches

Theories of coping may be categorized according to two independent strictures: trait-oriented vs. state-oriented research approaches, and micro-analytic vs. macro-analytic research approaches (Krohne, 1996).

Trait-oriented and state-oriented research approaches have different purposes: The trait-oriented or so-called dispositional, approach intends an initial identification of persons whose coping resources and tendencies are insufficient for the demands of a precise stressful encounter. An initial identification of these individuals will suggest the opportunity for starting a selection process or a successful primary prevention programme. The state-oriented approach has broader objectives. This approach examines the associations between coping strategies employed by a person and resulting variables such as self-reported, emotional responses associated with or following certain coping efforts, or variables of adaptation outcome. This research approach aims to place the underpinning for a common modification programme to increase coping effectiveness.

The micro-analytic approaches focus on a large number of specific coping strategies, whereas macro-analytic analysis operates at a higher level of abstraction, thus concentrating on more fundamental constructs. One example of the state-oriented,

macro-analytic approach is the Classic Defence Mechanisms conception of Freud (1926). Even though Freud had differentiated a large number of defence mechanisms, he connected all these mechanisms into two main structures: intellectualization and repression (Carver & Connor-Smith, 2010). The differences in the two basic functions of emotion-focused and problem-focused coping suggested by Lazarus and Folkman (1984) represent another macro-analytic state approach. In its research scheme, however, the Lazarus group widened the macro-analytic approach to a micro-analytic approach. In addition, in their questionnaire of Ways of Coping (Folkman & Lazarus 1988; & Lazarus 1991), they differentiated eight groups of coping strategies: planful problem-solving, distancing, confrontative coping, self-controlling, escape-avoidance, seeking social support, positive reappraisal, and accepting responsibility (Carver & Connor-Smith, 2010).

2.4.2.2.B: Trait-Oriented theories of Coping (Macro-analytic)

Within the past three decades research on the methods by which people try to cope with stressful states has developed significantly (Zeidner & Endler 1996). Two important constructs have been established by different trait-oriented approaches to cast an understanding of cognitive reactions to stress, these are: vigilance, that is, the orientation toward stressful features of an encounter; and cognitive avoidance that is, preventing attention from stress-related information (Krohne, 1993; & Roth & Cohen, 1986). Different approaches which have corresponded to these notions are (1) repression-sensitization by Byrne (1964); (2) monitoring-blunting by Miller (1987); and (3) attention-rejection by Mullen and Suls (1982).

Repression and sensitization

This construct has two poles and when facing up to a stressful encounter, individuals located at one pole of this aspect (repressors), aim to reject or reduce the existence of stress, fail to express emotions of distress, and avoid thinking about potential negative consequences of this encounter. Individuals at the opposed pole (sensitizers), respond to stress-related prompts by methods of better information seeking, rumination, and obsessive disturbing (Krohne, 2002).

Monitoring and blunting

Miller (1987) considered both constructs as cognitive informational modes and suggested that persons who meet a stressful state respond with arousal along with the amount of awareness they express to the stressor. The level of arousal can be lessened, if the individual is able to diminish the impact of aversive prompts by using different cognitive avoidance strategies such as reinterpretation, distraction, or denial. But, these blunting strategies of coping should only be adaptive if the aversive incident is not controllable. If it is controllable, another strategy will be more adaptive than blunting strategy (Krohne, 2002).

The model of coping modes

Krohne (1993) reported this concept of coping deal with personal differences in awareness orientation and in regulating the emotions and behaviours during stressful situations. The model of coping modes expands the monitoring and blunting concept and also the repression and sensitization approaches in that it connects the vigilance dimension and cognitive avoidance dimension to an explained cognitive-motivational source. It supposes that most stressful conditions are described by two fundamental characteristics which are the presence of aversive stimulus and a high level of uncertainty. The empirical equivalents of these situational characteristics are emotional arousal and uncertainty. The arousal should motivate the tendency to prevent the other processing of cues connected to the unlike encounter, while uncertainty triggers the tendencies for vigilance. Krohne (2002) concluded that persons who are particularly vulnerable of emotional arousal due to stress-inducing situations are assumed to consistently use cognitive avoidance. In addition, the use of cognitive avoidance strategies is mainly intended to protect the individual from an increase in arousal. And persons who are particularly influenced by the uncertainty experienced in most stressful conditions are believed to routinely use vigilant coping.

2.4.3: Coping and war captivity

A number of studies have examined the relationship between PTSD and war veterans' coping behaviours (Eitinger, 1961; Nefzger, 1959; Newman, 1944; Rahe, 1988 &

Richlin, 1977). Nardini (1952) in a study of Second World War veterans reported that 12,000 prisoners of war captured in the Pacific Theatre by Japanese, had several attributes that allowed them to survive. These attributes included: emotional insensitivity or well-controlled and balanced sensitivity, preserved sense of humour, strong motivation for life, good general intelligence, good constitution, strong sense of obligation to others, controlled fantasy life, courage, successful resistance, opportunism, military experience, and luck (Nardini, 1952).

Another study revealed that the personality traits of POWs affected coping and adaptation. Ford and Spaulding (1973) examined members of the Pueblo submarine crew (82 POWs) after eleven months of their repatriation from North Korea. POWs who did well during the years of captivity (three and a half years) often had healthy personalities. They were using different types of ego defenses, such as reality testing, denial, faith, rationalization, and humour. Those who dealt poorly with the stressful situations were often described as being passive-dependent and used a limited number of ego defences (Ford & Spaulding, 1973). In addition, introversion and schizoid behaviour have been reported to be more adaptive than obsessive-compulsive, passive-dependent, or immature behaviours (Ford & Spaulding, 1973; & Weisaeth, 1989) but passive-dependency has been selected as a particularly maladaptive response (Ford & Spaulding, 1973; & Weisaeth, 1989).

Jones (1980) identified the coping strategies that supported the former POWs, who had been held in North Vietnamese confinement. During their captivity, each one formed his own standard set of behaviours. Principles reported as sustaining were:

1- Loyalty to country a- remember their country's heritage; and b- resistance as patriotic duty,

2- Idealizing their family maintaining eagerness to return with a feeling of having been so worthy of them.

3- Union with other prisoners that provides ideal communications, mutual support, and cooperation in resistance (Jones, 1980).

During the Vietnam conflict another important adaptive behaviour was reported by Coker (1974) which was 'maintaining military bearing.' An identification with military morals unified POWs in spirit and in their willpower (Coker, 1974).

Green et al. (1988) and Nezu & Carnevale (1987) found that four modes of emotion-focused coping were used by Vietnam veterans to cope with their war memories. These are: event processing, religion, denial, and time out for reflection (Green, Lindy, & Grace, 1988; & Nezu & Carnevale, 1987).

2.5: Effectiveness of rehabilitation programmes and group therapy in different life's sectors

One of the important rehabilitation programmes is the psychosocial model which can be defined as the process of helping an individual's restoration to a best level of self-governing functioning in the community by regularly encouraging those individuals to take part actively with others in the achievement of mental health and social fitness goals (Liberman & Evans, 1985). The main approaches by which this goal is achieved comprise teaching clients the specific and detailed skills required to function efficiently, and developing the community and environmental resources needed to support or strengthen their current levels of functioning (Lieberman et al, 1985).

Participating in a psychosocial rehabilitation programme is an important goal because it has been associated with positive outcomes which could change various life aspects of participants (Penn & Mueser, 1996). Furthermore, different findings of such programmes' literatures reflect psychotherapy literatures which propose that engagement and taking part in therapy are the most significant reasons of positive outcome (Orlinsky et al., 2004).

Education can change a person health beliefs and knowledge about various health problems and an educational programme can be an effective intervention for preventative guidance and health endorsement for at risk populations (Bushy et al, 2004).

Psychotherapy is regularly offered to sufferers of traumatic incidents throughout a diversity of kinds of support groups, including trauma-focus, cognitive-behavioural,

psycho-educational, psychoanalytic, psychodrama, and self-help groups (Solomon & Johnson, 2002). The hypothesis underlying group therapy is that the bonding of survivors of the similar type of traumatic incidents can be conductive to the recovery and adjustment process (Allen & Bloom, 1994). Members of the same group therapy are supposed to provide each other with the kind of advice that endorses more precise perceptions of intrapersonal potencies and more adaptive interpersonal behaviours Solomon & Johnson, 2002). In addition, the encouraging and secure social atmosphere of the group permits for the reform of intimacy in relationship, and the chance to give support to others is believed to help mend harm to the trauma survivor's own sense of control and self-esteem (Shalev et al, 1996).

There is increasing evidencw that psychological therapy has a positive function to play in the intervention of different mental disorders such as chronic generalised anxiety (Durham & Allan, 1993) and the significance of instant intervention following a trauma to prevent chronic post-trauma problems has often been emphasized (Fao & Meadows, 1997; & Bell, 1995).

One of the most important stress resources is the work-related stressors and employee stress have more and more grown to be a concern for many governments and organizations because stress affects a third of the European working population (Giga et al, 2003), it is a major factor in up to 80% of all work-related injuries and 40% of workplace turnover in USA (Atkinson, 2004), and in Australia most states report an increase in number of annual workers' compensation claims resulting from workplace stress (Caulfield et al, 2004).

Even though it is not likely to get rid of stress completely, people can be trained to deal with it. Many organizations have agreed to stress management training programmes to try and decrease the stress levels of their workforce. A stress management intervention is any action or programme start by an organization that focuses on decreasing the existence of work-related stressors or on helping persons to reduce the negative outcomes of experience these stressors (Ivancevic et al, 1990).

Interventions of work-related stress can aim three different directions in the stress course which are: the strength of stressors in the workplace, the employee's appraisal

of stressful circumstances, and the employee's aptitude to cope with the results (Richardson & Rothstein, 2008). Therefore, interventions may be categorized as primary, secondary, or tertiary. Primary interventions try to change the resources of stress at work (Murphy & Sauter, 2003) such as redesigning jobs to modify workplace stressors (Bond & Bunce, 2000), rising workers' decision-making ability (Jackson, 1983), or supplying other support groups of co-worker (Carson et al., 1999 & & Kolbell, 1995); on the contrary, secondary interventions try to decrease the severity of stress symptoms before they cause severe mental disturbances (Murphy & Sauter, 2003); and tertiary interventions which include: employee assistance programmes, these are intended to treat the employee's mental problems using open and confidential access to skilled mental health professionals (Arthur, 2000).

Most of the results of occupational-stress management programmes show some kind of effectiveness in fight stress but they produce different levels of such effectiveness (van der Hek & Plomp, 1997). Some studies reported effects over one year and sometimes longer (Kushnir, & Malkinson, 1993; & Murphy, & Sorenson, 1988) sometimes an intervention which results about the proposed effect in one group cannot do so in another (Cecil & Forman, 1990; & Grossman, & Silverstein, 1993).

Most participants in stress management programmes take part on a voluntary basis, it is well-reported that programmes, in which partaking is completely voluntary, catch the attention of the worried people who are familiar with the stressors in their work, but who are fairly able of coping with them (van der Hek & Plomp, 1997). Schaufeli (1995) who found, after conducting a workshop for community nurses, that the average level of burnout was considerably lower among workshop participants than among a comparable group of community nurses.

2.6: Effectiveness of psychosocial treatments for PTSD

Bell (1995) emphasizes that it is too important to deal with a trauma immediately to prevent chronic PTSD by offering a suitable intervention. Many such interventions follow the debriefing model which was proposed by Mitchell and Bray (1990). This model consists of seven phases conducted in small groups within three days of

traumatic event: the first phase consists of establishing the purpose of the debriefing and the ground of rules and including emphasis on confidentiality and suspension of rank; second phase includes the recreating the traumatic situation by letting all participants give their point of view on what happened, third phase is to discuss their thoughts at the time of the traumatic situation; fourthly is to describe the worst part of the of the event for them; fifth phase is to is to discuss reactions to the event; and the final phases consist of a teaching element where general reactions to trauma are explained by group leaders to regularize participants' reactions; and a conclusion in which participants give clarifications or closing statements and may stay to meet informally with one another and the team leaders (Fao & Meadows, 1997). Foa et al (1995) conducted a study of a brief prevention programme for female assault survivors. The programme included a number of techniques helpful in treating chronic PTSD, such as exposure, relaxation training, and cognitive restructuring. Foa's study included ten participants joined in brief programme and those were compared with other ten matched control participants who were repeatedly assessed in an assessment control condition. Following the programme, seven of ten in the brief programme condition no longer met PTSD symptoms criteria, compared with only one in the assessment control.

Regarding the psychosocial treatment for chronic PTSD, Brom et al. (1989) conducted controlled study of 112 trauma victims; hypnosis was compared with desensitization and psychodynamic psychotherapy versus a wait-list control group. Participants in this sample suffered from different traumas and met symptoms criteria for PTSD. Treatments were achieved by trained and supervised therapists. Patients in the wait-list condition received unspecified treatment outside the research setting, and number of sessions varied across treatments. Overall, the Brom and his colleagues study meet some of gold standard criteria, such as random assignment and standardized measurements, and falls short in such areas as blind evaluation. The three conditions produced superior improvement to the wait-list condition, but no differences across the three treatments were detected. Psychodynamic therapy reduced avoidance more than intrusion symptoms, and desensitization and hypnosis revealed the reverse

pattern. The results indicated that improvement on RIES was 29% for psychodynamic therapy, 34% for hypnotherapy, and 41% for desensitization.

Ehlers and Clark (2003) concluded that single sessions of individual psychological debriefing are not effective in reducing distress or subsequent posttraumatic stress disorder (PTSD) symptoms. In addition, cognitive behavioural therapy was more effective than supportive counselling in preventing chronicity of PTSD symptoms; however, in most available studies it remained unclear whether supportive counselling facilitated or retarded recovery, compared with no intervention. A brief CBT program given in the first month of trauma was not superior to repeated assessment; however, a course of CBT of up to 16 sessions given at 1-4 months after trauma was superior to self-help, repeated assessment, and no intervention.

Bryant et al. (2203) conducted in their study whose aim was to show the long-term benefits of early provision of cognitive behaviour therapy (CBT) to trauma victims with acute stress disorder. Civilian trauma survivors (n = ?80) with acute stress disorder were randomly allocated to either cognitive behaviour therapy (CBT) or supportive counselling (SC), 69 completed treatment, and 41 were assessed four years post-treatment for post-traumatic stress disorder (PTSD) with the Clinician Administered PTSD Scale. Two CBT patients (8%) and four SC patients (25%) met PTSD criteria at four-year follow-up. Patients who received CBT reported less severe PTSD symptoms, and mainly less frequent and less avoidance symptoms, than patients who received SC. These findings suggest that early provision of CBT in the early month after trauma has long-term benefits for people who are at risk of developing PTSD.

2.7: Intervention Programmes for war combatants

During the First World War, British psychiatrists identified a mystifying condition with specific symptoms included physical and psychological elements, such as trembling, paralysis, stuttering, crying, deafness, blindness, stupor, mutism, anxiety attacks, insomnia, confusion, amnesia, hallucinations, nightmares, vomiting, heart problems, and intestinal disorders. At first this condition was called a "shell shock" (Leese, 2002; & Stone, 1985). Combatants suffering from shell shock were incapable to fight and

caused complicated problems for the medical units, military discipline, and morale. Firstly, military officials were sure that such combatants were malingerers or cowards. But military physicians saw this complicated condition as neurological problem and believed that it was related to the effects of exploding shells (which called then shell shock). Myers and Rivers with a number of chief British psychologists and psychiatrists believed the condition was psychological in nature and put psychotherapeutic interventions for its treatment (Rivers, 1918; & Myers, 1915).

2.7.1: Intervention during the First World War

During the First World War, 1914-1918 an American psychiatrist Salmon, who was the first one to construct the US programme of military psychiatry during that war, visited the United Kingdom to survey the intervention methods British psychiatrists had developed for shell shock (Bond & Komora, 1950). 15% of British combatants had been discharged due to current problem. Salmon's full report was the source for military psychiatry in the US army during the First World War (Salmon, 1917). Salmon described war neurosis as an unconscious getaway from an unbearable condition characterized by a conflict between the instinct of self-preservation and the demands of individual's responsibility. In addition, shell shock was a psychological response to the strains of fighting rather than the expression of a tendency to mental disorder (Pols & Oak, 2007).

Salmon proposed an intervention of three stages to treat war neurosis or shell shock. He suggested that treatment start immediately after the onset of symptoms and was perfectly applied in or near casualty clearing stations, which were positioned a few miles behind the frontlines. Nervous fighters were given a period of break and rest, sedation, and sufficient food. By simple types of helpful psychotherapy inspired with optimism and characterized by persuasion and suggestion, military physicians described to fighters that their response was considered normal in such conditions and would fade away in a few days. One front-line psychiatrist estimated that up to 65% of fighters returned to the fighting lines after 4 or 5 days (Strecker, 1919).

The second stage consisted of psychiatric wards in base hospitals, which were located 5 to 15 miles behind the frontlines. Fighters were treated for up to 3 weeks.
The third stage consisted of psychiatric treatment lasted for up to 6 months in base hospital about 50 miles from the frontlines. If there was no improvement during this period, fighters were repatriated (Salmon & Fenton, 1929).
Intervention close to the frontlines had a double purpose. Firstly, it gave a clear message to fighters that shell shock did not offer a simple way home. Psychiatrists played a major task in fighting so-called evacuation syndromes, in which the present of a particular set of symptoms leading to evacuation and repatriation, which often enhanced the symptoms' occurrence (Strecker, 1919). Secondly, psychiatrists started intervention immediately after symptoms appeared. From the British experience, Salmon had learned that the symptoms of mental disturbance normally became embedded and challenging to intervention when left untreated. Urgent intervention promised to result in high recovery rates and the avoidance of long-term psychiatric disability (Strecker, 1919).

2.7.1.1: Intervention after the First World War

After the end of the First World War, Salmon worked directly with the American Legion and recommended to found specialized intervention services for neuropsychiatric war casualties. He strongly advised not to place those fighters in psychiatric hospitals because of the dishonour attached to these institutions and because the veterans were not affected by severe levels of psychiatric disorders. He believed that outpatient intervention was more suitable (Micale & Lerner, 2001). In 1921, 27% of all hospitalized ex-servicemen were described as neuropsychiatric cases (Salmon, 1921), but in 1927, this number was approximated to be 46.7% (Pols & Oak, 2007). The American Legion was convinced that those fighters deserved the best promising intervention and were entitled to a pension.
After 1925, however, psychiatrists began to doubt the wisdom of providing pensions, because they believed pensions reinforced disability. Psychiatrists wondered whether

their efforts had contributed to the problem of the large number of ex-servicemen who still suffered from psychiatric disorders after the war (Hall, 1944).

2.7.2: Intervention during the Second World War

During the first years of the Second World War the Salmon's plans for treating disturbed fighters were not considered applicable because the military was convinced that screening would eliminate post-combat psychiatric disorders in spite of up to 34% of all fighting-related disorders were considered a neuropsychiatric (Appel et al., 1946). Because US Army policy dictated that psychologically disturbed fighters had to be repatriated, attrition rates became high, as a result military executives accepted the ideas of a small group of psychoanalytically oriented psychiatrists, within this group were Grinker and Menninger, who suggested to apply programmes of forward psychiatry that were like those of Salmon (Pols & Oak, 2007).

Grinker and Spiegel in 1943 set up psychotherapeutic intervention close to the frontlines for the US Air Force (Hale, 1995). They injected disturbed fighters with sodium pentothal, which induced a dream state, and then encouraged their patients to re-experience their traumatic experiences, which would relax the experiences' strong hold on their mentality. Grinker and Spiegel asserted that many soldiers recovered; the paralyzed can move, the deaf can hear, the stuporous become aware, the mute can talk, and the terror-stricken psychotics become well-organized persons (Grinker, 1945). Unaware of Salmon's plans during the First World War, the neurologist Hanson, who was working in Tunisia and Algeria, initiated simple and straightforward interventions (rest, good food, hot showers, and sedation), which he declared were successful in returning fighters to the battle line within few days (Hansen, 1949).

Grinker and Spiegel argued that fighters who broke down after extensive exposure to fight were neither cowards nor weaklings; they were normal persons who could no longer cope with the continuous and dreadful stressors of war. They added that it would look like to be a more reasonable matter to ask over why the fighter did not surrender to anxiety, fairly than why he did (Grinker & Spiegel, 1943). According to Grinker and Spiegel, every man had his breaking point; they approximated this

breaking point to happen wherever between 100 days and 1 year of active fight duty. Two chief psychiatrists afterwards argued that one of the most important lessons of the Second World War was that it needed psychiatrists to move awareness from problems of the abnormal mind in normal times to problems of the normal mind in abnormal times (Farrell & Appel, 1944).

Menninger, an American neuro-psychiatrist started in 1943 a scientific research within psychiatry, and a wider application of psychiatric knowledge in the solution of personal and social problems. He notified all military medical officers of the principles of forward psychiatry (Pols & Oak, 2007). Psychiatrists declared that they were able to return 40% to 50%, and at times even up to 80%, of neuropsychiatric cases to duty within a week (Bartemeier et al., 1946).

Following the end of war, the figures were adjusted downward, when it was acknowledged that the percentage of fighters who were able to return to the frontlines was disappointingly low (Brill et al., 1945). Altogether, there were more than one million neuropsychiatric admissions to the medical services of the US armed forces, representing 6% of all admissions (Appel, 1945).

The research of social scientists reinforced the shift in psychiatry's theoretical focus from individual predisposition toward broadly influential environmental factors, such as the stressors of fighting. One of the first psychiatrists to observe fighters suffering from war neurosis in Tunisia was convinced that fighters were not mainly stimulated by abhorrence for the enemy or the principles of freedom and democracy, but by the ties with their mates and regard for their officers (Spiegel, 1944). Spiegel believed that group solidity was an important dynamic in preserving morale. These views were proved by a team of sociologists led by Stouffer, who investigated motivational and social factors in the US Army and concluded that morale was inversely linked to breakdown occurrence and thoroughly linked to the trust fighters had in their officers, their preparation, their outfit, their weapons, and their fellow fighters. Morale was also associated with the level of perceived support from the home front. Most considerably, it was related to the strength of the emotional ties among fighters and between fighters and their leaders (Stouffer et al., 1949).

Research conducted after the Second World War confirmed that about 40% of all cases of nervous breakdown took place overseas, while around 60% happened in the armed forces within the United States (Appel, 1945). These findings indicate that psychiatric disorder was not mainly connected to extensive frontline duty but to a variety of other factors, including lack of morale. Dwyer (2006) concluded that African American fighters, whose divisions were isolated from the rest of the armed forces, reported a high rate of psychiatric syndromes, which was most likely related to their low status and the discrimination they suffered in the army. These findings are further reinforced by current research into the etiology of post-traumatic stress disorder, which has deemphasized the role of the original traumatic event and has highlighted the importance of a variety of contextual factors, among them the perception of social support, pre-existing anxiety or depression, and a family history of anxiety (Schnurr et al., 2004; Yehuda, 1999; & Yehuda & McFarlane, 1995).

2.7.2.1: Intervention after the Second World War

After the end of the Second World War, the majority of psychiatrists believed in helping returning fighters to integrate into society primarily a job for families and the local community. The benefits of the GI Bill of Rights (An act to provide Federal Government aid for the readjustment in civilian life of returning World War II veterans, 1944.), which included funding for higher education and easier access to mortgages, aided many veterans. As psychiatrists later hypothesized explicitly, the development of psychiatric problems after wars could be counteracted by the presence of an understanding and supportive community, a perceived gratitude of the service that had been made, and in particular, employment and the perception of social support (Schnurr et al., 2004).

General Bradley, who was greatly respected among soldiers and veterans, was appointed in 1945 as the head of the Veterans Administration. Bradley hired Hawley, the chief surgeon of the European Theatre of Operations, to direct the Division of Medicine. Hawley hired more than 4000 physicians and began a wide hospital-building programme. Under the policies of Hawley and Bradley, new Veterans Administration

hospitals were established in association with medical institutions, promising that the best medical services would be presented to veterans. The Veterans Administration system also encouraged clinical psychologists to become psychotherapists and provided a large number of training positions (Wade & Schneider, 2005).

In 1947, less than half a million patients with neuropsychiatric disturbances received pensions from the Veterans Administration, and approximately 50000 of these were treated in Veterans Administration hospitals. Many of these suffered from chronic conditions that did not respond well to treatment (Pols & Oak, 2007).

2.7.3: Intervention during the Korea and Vietnam Wars

In the early phase of the Korean War, military officials reported very high rates of neuropsychiatric casualties (250 per 1000 per year) (Cameron & Owens, 2004). Because of the nature of the conflict, characterized by fast shifting frontlines and extensively dispersed battlefields, it was hard to apply programmes of forward psychiatry. After the determined implementation of these programmes, however, more than 80% of neuropsychiatric affected fighters returned to battle (Cameron & Owens, 2004).

From the start of the Vietnam War, broad and well-equipped psychiatric services were accessible to treat mentally distressed fighters (Wilbur, 1992). During that conflict, the prevalence of combat stress was reported to be very low, less than 5% of all medical cases. According to recommendations of military psychiatrists during the Second World War, Vietnam War fighters had a tour of duty restricted to one year and regular periods of rest and relaxation. Military psychiatrists believed that both factors reduced the prevalence of mental breakdown (Cameron & Owens, 2004).

Since the Vietnam War, mental health squads have become a vital part of the fighting forces. On the basis of the experience of military psychiatrists of previous wars, the US armed forces have applied broad strategies to target combat stress, in line with the belief that all service personnel are possible stress casualties (Pols & Oak, 2007). The teams of combat stress control were staffed by psychiatric and mental health professionals who are responsible for prevention, priority of intervention, and short-

term intervention with the principle of maintaining manpower and retaining operational efficiency. These teams provide a range of services, including conducting surveys of the interpersonal climate within units, educating unit command, providing briefings on suicide prevention and reintegration advice for returning home, and providing informal support to soldiers (Pols & Oak, 2007).

Critical incident stress debriefing includes a specialist intervention as soon as possible after potentially traumatic events. It has also been enthusiastically incorporated by modern stress control teams, which are deployed after natural disasters or terrorist action (Simon, 2003; & Solomon et al., 2005).

2.7.3.1: Intervention after the Vietnam War

Before the Vietnam War, psychiatric consensus supposed that fighters who recovered from an incident of mental breakdown during the fight would suffer no bad long-term consequences (Pols & Oak, 2007). Psychiatric disability beginning after the war was thought to be related to pre-existing conditions (Simon, 2006). As a result, military psychiatrists gave quite little attention to post-war psychiatric syndromes. A major shift in psychiatric interest in war-related psychiatric disability happened after the Vietnam War. Fifteen years after the United States withdrew from Vietnam, an epidemiological survey concluded that 480 000 (15%) of the 3.15 million Americans who had served in Vietnam were suffering from service-related PTSD. In addition, nearly one million ex-service personnel showed symptoms of PTSD at one time or another (Kulka et al., 1990).

The identification that many veterans suffered from chronic psychiatric disorders was the effect of a long progression that began in 1970 when Shatan and Lifton adopted the cause of a group called Vietnam Veterans against the War. In their meetings, they discussed veterans' health and well-being, which they considered to be poor (Lifton, 1973). Shatan and Lifton lobbied for increased mental health services for Vietnam veterans. Their efforts were reinforced by the acceptance of the diagnostic category of post-traumatic stress disorder in the 3rd edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders at the 1980 annual

meeting (Wilbur, 1990). The criteria for this diagnostic category included the concept of delayed onset: psychiatric symptoms could appear several years after the initial trauma.

Justifications have been made to describe the extremely high rate of PTSD after the Vietnam War. Media interpretations emphasized that fighters entered and left the war as normal persons instead of in close-knit units, returning to a polarized United States where they were often detested instead of celebrated as heroes, in addition to suffering the pains of dishonour and high unemployment. There are a number of reasons to develop a more nuanced explanation of this condition (Pols & Oak, 2007). Since 1980, the PTSD diagnosis has stayed controversial; disagreements over its definition and measurement persist. Estimates of the incidence of PTSD in Vietnam veterans range from 3.5% to 50%. Some critics have argued that providing veterans with a diagnostic label was the only way to give poor Americans, who were recruited in unusually large numbers in the Vietnam conflict compared with earlier 20th century US wars, an entitlement to a pension and medical care and that, after a diagnosis was conferred, symptoms were solidified and disability ingrained to maintain these entitlements (Simon & Jones, 2004).

Because of the perceived size of the problem, U.S. psychiatrists and psychologists have started an impressive number of research projects on treatment strategies for PTSD. Proposed specialist treatments have included the use of antidepressant medication and individual and group psychotherapies. There is now an extensive evidence base for the effectiveness of trauma-focused cognitive behaviour therapies administered to individuals or groups of veterans (Bisson, & Andrew). Nevertheless, there is still debate among psychiatrists whether PTSD constitutes a separate diagnostic entity that is independent from other anxiety and depression states (Simon, 2005).

2.7.4: Intervention after the Gulf and Iraq Wars

A number of studies have reported, after the Gulf and Iraq Wars, that prevalence rates of PTSD was between 15.6% and 17.1% among those who have returned from the these wars (Hoge et al., 2004). Research has reported that military personnel are not

taking full benefits of the medical and psychiatric resources at their disposal. Within the military, the view that displaying psychiatric symptoms indicates weakness of character or cowardice is still generally held (Friedman, 2004). Soldiers most in need of mental health care do not seek it because of fear of embarrassment, difficulties with peers or officers, or interference with career opportunities within the military. It appears that the accumulated wisdom of psychiatry and increasingly efficient and sophisticated psychiatric treatment methods generally do not reach those who need them most (Pols & Oak, 2007).

After the end of the Gulf War, the media mainly focused on Gulf War Syndrome and gave relatively little attention to PTSD. After returning from service, a number of Gulf War veterans displayed symptoms of anxiety, depression, dizziness, headaches, fatigue, cognitive impairment, insomnia, joint pains, and shortness of breath, which they related to the specific conditions of that conflict, including exposure to environmental hazards such as burning oil wells and depleted uranium, pesticides, and the side effects of vaccinations. In spite of spending a quarter billion on research, in the United States, no definite set of symptoms indicating the existence of a war-related syndrome has been found and no clear cause has been identified (Engel et al., 2006).

A number of psychiatrists have suggested that the symptoms experienced by veterans have a important and constant psychogenic elements, although the detailed symptoms seem to vary from war to war and most veterans have a tendency to resist psychogenic explanations for their condition and prefer somatogenic ones (Pols & Oak, 2007). Jones et al. (2002; 2006) compared the reported symptoms of about 1500 veterans who received pensions for post-combat psychological disability from 1900 to the Korean War with those of 400 veterans of the Gulf War. No syndrome specific to any war could be identified. According to Jones, the explanation given to war-related syndromes reflects broader cultural concerns in addition to the situation of medical knowledge and the way physicians classify and understand functional somatic presentations. After the Gulf War, a number of outspoken veteran groups aspired to gain recognition for the medical problems of veterans by claiming that they were

related to a number of specific conditions related to that deployment rather than subsuming them under a diagnosis of PTSD (Pols & Oak, 2007).

Engel et al. (2006) argued that investigating the precise characteristics of post-war syndromes will not yield constructive results. This is because there is no definite set of medical symptoms can be identified after each war, and because each war has given rise to an increase in unexplained medical symptoms among military personnel. Instead, Engel et al. suggest the introduction of a population-based health care model to lessen their impact. Because the majority of veterans first look for medical attention in primary care settings, the lessening of the symptoms of post-war medical syndromes should be provided there instead of being based on specialist intervention, psychiatric or otherwise (Pols & Oak, 2007). Care should be patient centred and focus on regaining and maintaining functioning, thus avoiding medicalizing traumatic distress and reinforcing illness behaviour. If symptoms persist, specialists will become involved. Engel's model introduces graduated levels of care, which offer a range of interventions, including preclinical prevention, symptom lessening in routine primary care, symptom reduction and disability prevention in collaborative primary care, and intensive rehabilitation with specialist intervention only if significant disability persists.65 It is a significant deviation from the emphasis on specialist care by psychiatrists developed after the Vietnam War. It is likely that this model will deliver medical care that is more comprehensive to veterans (Pols & Oak, 2007).

CHAPTER THREE

METHODS

3- Methods

3.1: Purpose of the Study

This study plans to explore the impact of captivity on the mental health of Iraqi former prisoners of war and to investigate the effect of an intervention to reduce the severity of their psychological symptoms.

1) To review and discuss previous research on PTSD, anxiety and depression for former POWs in general and in particular the former Iraqi POWs of Iran-Iraq war, 1980-1988; and to explain the long-term effects of their captivity.

2) To explore the effects of captivity and imprisonment on levels of PTSD, anxiety and depression for a cohort of former IRPOWs of the Iran-Iraq war, 1980-1988.

3) To apply a psychosocial rehabilitation programme for IRPOWs and evaluate the benefits obtained from the programme.

These aims will be achieved by a set of specific objectives:

1- Explore the levels of PTSD, Anxiety and Depression and social support in POWs from Iraqi former prisoners of Iran-Iraq war, 1980-1988;

2- Explore the relationships between variables, including;

- Age; duration of captivity; level of education; income; time elapsed since release from captivity; level of education; rank, and recovery from PTSD;

3- Compare the levels of PTSD, anxiety and depression in Iraqi former prisoners of Iran-Iraq war who have received a 12-week intervention programme with a control group who have not received the intervention.

3.2: Design of the Study:

An experimental study using a randomised controlled trial design with analysis using repeated measures was conducted with 92 participants at Phase one (baseline) and 79 participants at final Phase (Phase four) who were former prisoners during Iran-Iraq war, 1980-1988.

A Randomised Controlled Trial design with repeated measures analysis was used because the study intended to examine the effectiveness of a designed psychosocial intervention for a group of Iraqi prisoners of Iran-Iraq war, 1980-1988. Those recruited POWs were allocated randomly into two groups, a control group and an intervention group. The intervention group underwent a programme of 12 sessions, an hour session each week. Both groups had to complete an identical questionnaire four times over the study period.

3.2.1: Randomized controlled trial (RCT)

Basically, the randomized controlled trial (RCT) is a kind of study in which individuals are allocated at random to be given one of a number of medical treatments. In addition, it is a particular kind of methodical test and considered to be the most effective of all research designs (Jadad, 1998). The randomized controlled trial is considered one of the simplest but, in the same time, most influential tools of research and the most powerful tool in modern clinical research. Furthermore, it is regularly applied to examine the effectiveness of different kinds of treatment among patient populations (Nystrom, 1993).

Randomized controlled trials could be defined as controlled, quantitative, comparative experimentation in which a group of researchers investigates two or more treatments by assigning them to groups of persons who have been randomly allocated a treatment (Stolberg et al., 2004).

So in randomized controlled trial, the study subject is the distinguishing characteristics of this type of design. Before the treatment begins participants are at random allocated to get one or another treatment in the study (Moher et al., 2010). After randomization, the two sets of participants are followed in exactly the same way, with

the only differences being the care they receive. The significant advantage of suitable randomization is that it reduces any allocation bias and allows evaluation of both previously identified and unidentified predictive factors (Moher et al., 2010).

Randomized Controlled Trials are also named randomized clinical trials or randomized controlled clinical trials when they link to medical research but they are not just employed in clinical research. They are used in many fields including many of the social sciences (Wollert et al., 2004).

Frequently randomized controlled trials need large sample sizes because many interventions have fairly small impact and the size of the accepted result of the treatment is the major determinant of the sample size needed to carry out a successful randomized controlled trial (Stolberg et al., 2004). The smaller the expected effect of the treatment, the bigger the sample size required to be able to conclude, with sufficient power, that the differences are not likely to be as a result of chance alone.

The randomization procedure for this kind of design gives the randomized controlled trial its strength. Random allocation indicates that all subjects of study have the same chance of being allocated to each of the study groups (Altman, 1991). Therefore, the allocation is not decided by the researchers, the investigators, or the study subjects (Jadad, 1998). The principle of random allocation of study subjects is to guarantee that the characteristics of the subjects are likely to be similar as possible within the comparison groups at the start of the study (or baseline) comparison. If randomization is completed appropriately, it decreases the threat of a serious difference in identified and unidentified factors that could influence the clinical course of the study subjects. No other study design allows researchers to control these factors so effectively (Stolberg et al., 2004).

In this field, to guarantee the success of the randomization procedure the researchers need to track two rules; first, they must identify the rules that will manage allocation and then follow those rules firmly through the whole study (Jadad, 1998); second, the fundamental issue is that after the process for randomization is decided, it should not be amended at any stage throughout the study (Stolberg et al., 2004).

3.2.1.1: Probable Bias in RCTs

Although allocation bias can be minimised by randomization, random allocation does not prevent other possible kinds of bias (Stolberg et al, 2004).

3.2.1.2: Limitations in using Randomized Controlled Trials

The assessment of the methodological features of randomized controlled trials is essential to the evaluation of individual trials, the performance of unbiased logical reviews, and the presentation of evidence-based health care (Stolberg et al., 2004). Nevertheless, essential methodological details may be lost from available reports, and the quality of reporting is, then, often used as an alternative measure for methodological quality (Stolberg et al., 2004). High-quality reporting may conceal significant differences in methodological quality and, conversely well-performed trials may be reported badly (Huwiler-Müntener et al., 2002). On the other hand, health care suppliers rely on writers and editors to report necessary methodological factors in randomized controlled trials to permit determination of trial validity, for example, the chance that a trial's results is to be counted unbiased (Devereaux et al., 2002). The following are the important limitations in RCTs:

1- Inadequate strength: a survey of 71 randomized controlled trials illustrated that most of these trials were too small, may have inadequate strength to identify significant medical differences, and that the writers of such trials appeared not to be aware of these details (Freiman et al., 1987)

2- Bad reporting of randomizations: a study of 206 randomized controlled trials confirmed that randomization procedures, one of the most important design characteristics necessary to avoid bias in randomized controlled trials, were badly reported (Schulz et al., 1995).

3- Other probable limitations: Chalmers (1995) identified further limitations which were: a- insufficient randomization; b- failure to blind the evaluators to the outcomes; and c- failure to follow up all participants in the trials.

3.2.2: Repeated measure design

A repeated measures study is indicated for studies that collect data on similar measures over several Phases for each participant. For example, repeated measures are collected in a longitudinal study in which changes in outcome variables of interest need to be assessed over time. Some other studies compare the same measure under two or more different circumstances. (Fitzmaurice, Davidian, Verbeke, & Molenberghs, 2008)

The repeated measure design allows the statistical inference to be achieved with fewer participants because it reduces the variance of estimates of treatment effects and it allows many experiments to be achieved more rapidly because fewer groups are to complete the whole experiment. In addition, the repeated measures designs allow observation of changes in participant behaviour over time thus allowing for the assessment of time course of longevity of effect (Jones, & Kenward, 2003).

3.2.2.1: Advantages and disadvantages of the repeated measures designs

The advantages of repeated measures designs are that it makes an experiment more competent and helps maintaining the variability low by helping to maintain the validity of the results higher by ensuring a reduced chance of confounding factors, as individual differences between participants are removed because the same individuals are being assessed over time, while still allowing for smaller than standard participant groups (Fitzmaurice, Davidian, Verbeke, & Molenberghs, 2008).

The main disadvantage of repeated measure design is whether each participant is able or willing to attend the time and place of the repeated experiment (Fitzmaurice, Davidian, Verbeke, & Molenberghs, 2008).

3.2.2.2: Possible threats to the repeated measures designs

In spite of the strengths of repeated measures study designs there are also threats to the internal validity of the design when; the participants are examined several times their scores tend to regress towards the mean (regression threat); the participants may change during the course of the experiment, regardless of experimental condition/ treatment (maturation threat); and finally, occurrences outside the

experiment may affect the responses of participants between the waves of the repeated measures (history threat) (Minke, 1997).

3.3: Setting of the Study:

The study was conducted at the University of Baghdad/ Baghdad, Iraq. A lecture room with more than 50 chairs was allocated in the Collage of Nursing/ University of Baghdad for the Intervention group. This lecture room was on the first floor and within the Medical specialities Department. The room has all the possible facilities such as heating, air-conditioning, and data projection screen.

3.4: Sample of the study:

The sample of this study were taken from Iraqi repatriated prisoners of Iran-Iraq war (IRPOWs), 1980-1988 who had been captured during the 8-year war between the two countries and were set free from 1990 to 2003. This sample was recruited using snowball sampling.

Every former Iraqi prisoner of the Iran-Iraq war, 1980-1988 has a certificate issued by the International Committee of Red Cross (ICRC) which confirms the name of the person and the date of capture and release (appendix one).

As there is no database for prisoners of war in Iraq (all documents and archives of the Iraqi Ministry of Defence were destroyed during the USA's invasion to Iraq in 2003) a snowball sampling strategy was used to recruit participants.

3.4.1: Inclusion Criteria for the sample:

Participants were required to be:

1- Iraqi former prisoners of the Iran-Iraq war who had being captured between the years 1980 and 1988.
2- Iraqi former prisoners of the Iran-Iraq war who had being released between 1990 and 2004.
3- Male (In Iraq, and during the Iran-Iraq war, there was not any military recruitment of females).
4- Had given written informed consent to participate (Appendix eight).

5- Has the capacity to engage in the programme of intervention and to complete the required assessment scales.

3.4.2: Exclusion criteria for the sample:

1- Those living outside Baghdad because the security problems within Baghdad prevented them from travelling to the capital to take part in the study.

3.4.3: Snowball Sampling

Snowball sampling is a non-probability sampling technique used to recognize possible study subjects who are hard to locate or access or if the study subjects are considered very rare or are limited to an extremely small subgroup of the population (Heckathorn, 2002). The Snowball sampling technique operates like sequence referral. After meeting the first subject, the researcher asks for help from the subject to identify people with similar traits or behaviour of interest. The researcher then meets the nominated subjects and continues in the same way until obtaining the adequate number of subjects (Salganik, & Heckathorn, 2004).

For example, if obtaining subjects for a study investigating a relatively rare disease, the researcher may opt to use snowball sampling since it would otherwise be difficult to obtain subjects. It is also possible that the patients with the same disease have a support group; so recruiting one of the members of the group as the initial subject will provide access to further subjects for the study (Heckathorn, 2002).

3.4.3.1: Facts of the present study sampling

In Iraq, the researcher must obtain the consent of The Iraqi Ministry of Planning and Developmental Cooperation (appendix Two) in order to conduct scientific work. Initially participants were approached and recruited from the Iraqi Ministry of Human Rights/ Studies and Researches Department (appendix three) where those repatriates attend in order to confirm details of their capture and release. (The department of studies and Researches has a Section called 'Iraqi prisoners of war affairs' was created from previous special section called 'The affairs of the Iraqi repatriated POWs' and which was related to the Intelligence of the previous Iraqi Ministry of Defence which was

destroyed and then resolved by the American civil governor. Those who were working in the previous section succeeded keeping all the CDs which contain all the details of those repatriates and after establishing the first Iraqi national government with new Ministry of Human Rights they handed over these documents and there was a priority for them to establish the new section).

The repatriates need such confirmation so as to use them for many purposes such as to:

1- Apply for a job (before the USA occupation to Iraq in 2003 and after the first wide repatriation took place in 1990 there was a priority for the repatriates to get certain jobs according to their qualifications if they did not have any governmental jobs before their capture);

2- Apply for retirement (some of repatriates preferred to get retirement and keep his free work as main resource for his living);

3- Provide the Special Governmental Medical Committees, which determine the disabilities of those repatriates, with confirmation of capture. All the repatriates were granted a minimum degree of disability (30%) which qualify each repatriate for retirement even those who served in the army as recruits and reservists and were not military personnel and with the exception of the period of actual service in the army or in captivity, this means that if the repatriate had a maximum period of service in the army together with the period of captivity less than 15 years (the minimum period to get retirement) he is granted the state of retired the same as for the military personnel and;

4- For those who had had already a governmental job before their capture they need confirmation of the date of capture and the date of repatriation to add the period of captivity to their civil service after being doubled (e.g. if the duration of captivity was 10 years, it will be 20 year for the civil service).

(The Iraqi government/ Ministry of Human Rights and International Committee of Red Cross (ICRC) agreed, after the USA's invasion, to cooperate in many humanitarian activities, one of these concerned repatriates' affairs).

The researcher was granted facilities in order to achieve his mission; an identification card was issued. By which he was able to enter the Ministry's building; and a room was allocated to him in the Department of Studies and Researches within the same Ministry's compromises. The room was provided with suitable facilities to make the situation easy for the researcher to meet those repatriates. Such facilities were: air-conditioning, number of chairs and table (sometimes the number of chairs was increased due to increasing in the number of repatriates attended), and generous hospitality.

With the cooperation of the Inquiries department's members of the Ministry were asked to inform any repatriate, who was attending to the Ministry, and accompany him if he was alone to the room allocated to the researcher. Sometimes more than one repatriate attended in the same time so the researcher was able to meet them together. The researcher confirmed with the members of the department of Inquiries that any repatriate had the right not to attend if he did not wish to come and just those who live in Baghdad province were required

The researcher initially had met a number of those repatriates and handed them the Participant's Information Sheet (Appendix Four) (This sheet was an Arabic version of the LJMU Participant's Information Sheet) and provided information regarding the study. Twenty two agreed directly to take part in the study and agreed to help in recruiting other repatriates who they knew and the researcher gave them his telephone number. 305 repatriates were met by the researcher within a 10 day period in the Ministry of Human Rights:

1- Different number of repatriates attended each day, sometimes between four and fifteen repatriates were attending in different times of the day (between 9am and 3pm).

2- The first 15 repatriates, who accepted to take part in the study, were chosen for the Pilot study. The researcher explained to them all about this study, its importance, how long it would last, and how often they needed to complete the Questionnaire within two weeks. The researcher then took their consent to participate in this study.

3- Some of those attended within the next days had been informed by other repatriates and had chosen to attend despite not having other business at the Ministry.
4- 107 repatriates contacted the researcher to inform him that they were ready to fix a date for meeting in different places but not in the Ministry of Human Rights in order to have an idea about the study.
5- Most of these meetings were after the period of ten days and most of them happened in the College of Nursing/ University of Baghdad which situates at the centre of the capital; one meeting was arranged to be at the house of a repatriate who invited other four repatriates living in the same town; some meetings were arranged to be where those repatriates work; and others were arranged to be in different parts of Baghdad and they happened in Cafe's and Casinos.
6- All the repatriates met by the researcher received all the details about the control group and intervention group, the process of allocation, and what would happen in both groups.
7- As the study was intended to examine the effects of a psychological intervention on IRPOWs participants were randomly allocated to either the intervention group or control by using two envelopes with a piece of paper written on either Intervention or Control.
8- Only one hundred and thirty six repatriates (including 15 repatriates who accepted to take part in Pilot study), from more than four hundreds and twelve repatriates who were met by the researcher, gave their consent to join in the study. This final number was determined after the three weeks of recruitment.
9- From the 121 repatriates in the main study group 54 were randomly allocated to the Control group and 67 repatriates were randomised in to the Intervention group.

A. For those allocated in to Intervention group some of them refused to take part in the study unless they were allocated in to Control group; six of them justified that they had not enough time, especially given the deterioration of security in Baghdad; another four repatriates justified that they could not leave their work in the morning hours; another three said that they had a commitment related to their work to travel outside Baghdad at different times in the week; one high-

ranked staff officer and two pilots apologized for not being able to take part in the study because they could not attend weekly meetings in fixed places and at fixed time, as they did not want to be an easy prey for the assassins who they believed came from or were related to Iran; and another two repatriates contacted the researcher later on and told him they could not join in the study for personal reasons. So the final number of the Intervention group was forty nine participants.

B. For the 54 repatriates allocated to the Control group some of them told the researcher that they would not continue in the study; five of them told the researcher that they found that the study was of no use for them and they would not get any benefits in participating in it; another two informed the researcher that they would travel to another country within the next few days; and another four justified that they were unwilling to unclose their personal privacy. So the number of participants in Control group was forty three.

11- Every five repatriates, who were randomly allocated into intervention group, had been put in one group and began, after the researcher finished the Pilot study, to attend the intervention. There were nine groups in total each containing five participants apart from one group which contained four participants.

12- Group 1, the intervention group underwent a programme of group psychotherapy for one hour a week over a period of 12 weeks. The intervention took place in the College of Nursing at University of Baghdad (appendix five), which was in the University of Baghdad (appendix six).

13- Group 2, the control group did not undergo any intervention but completed the same instruments (Questionnaire) four times as intervention group did.

In London, the UK, Iraqi Cultural Attaché confirmed all the letters of facilities issued by all the places mentioned above (appendix seven).

3.5: Instruments

All participants completed the following scales:-

1-Hospital Anxiety & Depression scale (HADs).

2-Short Form Social Support Questionnaire (SSQ6).

3- Brief COPE.

4- POW Questionnaire for PTSD.

All these scales were translated in Arabic language and the Arabic version was then back translated to the English language, to ensure language equivalence. The English and Arabic versions were translated by two legal translators.

3.5.1: Hospital Anxiety & Depression scale (HADs). (Appendix nine)

A number of brief questionnaires measuring a limited set of symptoms were developed in different medical and psychiatric fields and one of these questionnaires is the Hospital Anxiety and depression Scale (HADs). HADs is a 14-item scale, developed by Zigmond and Snaith in 1983 to provide a brief state measure and to make cost-effective screening of mental disorders possible (Zigmond & Snaith, 1983) and to identify the 'possible and probable' of anxiety disorders and depression amongst outpatients in non-psychiatric hospitals and clinics. It assesses both anxiety (HADS-A) and depression (HADS-D) and consists of seven items for each subscale that assess the severity of anxiety and depression. The main function of the HADS scale is dimensional rather than definite, so it does not make accurate diagnoses of psychiatric disorders, but is useful for spotting general hospital patients who need further psychiatric assessment and assistance (Rust & Golombok, 1999).

The scale is self-administered with instructions on the printed form and takes about 10 minutes to complete. Each item is scored from 0 to 3 and so the total score range from 0 to 21 for the anxiety subscale and also for the depression subscale.

Higher scores indicate greater anxiety or depression. Based on Zigmond and Snaith's (1983) study of 100 medical outpatients, scores from 8 to 10 on each scale have been taken to indicate 'possible' clinical disorder and form 11 to 21 to indicate 'probable' clinical disorder, as these scores resulted in fewest false positive and negatives when compared with psychiatric assessment. For the severity of the anxiety and depression disorders; 0-7 indicates that there is no disorder; 8-10 indicates the Mild level of anxiety or depression; 11-15 refers to a Moderate level of both disorders; and 16-21 indicates a severe level. The internal consistency for the two subscales was 0.93 for

anxiety and 0.90 for depression as assessed by applying Cronbach's alpha (Moorey et. al., 1991).

To prevent the effects of somatic disorder on the HADs scores, the somatic symptoms such as dizziness, headaches, insomnia, anergia and fatigue, which are also related to physical disorder, have been excluded. In addition, symptoms which might relate to severe psychological disorders have also been excluded, because such symptoms were not familiar in patients visiting a non-psychiatric hospital clinic. Zigmond and Snaith also aimed to describe cautiously and differentiate between the notions of anxiety and depression (Bjelland et. al., 2002).

HADS has been applied widely since it was published in 1983. Herrmann (1997) reviewed about two hundred papers which used HADS in approximately 35,000 persons in different patient populations and concluded that HADS was an instrument with high reliability and validity for assessing anxiety and depression in medical patients (Herrmann, 1997).

The other most recent review was achieved in 2002 by Bjelland and his colleagues who recognized 747 articles that referred to HADS in a large number of journals by 2000. Furthermore, this review included not only medical populations, as Herrmann did, but also general populations. So as a result, the number of articles used HADS has increased fourfold. The review of Bjelland and his colleagues has confirmed the statement that HADS is an instrument that can separately screen the dimensions of anxiety and depression and also caseness of anxiety disorders and depression individuals from settings other than psychiatric hospital clinics. Although a very few number of studies have been conducted to explore anxiety and depression in other populations, they reach the conclusion that HADS has the same effects when applied to the general population's samples, general practice's samples and medical patients' samples (Bjelland et. al., 2002).

3.5.2: Short Form Social Support Questionnaire (SSQ6). (Appendix ten)

Social attachments play an important and positive role in psychological adjustments, health, and wellbeing. Psychologists and sociologists are keen to supply their clients with the acceptance required to follow self-examination. Military personnel build up strong mutually strengthening ties with each other that contribute to their achievement and endurance. Physicians daily recognize well the valuable effects of their awareness and expressed concern of these support networks on their patients' well-being and recovery from illness. These types of observations have directed the idea that social support: firstly, contributes to positive adjustment and personal development and secondly give a shield against the effects of stress (Sarason et. al., 1983). Social support is generally explained as the existence or accessibility of persons on whom we can rely, persons who let us know that they have concern about us, value, and love us. Bowlby (1969, 1973, & 1980) interpreted in his theory of attachment that this theory depends greatly on the availability and accessibility of social support. For example, Bowlby deems that children grow to be self-reliant, learn to be a support person for the others, and have a declined in the possibility of psychopathology in later life when social support has existed in their early life. In addition, the availability of social support reinforces the ability to endure and overcome frustrations and problem-solving challenges (Bowlby, 1980).

Evidence has demonstrated the abilities of social support in the psychosocial development of children early in their lives (Miller & Lefcourt, 1982). It is found that the rated responsibility and leadership of boys and girls at the age of sixteen was related to family interaction patterns. In addition, those adolescents showing the best leadership and responsibility described their parents as being more friendly, affectionate, and supportive than did adolescents low on these features (Bronfenbrenner, 1961). Later on and in 1976, Murphy and Moriarty concluded that the availability of family support enhance children's resilience in the face of stressful situations (Murphy and Moriarty, 1976). In addition, Sandier (1980) added a lot to the previous findings when he declared that there were major relationships between

stress and social support, on the one hand, and children's maladjustments, on the other.

Vaillant (1977) found in a longitudinal study (thirty year) of Harvard University male undergraduates that the children who lived in a supportive family environment were related with positive adjustment in adulthood and lack of psychological disturbances.

Eaton (1978) concluded that the rate of stressful life events is related to more psychiatric disorders among those who live by themselves or are unmarried compared to those living with other people or who are married.

The importance and the effects of social support attracted the attention of the researchers interested in how they could empirically present such effects within a certain population. They believed that one of the barriers to objective researches was the need to a reliable, wide-ranging, and suitable indicator for social support. Many studies had been conducted to determine the people who were considered confidants and acquaintances to study participants (Miller et. al., 1976).

Others had focused on the availability of helpful people in trying to cope with certain situations, family members, and even financial problems (Medalie, & Goldbourt, 1976).

Examples of instruments constructed to measure certain aspects of social supports had been available such as the scale constructed by Brim (1974) with 13 items which intended to measure value similarity of social support. Renne's Social Health Index (1974) was directed particularly toward multi-social support dimensions such as the individual's level of functioning in the community and yields measures of employability, marital satisfaction, community involvement, and sociability (Renne, 1974).

The most inclusive device for measuring social support is that developed by Henderson (1980), it consisted of a structured interview of fifty questions which assesses several aspects of social supports such as the perceived availability and sufficiency of people who can be counted on for help in problem solving and emotional support and; social integration, its accessibility and sufficiency (Hernderson, 1980).

The variety of instruments of social support is matched by the variety of conceptualizations relating to its components so Weiss in his index in1974 for social

supports had discussed six dimensions of social support: intimacy, social integration, nurturance, worth, alliance, and guidance. But the suitable operationalization of these dimensions has not yet happened (Weiss, 1974).

In spite of how social supports are conceptualized, they would appear to consist of two fundamental elements (Sarason et. al., 1983):

1- The perception that there is a sufficient number of available others to whom one can turn in times of need; and
2- Degree of satisfaction with the available support.

Depending on the person's personality, these two factors in social support may vary in their relation to one another. Some people may believe that just a large number of accessible assistants provide adequate possibilities of social support. Others may not agree and think that even one person is enough. Furthermore, degree of satisfaction with the support may be subjective to some personality characteristics such as self-esteem and a feeling of control over the surroundings. But current experiences may influence a person to regard the support available as satisfactory or no satisfactory (Sarason, 1983).

The Short Form Social Support Questionnaire (SSQ6) was developed by Sarason, Sarason B, Shearin, & Pierce (1987). It is a six-item version of the original 27-item SSQ version (Sarason, Levine, Basham, & Sarason B, (1983). This scale yields one quasi-structural measure (SSQ6-N; number of supports) and one global functional measure (SSQ6-S; satisfaction with support).

This scale is self-administered and should normally take no more than ten minutes to complete. Respondents need to write all the individuals known to them who provide the particular type of support described in that question. Up to nine individuals can be listed. The respondents have to rate their level of satisfaction with this type of support. In this scale two scores are to be obtained which is the number of supports from 0 (no supporting individuals identified) to 6 (up to six individuals identified, this is because no one from those repatriates put more than six persons as support.) and the level of satisfaction ranges from 1 (very dissatisfied) to 6 (very satisfied). For the number of

support and the degree of satisfaction the author has not found any study which categories the number of support and degree of satisfaction.

This scale shows satisfactory psychometric properties with high internal consistency for both the number and satisfaction subscales (alpha= 0.90 to 0.93), high test-retest reliability and single factor accounting for the majority of the variance in each subscales respectively. The SSQ6 provides a short and reliable measure of two aspects of social support. However, it does not attempt to distinguish between types of social support.

3.5.3: Brief COPE. (Appendix 11)

Studies of coping strategies in applied sciences regularly require minimizing time demands on participants. The trouble of response burden for the participant of a single study is aggravated more by the fact that usually most of the studies are intended to examine several hypotheses but with the same sample participants, a strategy that involves the use of several time-consuming processes. Such a study would get advantage from a brief single measure of coping which could assess a number of responses identified to be related to successful and unsuccessful ways of coping. Brief COPE presents such a brief type of an earlier published measure called the COPE inventory (Carver et. al., 1989), which proved to be helpful in health-related studies. The Brief COPE excludes two scales from the complete COPE, decreases others to two items for each scale, and then adds one scale. (Carver, 1997)

In the area of coping studies many researchers have decided to conduct their studies in more applied settings, which allow assessment of coping process with respect of psychological effective stresses with its great significance. In addition, these studies are prospective in design consisting of several measures for coping process and even the outcome variables (Carver, 1997). Researchers have regularly begun to comprise measures which allow assessment of a number of separate theories within the same sample. One of the main aims of this strategy is to build best use of the involvement of study participants. But there are however, disadvantages for these strategies, that for a repeated-measure design study including large numbers of measures in one study increases the response burden for the study participants. That is the total time and

effort needed by this type of study can be considerable. There are currently a number of well-known instruments to measure the coping strategies. These are some of the important measures until 1990;

- The Ways of Coping by Folkman & Lazarus (1985); and Lazarus & Folkman (1984);
- The Multidimensional Coping Inventory by Endler & parker (1990);
- The Coping Strategies Inventory by Tobin et al. (1989) and lastly;
- The COPE inventory by Carver et al. (1989).

These all measure both problem-focused coping responses and responses directed to aspects of the circumstances.

The researcher believes that using this scale (The Brief COPE) with the constructed questionnaire would reduce the burdens on the participants because the full COPE questionnaire consists of many scales.

Carver (1997) focused in developing his measure of Brief COPE on the COPE inventory by Carver et al. (1989). The COPE Inventory measure had been developed partly from the existing literature of coping in that time, partly from the Model of Coping by Lazarus and Folkman (1984); and in part from the Model of Behaviour Self-regulation by Carver and Scheier (1981, and 1990). The COPE inventory consisted of 15 scales, each scale with a precise theoretical focus. Several scales focus clearly on conceptually significant aspects of coping; some others had been included because earlier fact suggested the importance of those exacting aspects of coping (Carver, 1997).

The COPE inventory (Carver et al., 1989) has been applied in different health-related research. The existing literature suggests that many of the coping responses that the COPE inventory assesses are significant in the coping process and some are predictive of potential physiological effects. Denial and behavioural disengagement have both been found to be potential predictors of distress in a study of HIV-positive men (Antoni et al., 1991) and in another study of women who previously were diagnosed with breast cancer (Carver et al., 1993). Acceptance as a coping response was a prospective predictor of lower distress in the latter study, and also in a study of symptomatic HIV-positive men (Lutgendorf et al., 1997). With respect to physiological endpoints, Ironson

et al. (1994) found that denial and behavioural disengagement in response to a positive HIV diagnosis predicted greater disease progression a year later (Carver, 1997).

The complete COPE is an instrument which consists of 60 items and each scale from its 15 scales contains four items. The content of the item within each scale had significant redundancy. It was found that patient samples become impatient with completing the full COPE (Carver et al., 1993), partly because it was long and in part because of this redundancy. Participants' impatience caused Carver et al. (1993) to use only three items per scale. Brief COPE was created as an even briefer form and consisted of 14 scales, of two items each; two scales from the full measure were omitted from the brief form because they had not proven helpful in earlier work; three other scales were refocused a little, because they were proven to be problematical in previous study; one scale, which was not part of the original COPE, was added, because of evidence of the significance of this response (Carver, 1997). Data concerning the reliability and validity of the Brief COPE come from a sample of community citizens who were participating in a study of responses to a natural disaster, Hurricane Andrew (Carver, 1997).

Carver (1997) used two criteria to select two items for each scale: The first criterion was that there must have been a high loading on the relevant factor in the original factor analysis (Carver et al., 1989) and the second criterion, stemming from information gathered in their field experience with the full instrument over several years, was the item's clarity and ease of communication with nonstudent populations. Two procedures were used to assess the internal structure of the Brief COPE. First, an exploratory factor analysis on the item set using an oblique rotation to permit correlations among factors. This analysis yielded nine factors with values greater than 1.0, which accounted for 72.4% of the variance in responding. A second indicator of the internal structure of the Brief COPE came from reliability analysis including alpha reliabilities averaged across the three administrations of the COPE in the sample. These reliabilities all meet or exceeded the value of 0.50. Indeed, all exceeded 0.60 except for Venting, Denial, and Acceptance (Carver, 1997).

Cooper, Katona and Livingston reported for the first time in 2008 the psychometric specifications of Brief Cope's subscales. They conducted their study with the 125 family caregivers of people with Alzheimer's disease. The Internal consistency was computed (alpha) for subscales (emotion-focused scale= 0.72; problem-focused scale= 0.84; and dysfunctional strategy= 0.75), which is considered to be a good result.

For the reliability of the subscales a test-retest was conducted over a year and was found that there were no significant changes in burden scores among carers (r= 0.58 for emotion-focused; r= 0.72 for problem-focused; and r= 0.68 for dysfunctional; at $p<0.001$). Over two years, change in burden score was found to be correlated with change in problem-focused scale (r= 0.33); and dysfunctional scale (r= 0.32) at ($p<0.01$), this indicates sensitivity to change, but not with change on the emotion-focused scale. In other hand, the study indicated that change in emotion-focused coping correlated with change in problem-focused (r= 0.40); and dysfunctional coping (r= 0.26) at ($p<0.05$) (Cooper et al., 2008).

As previously stated, the Brief COPE consists of 14 dimensions, of two items each and each item is with four responses ranged from (1) indicates that the respondent usually does not do this at all; (2) usually does this a little bit; (3) usually does this a medium amount; and (4) usually does this a lot. These items were measured, scored, and rated on 3-level Likert rating scale (Polit & Hungler, 1999) of weak with cut-off point ranged (1-1.8) that indicates that the level of coping is weak; moderate with cut-off point ranged (1.9-2.9) that indicates that the level of coping is moderate; and good with cut-off point ranged (3-4) that indicates that the level of coping is good (Polit & Hungler, 1999).

3.5.4: POW Questionnaire. (Appendix 12)

The POW Questionnaire is an 8-item scale which was developed by Zeiss, Dickman, & Nicols (1985).

The questionnaire includes specific symptoms from the diagnostic criteria for PTSD as defined by DSM-III, with some simplification of phrasing and with some exceptions. In interviewing former POWs, Zeiss, Dickman, & Nicols (1985) have found it difficult to

consistently assess the existence of the three specific signs reflecting 'numbing of responsiveness or reduced involvement with external world'. Hence, the category was reduced to just one item on this questionnaire: 'Inability to feel strong emotions, especially those associated with intimacy and tenderness'. Similarly, because of the experience of the authors that veterans of this age group almost universally admit to a sleep disturbance and because of multiple possible causes for memory impairment in this age group, these items were omitted from group D of the DSM-III diagnostic criteria.

Even though this questionnaire had eliminated these items from the DSM-III criteria for diagnosis of PTSD, a conservative decision was made to hold to DSM-III criteria for diagnosis of PTSD in this sample. All respondents met Criterion A, with the existence of an identifiable stressor. To achieve a diagnosis of PTSD, the authors required that respondents also specify currently being troubled by one descriptor from Group B, being troubled by the only item remaining in Group C, and being troubled by two of the four remaining items in Group D.

The second measure was the severity of PTSD-related problems which was obtained by scoring responses for each of the eight items on the questionnaire on the three point scale, reflecting degree of current difficulty and ranging from '0' Not at all to '2' Troubled me a great deal. These eight scores were then summed to give a Sum of PTSD score which is used in many of the analyses that follow.

For the present study, and according to the previous criteria for reported PTSD it was found that 72 have met the above criteria for PTSD i.e. these participants had minimum score of four and maximum score of 16.

The author has not found any study which categorised the overall scores into severity categories. So the sum of eight scores for PTSD in this study were measured, scored, and rated on 3-level rating scale (Polit & Hungler, 1999); low with cut-off point ranged (4-7) that indicates that the level of PTSD is low; medium with cut-off point ranged (8-10) that indicates that the level of PTSD is medium; and high with cut-off point ranged (11-16) that indicates that the level of PTSD is high (Polit & Hungler, 1999).

The researcher found that all these scales were reliable, practical, brief and easily completed by the study population.

3.6: Pilot Study

A pilot study can be defined as a study or a project to investigate or to test the feasibility of methods and procedures in order to be applied on a larger scale and also to search for possible effects and association that could be worth following up in a subsequent larger study (Last, 2001; & Everitt, 2006).

3.6.1: Why are pilot studies conducted?

There are many reasons provided for achieving a pilot study. But the most important reasons for pilot study could be classified: 1- process; 2- resources; 3- management; and 4- scientific (Van Teijlingen et al., 2001; & Van Teijlingen & Hundley, 2001)

1- Process: This measures the feasibility of the steps that have to take place as part of the major study. Examples include determining recruitment rates, retention rates, etc.
2- Resources: This deals with measuring time and resources problems that could happen throughout the main study. The idea is to collect some pilot data on such things as the length of time to mail or fill out all the survey forms.
3- Management: This covers potential human and data optimization problems such as personnel and data management issues at participating centres.
4- Scientific: This deals with the assessment of treatment safety, determination of dose levels and response, and estimation of treatment effect and its variance.

So before starting the main study, a pilot study was carried out on fifteen IPOWs who gave earlier their consent to participate in the study. The pilot study participants were from different ages, duration of captivity, and time elapsed since release.

The demographic characteristics of each participant in the pilot study were determined after completing the questionnaire. (Table 3.1)

3.6.2: Pilot study for main study

A Pilot study for: Effectiveness of a psychosocial rehabilitation programme for Iraqi repatriated prisoners of Iran-Iraq war, 1980-1988. This Pilot study was conducted in October, 2009 to prepare for the main study which contained a psychosocial rehabilitation programme for recruited sample from Iraqi repatriated POWs of Iran-Iraq war, 1980-1988.

The pilot study aimed to ensure the clarity of the instrument structure, the subjects understanding of the data collection instruments, determine any required modifications of these; and estimate the average time consumed for the data collection for each subject.

Fifteen participants from Iraqi former prisoners of Iran-Iraq war, who were previously determined as being prisoners of war, took part in this study after giving their written consent and after having read the participant information sheet. Those participants had been accessed at the Iraqi Ministry of Human Rights which issued a letter of facilities to the researcher to achieve the main study. A snow ball sampling was chosen because there was no data base for those repatriates due to the USA invasion in 2003. All these data were destroyed as a result of that invasion.

3.6.2.1: Results

Table 3.1: Demographic characteristics of the pilot study participants

	Current age	Age at capture	Duration of captivity	Time elapsed	Monthly income	Level of education	Rank	Marital status
1	62	34	20	8	1,200,000	Bachelor	reserved	married
2	49	21	21	7	278,000	Primary	Recruit	single
3	58	31	21	6	240,000	Intermediate	Reserved	married
4	57	28	17	12	1,300,000	Bachelor	Officer	married
5	50	23	8	19	800,000	Secondary	Recruit	divorced
6	53	20	20	8	950,000	Intermediate	recruit	married
7	46	22	15	7	500,000	Primary	Reserved	married
8	45	18	20	7	750,000	Intermediate	Recruit	married
9	57	30	20	7	1,400,000	Bachelor	Public army	married
10	60	33	8	19	600,000	Bachelor	Officer	married
11	59	32	21	6	600,000	Bachelor	Reserved	married
12	44	16	20	8	400,000	Primary	Recruit	single
13	65	36	20	7	850,000	Secondary	Reserved	married
14	67	40	20	7	500,000	Bachelor	Officer	married
15	60	33	21	6	850,000	Secondary	Reserved	married

Table 3.1 shows the demographic characteristics of the sample allocated to the pilot study. The range of: current age is between 44 and 67; age at capture is between 16 and 40; duration of captivity is between 8 and 21; time elapsed since release is between 6 and 19; monthly income is between 240,000 and 1,400,000 Iraqi Dinar; level of education is between primary school and bachelor. For the rank most of them were Reserved (6) and Recruit (5) and other rank were (3) Officers and one Public army. For the marital status most of them were married (12); two single and one divorced.

Table 3.2: Distribution of the sample on the demographic characteristic intervals

Sample Demographic Characteristics					
Current Age			**Age at Capture**		
year	f	%	year	f	%
40-49	4	26.7%	≤19	2	13.3%
50-59	6	40.0%	20-29	5	33.3%
≥60	5	33.3%	30-39	7	46.7%
Total	**15**	**100%**	≥40	1	6.7%
			Total	**15**	**100%**
Duration of Captivity			**Time elapsed since release**		
Year	F	%	year	f	%
8-11	2	13.3%	6-10	12	80.0%
12-15	1	6.7%	11-15	1	6.7%
≥16	12	80.0%	≥16	2	13.3%
Total	**15**	**100%**	**Total**	**15**	**100**
Monthly income			**Level of Education**		
Iraqi Dinar	f	%	Degree	f	%
≤500,000	5	33.3%	Bachelor+ postgraduate	6	40.0%
510,000-million	7	46.7%	Diploma	0	0.0%
≥1,100,000	3	20.0%	Secondary	3	20.0%
Total	**15**	**100%**	Intermediate	3	20.0%
			Primary	3	20.0%
			Total	**15**	**100%**
Rank			**Marital status**		
Rank	**f**	**%**	Status	f	%
Officer	3	20.0%	Married	12	80.0%
Sub-officer	0	0.0%	Single	2	13.3%
Reserved	6	40.0%	Divorced	1	6.7%
Recruit	5	33.3%	**Total**	**15**	**100%**
Public army	1	6.7%			
Civilian	0	0.0%			
Total	**15**	**100%**			

The results of table 3-2 indicate that (40.0%) of the sample's current age is within the age group (50-59) years, and the next most frequent current age group is (≥60) years, (26.7%).

In regards to time spent in captivity (73.3%) of the studied group spent 20 years and more, (13.3%) spent between eight years and eleven years, while (13.4%) spent between 12 years and 19 years.

The table indicates also that for time elapsed since release (80%) of the studied subjects had been released between six years and ten years, (13%) of them had been released after 16 years and more.

Regarding the rank (40.0%) of the pilot study participants were Reserved and (33.3%) were Recruits, (20.0%) were Officers.

The results also shows that (40.0%) of the sample university graduates with bachelor degree, and (20.0%) of the studied sample were from secondary school; the same percentage from intermediate school and primary school.

For the marital status (80.0%) of those repatriates joined in pilot study are married, (13.3%) are single and (6.7%) are divorced.

Regarding the monthly income of those participants (46.7%) of them gain between 510,000 and one million Iraqi Dinar; (33.3%) of them with less than 500,000 Iraqi Dinar.

3.6.2.2: Descriptive analysis

Frequencies and percentages were determined to distribute the severity of Anxiety and Depression; and levels of PTSD.

Table 3.3: Distribution of the sample regarding the severity of Anxiety and depression.

Severity of the disorders										
Level	**No disorder**		**Mild**		**Moderate**		**Severe**		**Total**	
Disorder	f	%	f	%	f	%	f	%	f	%
Anxiety	6	40%	2	13.3%	5	33.3%	2	13.3%	15	100%
Depression	4	26.7%	4	26.7%	4	26.7%	3	20.0%	15	100%

Table 3.3 revealed that the highest percentage (33.3%) of the pilot study sample were inflicted with a moderate level of anxiety; (13.3%) of them were with mild and the other (13.3%) had severe anxiety.

In regard of depression (26.7%) of studied sample had mild depression, the same percentage with moderate, and (20.0%) had a severe level of depression.

Table 3.4: Distribution of the sample regarding the levels of PTSD.

Level	No PTSD		Low		Medium		High		Total	
Disorder	f	%	f	%	f	%	f	%	f	%
PTSD	4	26.7%	3	20.0%	6	40.0%	2	13.3%	15	100%

For PTSD, (40.0%) of the pilot study participants inflicted with a medium level of PTSD, (20.0%) low and (13.3%) had high level of PTSD.

Overall the sample had some level of anxiety, depression and PTSD with a small but important percentage having severe problems.

3.6.2.3: Relationship between demographic characteristics and variables

Correlation analysis was conducted to determine the association between demographic characteristics and the variables, table 3-5 and 3-6 show the relationships between demographic characteristics and PTSD, Anxiety, Depression, Social support and Total coping.

Table 3.5: Association between Demographic characteristics and PTSD, Anxiety, and Depression.

Association between Demographic characteristics and PTSD, Anxiety, and Depression						
Variables	PTSD		Anxiety		Depression	
Demographics	*r*	*sig*	*r*	*sig*	*r*	*sig*
Current age	0.225	0.420	0.005	0.986	-0.452	0.091
Age at capture	0.220	0.430	0.005	0.986	-0.412	0.127
Duration of captivity	0.493	0.062	-0.114	0.686	-0.479	0.071
Time elapsed since release	-0.485	0.067	0.158	0.578	0.353	0.196
Monthly income	-0.016	0.955	-0.213	O.446	0.326	0.236
of education Level	-0.080	0.778	0.065	0.817	0.249	0.371
Rank	0.302	0.098	-0.165	0.556	0.002	0.995
Marital status	0.443	0.098	-0.190	0.498	-0.287	0.300

The results of table 3.5 indicate that there is no effect of how age, duration of captivity or how long since he was released, how much his monthly income, what the level of

education he has, his rank when he was captured, and whether he is married or unmarried, on the level of some reported disorders such as PTSD, anxiety and depression.

Table 3.6: Relationship between Demographic characteristics and Social support (degree of satisfaction and number of support), and total coping.

Association between Demographic characteristics and Social support						
Variables	Satisfaction		Number of support		coping Total	
Demographics	*r*	*sig*	*r*	*sig*	*r*	*sig*
Current age (years)	0.638	0.011	0.277	0.318	-0.120	0.671
Age at capture (year)	0.617	0.014	0.277	0.318	-0.127	0.653
Duration of captivity (year)	-0.044	0.876	0.383	0.159	0.491	0.063
Time elapsed since release	0.056	0.842	-0.332	0.227	-0.597	0.019
Monthly income	-0.219	0.434	-0.219	0.433	0.422	0.117
Level of education	-0.530	0.042	-0.386	0.156	0.039	0.890
Rank	-0.479	0.071	0.078	0.781	0.117	0.679
Marital status	0.108	0.700	0.107	0.706	-0.245	0.378

Table 3.6 indicates that the older the repatriate at the time of capture the more satisfied he with the social support (r= 0.617, sig= 0.014). Other demographic characteristics have no relationship with social support and coping.

Table 3.7: Relationship between PTSD, Anxiety, Depression, Social support, and brief coping

Association between variables			
		r	***sig.***
PTSD-Anxiety		-0.641	0.010
PTSD-Depression		-0.642	0.010
PTSD-Social support	**Degree of satisfaction**	-0.001	0.723
	Number of support	0.546	0.035
PTSD-Total cope		0.315	0.253
Anxiety-Depression		0.548	0.035

Regarding the relationship between PTSD and other variables, table 3.7 revealed that the higher the level of reported PTSD the lower the levels of reported anxiety and

depression (r= -0.641, sig= 0.010) (r= -0.642, sig= 0.010) respectively, but the greater the number of supports (r= 0.546, sig= 0.035). For the relationship between reported anxiety and depression the study shows a significant moderate association (r= 0.548, sig= 0.035).

According to the results of the pilot study, it was obvious that the instrument structure was clear and understandable and was not difficult to be complete, in spite of wide differences in background and level of education of the subjects. The time consumed ranged between 25-35 minutes for the data collection for each subject and the instrument did not require any modifications. The same questionnaires used in the pilot study were used for the main study without any changes.

3.7: Data collection:

Before having embarked the process of data collection, it was necessary for the researcher to make all the arrangements required under the responsibility of the Iraqi Ministry of Higher Education and Scientific Research/ Scholarship and Cultural Relations Directorate (Appendix 13) who identified all the places where the researcher would be allowed to meet the participants and conduct the study: The participants' agreement had to be obtained before data collection. If any participant had literacy difficulties then the researcher read the items carefully to him and filled in his responses.

A number of measures were put in place to protect the individuals who participated in the study. The study would not begin until full ethical approval had been given by Liverpool John Moores university research ethics committee (Appendix 14):

- Any distressed participants had to be referred to the Psychiatric Centre/ Medical City in Baghdad.
- Participants had to fill a consent form in order to participate in the study.
- Participants had the right to withdraw from the recruitment even they had given their consent previously.
- Confidentiality was assured, so no names would be revealed in the write up of the study.

- All data were carefully stored and never shared with third parties in raw form.

3.7.1: Phase I:

A base-line set of data was collected from all participants (n= 92) in the study. This comprised of:

(a) Levels of depression and anxiety, assessed using Hospital Anxiety & Depression scale (HADs).

(b) PTSD assessed using POW Questionnaire.

(c) Social support was assessed using Short Form Social Support Questionnaire (SSQ6).

(d) Levels of coping were assessed using Brief COPE.

The intervention began after baseline data collection.

3.7.2: Phase II:

Half way through the programme of group psychotherapy (week 6) all participants (92) again completed the scales listed in phase I (above).

3.7.3: Phase III:

Immediately following the 12 weeks intervention using psychotherapy, only 88 participants completed the same scales because five participants from the whole group of 92 dropped (two participants from Intervention group and other two from Control group) leaving 47 participants in intervention group and 41 participants in control group.

Table 3.8: Demographic characteristics of participants dropped out in Phase three

Demographic characteristics of participants dropped in Phase three							
	Current age	Age at capture	Duration of captivity	Time elapsed	Monthly income	Level of education	Rank
Control group							
1	57	28	17	12	1,300,000	college	officer
2	53	25	21	7	600,000	college	office
Intervention group							
1	54	25	20	8	500,000	college	officer
2	62	34	20	8	1,300,000	college	officer

3.7.4: Phase IV:

Nine months after the end of the intervention, 79 participants completed the scales because another eight participants dropped out (Five participants from Intervention group and three participants from Control group) leaving 42 participants in intervention group and 37 participants in control group. Figure 3.1 shows all the steps of recruitment and dropping.

Table 3.9: Demographic characteristics of participants dropped in Phase four

Demographic characteristics of participants dropped in Phase three							
	Current age	Age at capture	Duration of captivity	Time elapsed	Monthly income	Level of education	Rank
Control group							
1	54	25	17	13	800,000	College	officer
2	64	37	19	7	300,000	Secondary	reserved
3	59	31	14	14	1,300,000	college	officer
4	70	42	20	8	750,000	secondary	reserved
Intervention group							
1	56	27	17	17	800,000	primary	reserved
2	54	28	20	7	350,000	College	civilian
3	45	17	8	20	600,000	college	officer
4	56	27	17	13	450,000	Diploma	reserved
5	60	31	17	12	400,000	primary	recruit

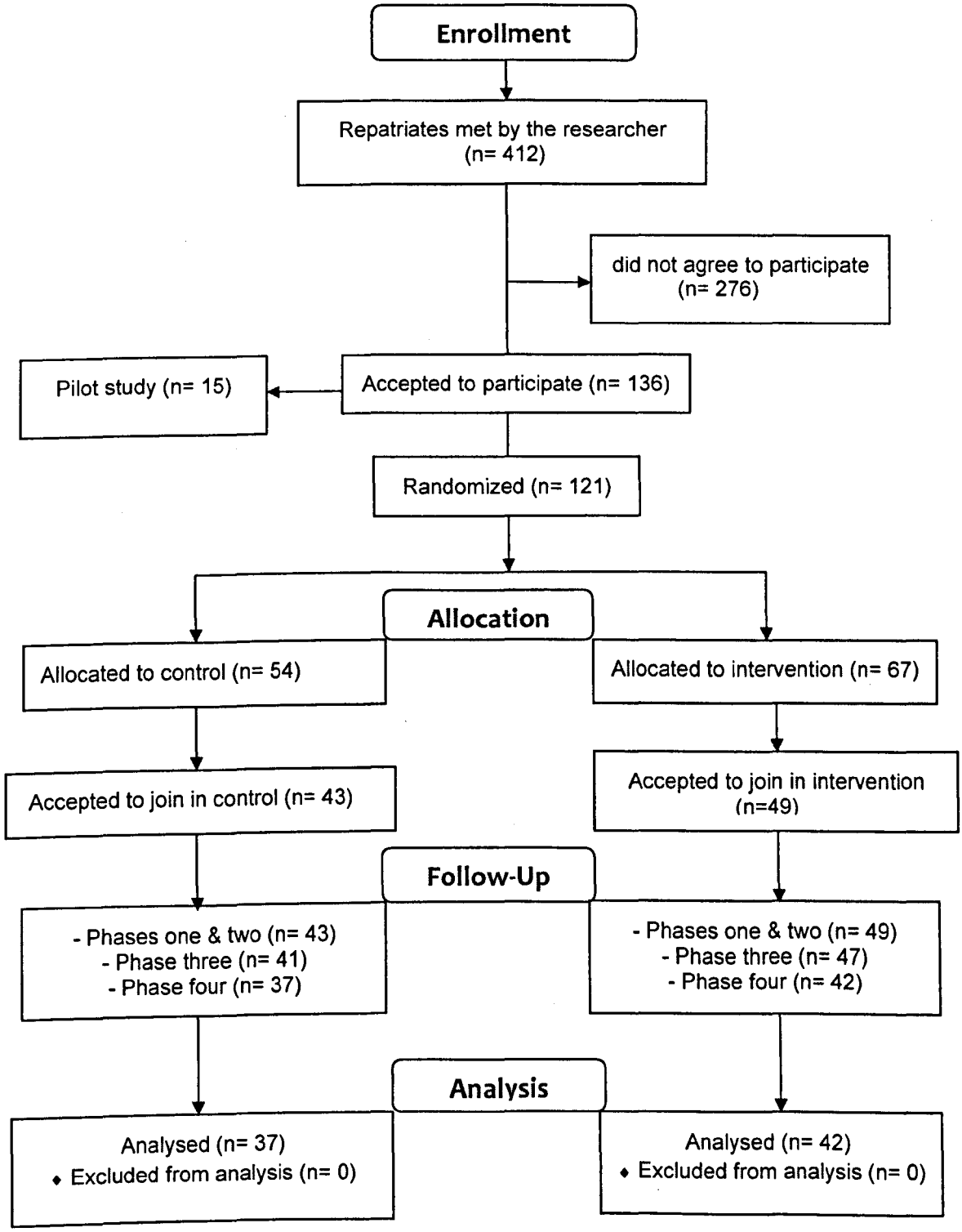

Figure 3.1: The process and steps of recruitment and dropping from the sample.

3.8: Data analysis:

The following statistical procedures were used in analysis the data of the study:

3.8.1: Descriptive data analysis

Descriptive data analysis was used to describe the specifications of the sample recruited for the study. This included the frequencies and percentages for the:

1- Baseline Phase (Phase one) regarding Demographic characteristics: Current age, age at capture, duration of captivity, time elapsed since release, monthly income, level of education, and rank.

2- Baseline for the levels of reported PTSD, Anxiety, Depression, Social support, and Coping dimensions.

3- Distribution of the levels of reported PTSD, Anxiety, Depression, Social support, and Coping dimension on the demographic characteristics subcategories.

4- Distribution of the levels of reported PTSD, anxiety, depression, social support and coping on the control and intervention groups for four Phases.

3.8.2: Inferential data analysis

Inferential data analysis was performed to draw conclusions and to make predictions about the whole population of Iraqi POWs based on the information obtained from the sample of study. This approach was performed through the application of the following:

1- Differences between control group and intervention group by using Independent *t*-test:

A- For the demographic characteristics: current age, age at capture, duration of captivity, time elapsed since release, and monthly income. And for level of education and rank Mann-Whitney U was used to show the differences between the two characteristics.

B- For reported PTSD, anxiety, depression, social support, and coping.

2- Logistic regression was applied to determine the differences between those who dropped from the study before Phase four and those who completed Phase four.

3- Relationships between variables were determined by using:

A- Correlation coefficients to determine the relationship between: demographic characteristics and reported PTSD, anxiety, depression, social support, and coping; and within coping strategies.

B- Partial correlation coefficients were applied to determine the relationship between: PTSD and depression after controlling reported anxiety; PTSD and anxiety after controlling reported depression; depression and anxiety after controlling reported PTSD.

4- **Repeated Measures ANOVA Tests** were applied to determine the effect of psychosocial rehabilitation programme for Iraqi POWs: Main time effect, between group's effect, and Groups Interaction overtime for PTSD, anxiety, and depression.

3.9: The intervention programme

In order to meet the aims of this study, a psychotherapy programme was applied for those POWs using the Dwairy (1997) approach of psychotherapy in dealing with intervention group. The psychotherapy programme of the Dwairy Model (1997) is a "Bio-psychosocial Model of metaphor Therapy with Holistic Culture".

Pedersen (2006) argued that the Dwairy (1997) model works effectively within the Islamic community. Because the religion not only plays a major role in the mental health of Arab and Muslims but also it has the great effects on culture, morals, habits, customs, traditions, commitments and even their behaviours. Hence this model has been selected for use with the sample.

Before explaining the Dwairy model in more detail it is important to have an idea about the religion and spirituality and their wide effects on mental health and on psychotherapy related to different mental disorders. Then, the study specifies the Muslims, their rituals, commitments, behaviour with psychotherapy.

3.9.1: Religion, Spirituality and Mental health

Religion is a significant component of culture or the way of life of communities. In addition, man's belief and faith are as old as humankind itself. Clerics and physicians were often the same persons in different cultures and civilizations (Bhugra 1996).

The association between religion and mental health has been under debate for centuries, the idea and approach of ethical intervention of mental illnesses was really initiated by religious persons and still a common practice (Christopher et al., 2010; & Verhagen et al., 2010).

For a substantial time, psychologists and psychiatrists have basically ignored this significant field of human understanding. But over the last few years a significant number of studies have been seen in the psychiatric and psychological literature regarding religion and mental health (Dein et al., 1998).

Even though studies concerning the function of religious beliefs in mental wellbeing are quite new, the significance of individuals' religiousness and spirituality for their health and safety has been broadly acclaimed based on hundreds of available studies (Al-Naaimi & Younis, 2010).

The WHO defines quality of life as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" so according to this definition the spiritual element became part of WHO Member States' strategies for health in 1984. (Al-Naaimi & Younis, 2010). From the time when the World Health Organization established the WHO-QoL (World health organization Quality of Life) test two decades ago, many amendments have been made to adjust it for different cultures. A significant amendment, which was approved by WHO research group, was the implementation of religious and spiritual elements into the original test. This was termed SRPB (Spirituality, Religiousness and Personal Beliefs).

The spiritual aspect of QoL makes a significant and characteristic contribution to QoL assessment in health and should be assessed regularly in health care populations (Younis et al., 2012). SRPB is relevant to health-related QoL and consensually important aspects should be included in broad health care assessments. Their inclusion allows a more holistic assessment and improves the case for a bio-psycho-socio-spiritual model of health (Younis, 2003).

Belief systems in the Arab world are derived from Islamic and non-Islamic roots, where Arab countries share similar values in which Islam is the prevailing religion along with

some secular and spiritual personal beliefs distributed adopted by different populations (Pridmore & Pasha, 2004).

The Iraqi community was subjected to frequent regional and national wars and conflicts which are expected to have unfavourable effects on its population quality of life. However, studies that examine the religious and spiritual dimension of life quality in Iraq are not available yet, despite a scrutinized search of online medical literature libraries (Al-Naaimi & Younis, 2010).

Significant facts for religion's important influences on mental and psychological health come from different studies that have effectively used religious interventions to treat psychological and emotional disorders. Propst et al. (1992) compared the effectiveness of two kinds of cognitive-behaviour psychotherapy in the intervention of patients suffered from depression, one type was a standard intervention protocol of cognitive-behavioural therapy; the other type included religious content based on therapy practices used by Christian clergy, religious Cognitive-Behavioural Therapy (CBT). In Propst's study Religious CBT offered Christian motivations for reforming thought processes, used religious opinions to respond to irrational thoughts, and used religious imagery as part of the behaviour element. A sample of forty religious patients was randomly allocated to either group. Results indicated that religious CBT group responded considerably much faster than did the secular CBT group.

Another study conducted by Azhart et al. (1994) in which he assessed the effectiveness of religious intervention in the treatment of Muslim patients suffered from anxiety disorder. A sample of 62 patients was randomly allocated to intervention or control groups. Both groups received medication and supportive psychotherapy for anxiety. Additionally however, one group received a religious intervention the same as the religious CBT illustrated in Propst et al. (1992) study but this time on Islamic basis. The religious intervention group scored considerably, after three months, lower on anxiety tests than did the group without religious intervention. So, it was concluded, that religious therapy appears to be more effective than standard approaches in dealing with religious clients (Al-Radi 1993; Johnson et al, 1994; Pecheur & Edwards 1984; & Propst, 1980).

Furthermore, a more complicated analysis can indicate a significant association between religious approaches and mental health results over the life course (Ingersoll-Dayton et al., 2002); on depressive appearance (Schnittker, 2001); anxiety dues to loved person's death (Pressman, Lyons et al., 1992), due to general anxiety disorders (Koenig et al., 1993), and general distress (Ross, 1990). In a number of the previous studies, those who consider the religion is a very effective and orienting factor in their lives' course show the most constructive association with mental health outcomes. In those who are at the distant end of the religious field are believed to be the most vulnerable to suffering, and for those who stick to a more moderate practice or belief method show better performance. The degree of association between mental health and religiosity has not been recognized, although this makes perceptive sense when interpreting the interaction from a developmental viewpoint throughout the lifespan (Miller & Kelley, 2005).

According to what has been mentioned the author found it is very important to include the religion and spirituality in the psychosocial programme designated for this study.

3.9.2: Islam, Muslims, and Mental Health

Islam, as a religion, provides firm regulations and strict laws, based on Qur'an, consistent with which social, economic, political, personal and familial life must be guided (Dwairy, 2006). In addition, it is a social religion that proposes a balanced order in society (Hourani, 1991). Fundamental to the teachings of Islam is finding lawful habits to please human instincts and desires. It is different to Christianity, which tends to pay no attention to or deny human sexuality, Islam particularly deals with sexual matters and suggests legal ways of sexual control of women and provides sexual vents for men (Dwairy, 2006).

Islam gives emphasis to the role of reason and education in Muslim's lives (Al-Jabiri, 1991). Muslim and non-Muslim Arabic culture is strongly influenced by the heritage and history of Islam, from its start in the seventh century to the revival era in the nineteenth and twentieth century (Al-Jabiri, 2002a).

Al-Jabiri (2002b) argued that the Arab/ Muslim thoughts are likely to be having past-oriented guidance, influenced by Islamic teachings and experiences that guide Muslims to seek for answers through "measurement" in the Islamic heritage (Measurement is the basic epistemological instrument that Islam recommends to people so as to find their way in life). Unfortunately, depending on the past to find solutions to present and future problems has become counterproductive in the Arab/ Muslim principles and thoughts. Rather than applying the past collective experience to comprehend the present and to fix a modernized plan for the future, several relate merely to the past, aiming to revive it in its previous shape, and so reject the new developed fact.

Dwairy (2006) argued in his model of psychotherapy that the most important opinion that may be worked to make a firmly adherent client rethink his approaches and attitudes is the importance of "reason" in Islam. Therefore the therapist may remind a client of the Islamic teachings to use "reason". In addition, in psychological expressions, "activating the Reason" means activating the client's ego to discover compromises and realistic answers, and knowing that the "measurement" is the basic epistemological technique to reality for the orthodox Muslim. The therapist may use some Qur'an verses and proverbs that recommend a new and different attitude to the problem in order to assist the client review and rethink his attitude. Furthermore, psychotherapists and counsellors who work with clients of Islam background should keep in mind that Islam forbids rejection of Islamic faith. In addition, those therapists should therefore avoid any conflict with Islam and try to support their clients find new answers and ways to modification within Islamic teachings. Fortunately, as a result of the long history of Islam debate, one can find within this heritage many Qur'an verses and proverbs that can be used to enable therapeutic modification. And counsellors who try to reject the family and focus, as an alternative, on personal concerns may miss the point and make the client, who is completely involved in the family, feel misunderstood. Thus, evaluation of the degree of despotism of the client and the family is one of the major responsibilities of the counsellor. Critical attitudes toward the obedience of the client to the authority of the family should be avoided. In addition, counsellors are encouraged to try to appreciate the reasoning of this

obedience from within and to help the client find support and better unions within the family (Dwairy, 2006).

According to the reality that "Measurement" is the basic epistemological instrument that Islam recommends to people so as to find their way in life, and in agreement with the fact that Arabs/ Muslims normally use inherited expressions and proverbs in their everyday life course, counsellors and therapists may use this rational mechanism in therapy. Metaphor therapy is maybe the best appropriate to "Measurement" because in metaphor therapy the client truly gains awareness into his problem by virtue of understanding the metaphor (Dwairy, 2006).

Predestination is one of the fundamental beliefs in Islam. The destiny of an individual, for good or bad, is determined by God, and nothing that God has not determined in advance will occur to anyone in future. The belief in predestination has been found to help clients accept, endure, and cope with stress, threat, and loss. Focusing on God's good intentions, therapists may encourage a client to endure stress, stay hopeful and optimistic, and avoid pessimism. Furthermore, therapists and counsellors who deal with reactions to death may use the religious beliefs of their clients to help them reframe the death and give it a significance that assists them copes with the loss (Dwairy, 2006).

3.9.3: Metaphors and Imagination in the Arab/ Muslim Culture

Various Eastern societies, including Arabs/ Muslims, think that imagination is an important element of their everyday life and instead of considering hallucinations and delusions as disorders, as people in the West do, they believe that they are guidance to the true reality (Al-Issa, 1995). Moreover, decisive conclusions in individuals' lives are affected by the significance given to visions and dreams, and individuals who are familiar with these experiences and meanings are considered wise, and their advice and opinion are sought by others (Dwairy, 1997a).

Arabic language is very metaphoric (Hourani, 1983, 1991). Dwairy (2006) concluded that knowing through measurement is actually the employment of an indirect and metaphoric technique of thinking. Instead of thinking directly about the actual

problem in its present circumstance, the Muslim is directed to assess and measure the current new problem or situation by a former alike one "stands as a metaphor" that had been addressed or answered by the Qur'an. Based on this measurement, the Muslim applies the old answer or solution to the new problem and acts accordingly.

Due to the fundamental role of imagination and metaphors in the lives of Arab/ Muslim people, they are expected to explain their experience in imaginative and metaphoric language. So instead of saying, for example: *others cannot recognize my own suffering*; Arab/Muslim people may point out a proverb such as: *the one whose hand is in water is not like the one whose hand is in fire* (Dwairy, 2006).

3.9.4: Dwairy's bio-psychosocial model of Metaphor therapy

Dwairy (2006) argued that metaphors are employed and recognized in a diversity of methods in psychotherapy. In relation to psychoanalysis, metaphors and images are considered codes or symbols that need to be interpreted and understood in order to achieve insights and self-awareness. Otherwise, the individual may consider metaphorical language to be another valid mode of communication, which influences the mentality and the body. As such, metaphor may be used in therapy to provoke change in the individuals' experiences, without directly bringing unconscious prohibited contents to the consciousness.

Dwairy (1997) explains three pathways, in his bio-psychosocial model of metaphor therapy, that connect the positivistic biological, psychological, and social levels of experience with the metaphoric and imaginative level. The Dwairy model hypothesizes that psychological experience such as stress, anger, anxiety, sadness, or happiness is interpreted through an unconscious course of symbolization into images or metaphors. Such process of symbolization is affected by the personal experiences and as well as by the collective experiences of the individual, so that many culturally specific sayings, maxims, proverbs, idioms, or myths turn out to be integrated in the personal images and metaphors.

The Dwairy model of psychotherapy supposes a two-way communication, between the bio-psychosocial experience and the metaphor level of experience. Therefore, depressive experience creates depressive images and metaphors and so on.

The Dwairy model of psychotherapy may describe a diversity of therapeutic techniques that employ imagination and metaphors:

Kopp (1995) used psychotherapy by employing a metaphor therapy which consists of three phases:

1. First, he asks the client to explain the metaphor that explains the problem in solid expressions;
2. Throughout the second phase he asks the client to modify the metaphor in a way that it describes the solution of the problem and lastly;
3. The client is asked what he has learned from the metaphoric solution and what the useful implications are that could be used to cope with the problematic situations. Dwairy (1997) indicates that the proposed model describes other therapeutic techniques such as guided imagery therapy, art therapy, and biblio-therapy. In addition, in all these therapies the client processes the problem and discovers solutions or new coping strategies in the metaphoric level, which influence the bio-psychosocial experience through the three pathways that connect the two levels of experience.

In the current study the Diwary model was adapted by the researcher by introduction of the following into the programme:

- Because the Muslims believe in imagination as guidance in everyday life the researcher found that it was important to encourage the participants to imagine how the stressful situations of the days before became a kind of memory today. So it can be useful during stressful situations to think that these problems would be a part of the past tomorrow.
- By asking participants to think of images of the problems and how to create new images to replace the problematical ones, i.e. How participants might learn from the metaphor as Kop indicates.

- The researcher reminded the participants to always keep in mind that most of the everyday present difficulties were much easier than those they faced during their captivity.
- It was important to remind the participants that the most effective remedy during the ordeals was to remember the almighty of God who could help them by keeping remember him and pray to help them.

3.9.5: Observations indicating that IRPOWs are adherent to spiritual commitments

From personal observations the author identified the following evidence that suggests that IROPWs developed strong spiritual commitments that would therefore need to be addressed in any intervention programme:

- In the moment of capture, most Iraqi POWs were in an extreme shock. In that moment, controversial understandings and beliefs were created within the Iraqi POWs, some of them had a profound belief that they were saved from real death and were away from the danger of the front and this was their fate or destiny, which was determined by the supreme power of God; the other POWs believed that the worst situation for the soldier to be faced during the war was to be captured and held as a POW in the hand of their enemy because they recognized that other bad situations would face them during captivity. They considered these situations as worse than the fighting itself.
- Most of those who believed that their capture was a kind of fate began to pray to thank God for the salvation from death and let them live longer in order to have the time to pray and thank him.
- At the time of capture, most Iraqi POWs were not used to practising their religious commitments such as praying.
- The overall motive for the joining in the war was patriotism and loyalty to own country.
- The more years passed in captivity the more Iraqi POWs began to feel that they need to pray and to be close to God in order to help them cope with the problematical circumstances of captivity and to help them tolerate the long difficulties.

- After more than 15 years in captivity most Iraqi POWs actively practised their religious commitments such as praying, and reading the Holy book Qur'an continuously.
- A high percentage of them kept the Qur'an by rote whereas prior to captivity this was considered too difficult a target for most Muslims.
- According to the uniqueness, difficulty, and rarity of Iraqi POWs' experience this could be explained: as they were used to saying that there was no enough time be left from their lives so it was important to adhere to Islamic principles by which they would be rescued from this situation; if they had not won the life, it would be better to win God's satisfaction which would let them enter paradise; and they were hopeless and unsatisfactory from the political actions from both sides regarding to any efforts to end their miserable life in captivity.
- It was normal to hear many verses from Qur'an all times and at any occasion, whether it was bad or happy occasions.
- They believed that everything was done by the almighty and the will of God.
- So it was the most comfortable time for those who had the faith in God to help them to repeat many time several and certain verses in different ordeals and to get rid of bad feelings.

3.9.6: Outlines of the intervention programme

The psychosocial programme developed consists of stress management and coping strategies in 12 sessions, each lasting an hour. Every group attended one session a week. The Intervention group was divided in to ten small groups; every five participants were allocated to each small group. So the intervention group had ten small groups with two groups attending on the same day but at different times.

The programme is derived from a range of different resources from different authors: Lazarus and Folkman (1984); Folkman (1984); Weiten and Lloyds (2006); and National Victim Assistance academy, U.S. Department of Justice. In addition, the metaphorical language and approach of the Diwary model was used throughout the programme. Finally the researcher added to everyday sessions insights based on his own

experience in captivity; these related to religious commitments, beliefs, and thoughts. Given the researcher's observations on the spirituality of IRPOWs the researcher was keen to choose words which were related to or close to the verses cited in the Qur'an, from Hadith directives, and proverbs.

During and after the sessions of the programme the researcher had received many calls from other Iraqi POWs asking to attend these sessions. Others suggested organizing new groups or new programme as result of what they had heard from their friends.

3.9.6.1: First session:

- This was for the researcher to get acquainted with each participant and also for participants of each group to get know each other.
- Overview of the aims of the programme and what would happen in it.
- Definition of stress, symptoms, and identification of stress resources in life.
- Exploring each participant's life stress resources.
- Most of participants within different groups commented in their own words regarding the programme that nothing would help them out of the will of God and they had the absolute trust in him to get rid of their daily problems and difficulties. Furthermore, they described how they could lessen some of the burdens they faced in their lives by being closer to God by praying and mediating.

3.9.6.2: Second session:

- How to keep away from unnecessary sources of stress in one's life:
  - Examples of some sources of stress and how to avoid them.
  - A person needs to know his limits and keeps to them so as to avoid any overload of responsibilities, which may cause an avoidable stress.
  - Keep away from people who cause stress for you and avoid any unnecessary relationships.
  - Try to change or control your environment, for example, if the checkpoint or the traffic make you more stressful take another route even it is longer.

- Avoid participating in discussion which may cover a stressful topic to you.
- Schedule your daily responsibilities if you have too much to do. Achieve the most necessary and try to drop or eliminate those that are unnecessary.
- Examples from participants on how they deal with unnecessary sources in their life.

3.9.6.3: Third session:

- How to change the situations which stress you if you cannot avoid them:

- Try to express your real feelings if someone bothers you in an open and respectful way. If you do not do that resentment will be produced and the stressful situation will remain.
- Poor management of time may cause a lot of stressful situations. So having many time-limited tasks can put you under more stress.
- Do your best to anticipate or prevent problems by being more assertive. So when you have got important work to do tell your friend that you haven't enough time to stay more.

3.9.6.4: Forth session:

- How to become accustomed (adapt) to the stressor if you cannot change it:

- Try reframing the problem which may cause stress to you. Look to the stressful situations from a more positive viewpoint. So instead of getting angry from long waiting behind checkpoints, look at them as preventive procedures to protect our lives from potential threats.
- To be perfect in everything is considered a major source of stress. So try to set reasonable and acceptable standards not just for yourself but for others.
- Look to the positive things in your life when the stress tries to knock you down. Take time to focus on all things you value in your life including positive qualities and achievements.

3.9.6.5: Fifth session:

- Accept the things that you cannot alter

- You cannot avoid some sources of stress in your life, so you cannot prevent or try to change the stressor caused by the death of a close one or a serious illness. In such situation, the best method to cope with such stress is to accept these situations as they are. Sometimes the acceptance may be difficult but it is much better than running against a situation you cannot change.
- Some other's behaviours cannot be controlled, so do not try to control such uncontrollable behaviours because you will add more stress. It is better to focus on the situations you can control such as how you can react positively to problems.
- If you face big challenges in your life, try to view them as an opportunity to enhance your personal abilities. So try to reflect on your poor choices which contributed to stressful situations by learning from your mistakes.
- Try to accept the fact that you live in an imperfect world. So try to forgive people's mistakes and let go of rage and resentments and free yourself from negative thoughts.

3.9.6.6: Sixth session:

- Try to give time for relaxation and fun. In this way you can lessen the stress in your life by refreshing yourself. Make regular time to relax and to make fun:

- Nurturing oneself is not a luxury but a necessary thing for life.
- Be away from the hustle and bustle of your life and take care of your own needs.
- Schedule the time for your relaxation and do not let other commitments hinder this schedule because this is your time to have a break from other responsibilities.
- Try to spend more time with positive friends and relatives who may enhance your life because strong social supports will buffer you from the negative effects of stressful situations.
- Try to make time for leisure activities which provide you with joyfulness.

- Try to keep the sense of humour because the act of humour and laughing give the body resources to fight stress in many ways.

3.9.6.7: Seventh session:

- Relieve your stress by relaxation practices and mediation. People can control or eliminate their stress levels by using relaxation techniques and mediation regularly. These techniques enhance the body's relaxation response which gives oneself a state of restfulness against the stress response.

- Examples of relaxation practices.
- Examples of Meditation.
- Participants' experiences in this field.

3.9.6.8: Eighth session:

- How to adopt a healthier daily life:

- Have a healthier diet: healthy bodies are well-prepared to cope with stressful situations. So be careful in choosing your food that is nutritious and well-balanced to help keep your daily energy optimal and also to keep your mind clear with. Try to regularly take more fruits and vegetables.
- Try to decrease the intake of caffeine-rich drinks or sugar snacks in your diet. You will feel better and sleep better without these kinds of foods and drinks.
- Try to prevent taking alcohol, drugs and even cigarettes. Temporary relief from stress may happen by having alcohol or drugs but in the longer term they increase stress. Try to deal with the problems that cause stress for you with a clear mind and do not avoid the matter at hand.
- Take enough sleep for your body and mind, which need rest after a long tiring day. Sleep refreshes the mind and body. To be tired will increase your stress by causing irrational thinking when dealing with problems.
- Regular exercise and physical activity play a major task in reducing the effects of stress, so make a 30-minute time of exercise, for minimum of three days a week.

3.9.6.9: Ninth session:

- Try to interact socially with other people who are considered close to you and maintain these relationships with them:

- The importance of social relationships to people in reducing the effects of their stress.
- How interpersonal relationships protect people from the possible pathogenic effects of stressful events
- Try to maintain interpersonal relationships which support you in difficult times.
- Try to ask for advice of others who you can trust to help you when dealing with problems.

3.9.6.10: Tenth session:

- Assessment of previous sessions:

- Listening to each participant's experiences and progress.
- Asking each group about what they have achieved in the 12-week period of the programme.
- Asking the groups their opinion about the whole programme sessions.
- And lastly, the researcher handed each participant a leaflet of the programme.

CHAPTER FOUR

RESULTS

4- Results

Ninety two participants were selected to take part in the study. All the participants were male as women were only recruited into military health and medical services. Hence, there were no female POWs. The 92 participants were randomly allocated into one of two groups. The 'intervention group' received a 12-week psychosocial rehabilitation programme, which consisted of stress management and coping strategies. The Intervention group was divided into 10 small groups and each one of these small groups consisted of no more than five participants. The intervention comprised of one hour sessions, at an interval of one session a week. The second group acted as a 'control group' and received no intervention.

Throughout this chapter, the technique of presentation of data analysis for IRPOWS will be reported. The results of such analysis will be prearranged according to the objectives of the study:

4.1: Descriptive analysis

This section hopes to demonstrate the sample description which includes the frequencies and percentage of demographic characteristics; distribution of levels of reported PTSD, anxiety, depression, social support and coping on the baseline sample.

4.2: Inferential analysis at Phase one

This section hopes to show the comparison between the control group and the intervention group at Phase one (baseline) before starting the psychosocial programme for the intervention group.

4.3: Assessing differences in dropout group

This analysis hopes to assess the differences between the dropout group which dropped before completing Phase four and the group which completed Phase four.

4.4: Assessing the intervention

This analysis hopes to assess the effectiveness of the intervention for those who underwent a rehabilitation programme.

4.1: Descriptive analysis

4.1.1: Sample demographics Description

Most of the participants of this study are middle aged at the time of recruitment in 2009. Table 4.1 indicates that the age ranged from 40 years to more than 60 years. The highest percentage is located in the age group 50-59 year, which is 48.8%. In regards to the age at capture the results of table 4.1 indicate that the participants of the study were generally young with an age range of less than 20 years to more than 40 years. 74% of the participants were aged between 20 to 39 years, with mean= 27.4 year, SD= 6.9.

Regarding the period of time the IPOWs had spent in captivity the study indicates that the period ranges from 8-21 year with mean= 16.6, SD= 4.9. 68.5% of them spent between 16 and 21 years in captivity (table 4.1).

With regard to the time elapsed since release from captivity and return to homeland, the study revealed that the time ranged from 6-20 years and about 60% of the sample ranged 6-10 years (table 4.1). This time is calculated from the year of release until the time of recruitment.

The study indicates that about 83.7% have a monthly income of one million Iraqi dinars or less which equal five hundreds British pounds. Just 16.3% have a monthly income of more than one million Iraqi dinars (table 4.1). Not all these incomes are considered a good standard of living even in Iraq. This is the first study, which has disclosed the monthly income for Iraqi repatriated POWs.

Regarding the levels of education repatriates had before their capture the study indicates (table 4.1) that 45.7% have 14 years and more of education which consists of six years of primary school and another six years of intermediate school (three years) and secondary school (three years). After secondary school there are two years for a Diploma and a minimum of four years for a bachelor degree. A Masters degree requires two years and Doctorate degree three years. 28.3% have primary school (six

years); 17.4% have intermediate school (nine years); and 8.7% have secondary school (12 years).

For the rank of the participants of this study table, 3.1 and 4.6 shows that 33.7% of the sample were from the Reserved; 27.2% were officers; 19.6% were Recruit; 13.0% were from Public army; and 3.3% is the same percentage of the Sub-officer and Civilians.

Table 4.1: Demographic Characteristics of IRPOWs at Phase one

Sample Demographic Characteristics					
Current Age			**Age at Capture**		
year	f	%	year	f	%
40-49	22	23.9%	≤19	14	15.3%
50-59	45	48.8%	20-29	40	43.5%
≥60	25	27.3%	30-39	34	36.8%
Total	**92**	**100%**	≥40	4	4.4%
			Total	**92**	**100%**
Duration of Captivity			**Time elapsed since release**		
Year	F	%	year	f	%
8-11	21	22.8%	6-10	55	59.8
12-15	8	8.7%	11-15	15	16.3
≥16	63	68.5%	≥16	22	23.9
Total	**92**	**100%**	**Total**	**92**	**100**
Monthly income			**Level of Education**		
Iraqi Dinar	f	%	Degree	f	%
≤500,000	42	45.6%	Bachelor+ postgraduate	34	37.0%
510,000-million	35	38.1%	Diploma	8	8.7%
≥1,100,000	15	16.3%	Secondary	8	8.7%
Total	**92**	**100%**	Intermediate	16	17.4%
			Primary	26	28.3%
			Total	**92**	**100%**
Rank			**Marital status**		
Rank	f	%	Status	f	%
Officer	25	27.2%	**Married**	**92**	**100%**
Sub-officer	3	3.3%			
Reserved	31	33.7%			
Recruit	18	19.6%			
Public army	12	13.0%			
Civilian	3	3.3%			
Total	92	**100%**			

4.1.2: Distribution of levels of reported PTSD, anxiety, depression, social support and coping on the baseline sample (Phase one).

4.1.2.1: Distribution of levels of reported PTSD

The study indicates that 21.7% (n= 20) have no PTSD; and 78.3% (n= 72) have different levels of reported PTSD; 61.9% (n= 57) have low and medium levels; and only 16.4% (n= 15) have a high level of reported PTSD (table 4.2).

Table 4.2: Distribution of the sample regarding to the levels of reported PTSD

PTSD		No PTSD		PTSD Levels							
				Low		Medium		High		Total	
	No.	f	%	f	%	f	%	f	%	f	%
	92	20	21.7%	27	29.3%	30	32.6%	15	16.4%	72	78.3%

Table 4.2 shows that 78.3% of IRPOWs have reported PTSD with varying severity; 29.3% of them have low level; 29.3% have medium level; and 16.4% have high level.

4.1.2.1.A: Distribution in levels of reported PTSD according to demographic characteristics (table 4.3).

Table 4.3: Distribution in levels of reported PTSD according to demographic characteristics.

Disorder		PTSD levels									
Demographics		No PTSD		Low		Medium		High		Total	
		f	%	f	%	f	%	f	%	f	%
Current age (year)	40-49	7	7.6%	5	5.4%	6	6.5%	4	4.3%	22	**23.9%**
	50-59	7	7.6%	13	14.1%	15	16.3%	10	10.9%	45	**48.9%**
	≥60	6	6.5%	9	9.8%	9	9.8%	1	1.1	25	**27.2%**
	Total	**20**	**21.7%**	**27**	**29.3%**	**30**	**32.6%**	**15**	**16.4%**	**92**	**100%**
Age at capture (year)	≤19	5	5.4%	2	2.2%	3	3.3%	4	4.3	14	**15.2%**
	20-29	6	6.5%	15	16.3%	14	15.2%	5	5.4%	40	**43.5%**
	30-39	7	7.6%	9	9.8%	12	13.0%	6	6.5%	34	**37.0%**
	≥40	2	2.2%	1	1.1%	1	1.1%	0	0.0%	4	**4.3%**
	Total	**20**	**21.7%**	**27**	**29.3%**	**30**	**32.6%**	**15**	**16.4%**	**92**	**100%**
Duration of captivity (year)	8-11	4	4.3%	8	8.7%	8	8.7%	1	1.1%	21	**22.8%**
	12-15	4	4.3%	2	2.2%	1	1.1%	1	1.1%	8	**8.7%**
	≥16	12	13.0%	17	18.5%	21	22.8%	13	14.1%	63	**68.5%**
	Total	**20**	**21.7%**	**27**	**29.3%**	**30**	**32.6%**	**15**	**16.4%**	**92**	**100%**
Time elapsed Since release (year)	6-10	15	16.4%	13	14.1%	15	16.4%	12	13.0%	55	**59.8%**
	11-15	1	1.1%	5	5.4%	7	7.6%	2	2.2%	15	**16.3%**
	≥16	4	4.3%	9	9.8%	8	8.7%	1	1.1%	22	**23.9%**
	Total	**20**	**21.7%**	**27**	**29.3%**	**30**	**32.6%**	**15**	**16.4%**	**92**	**100%**
Monthly Income (Iraqi Dinar)	≤ 500,000	10	10.9%	14	15.2%	11	12.0%	7	7.6%	42	**45.7%**
	510,000-1,000,000	9	9.8%	10	10.9%	13	3.3%	3	3.3%	35	**38.0%**
	≥1,100,000	1	1.1%	3	3.3%	6	6.5%	5	5.4%	15	**16.3%**
	Total	**20**	**21.7%**	**27**	**29.3%**	**30**	**32.6%**	**15**	**16.4%**	**92**	**100%**
Level of Education	Bachelor+ postgraduate	11	12.0%	8	8.7%	9	9.8%	6	6.5%	34	**37.0%**
	Diploma	0	0.0%	4	4.3%	3	3.3%	1	1.1%	8	**8.7%**
	Secondary	3	3.3%	1	1.1%	2	2.2%	2	2.2%	8	**8.7%**
	Intermediate	3	3.3%	7	7.6%	6	6.5%	0	0.0%	16	**17.4%**
	Primary	3	3.3%	7	7.6%	10	10.9%	6	6.5%	26	**28.3%**
	Total	**20**	**21.7%**	**27**	**29.3%**	**30**	**32.6%**	**15**	**16.4%**	**92**	**100%**
Rank	Officer	7	7.6%	7	7.6%	7	7.6%	4	4.3%	25	**27.2%**
	Sub-officer	1	1.1%	1	1.1%	1	1.1%	0	0.0%	3	**3.3%**
	Reserved	6	6.5%	7	7.6%	11	12.0%	7	7.6%	31	**33.7%**
	Recruit	5	5.4%	5	5.4%	4	4.3%	4	4.3%	18	**19.6%**
	Public army	1	1.1%	5	5.4%	6	6.5%	0	0.0%	12	**13.0%**
	Civilian	0	0.0%	2	2.2%	1	1.1%	0	0.0%	3	**3.3%**
	Total	**20**	**21.7%**	**27**	**29.3%**	**30**	**32.6%**	**15**	**16.4%**	**92**	**100%**

Table 4.3 shows that 21.7% (n= 20) have no PTSD and 78.3% (n= 72) have different levels; 29.3% (n= 27) have low level; 32.6% (n= 30) have medium level; and 16.4% (n= 15) have high level.

The table shows also that 26.2% of IRPOWs have medium and high levels of PTSD within the 50-59 years age group, and 31.5% of those repatriates having low to medium levels were in the age range 20-29 at the time of capture.

Regarding duration of captivity, this table indicates that 41.3% of IRPOWs who spent 16 years and more in captivity have low and medium levels of PTSD.

29.4% of IRPOWs who were released six to ten years ago has medium to high levels of PTSD.

27.2% of those who have a monthly income of 500,000 Iraqi dinars and less have low and medium levels of PTSD.

18.5% of IRPOWs with Bachelor and Postgraduate degrees, and the same percentage for those with primary school have low and medium levels of PTSD.

15.2% of officers have low and medium levels of PTSD, whereas 19.6% of reserved have medium and high levels of PTSD.

4.1.2.1.B: Distribution of levels of reported PTSD on the control and intervention groups for four Phases (table 4.4).

Table 4.4: Distribution in levels of reported PTSD according to Control group and Intervention group for four Phases.

PTSD Disorder											
Phases		Levels of PTSD								Total	
		No Disorder		Low		Medium		High			
	Group	f	%	f	%	f	%	f	%	f	%
One	*Control*	5	5.4%	18	19.6%	14	15.2	6	6.5%	**43**	**46.7%**
	Intervention	15	16.3%	9	9.8%	16	17.4%	9	9.8%	**49**	**53.3%**
	Total	**20**	**21.7%**	**27**	**29.3%**	**30**	**32.6%**	**15**	**16.3%**	**92**	**100%**
Two	*Control*	6	6.5%	4	4.3%	25	27.2%	8	8.7%	**43**	**46.7%**
	Intervention	16	17.4%	7	7.6%	19	20.7%	7	7.6%	**49**	**53.3%**
	Total	**22**	**23.9%**	**11**	**12.0%**	**44**	**47.8%**	**15**	**16.3%**	**92**	**100%**
Three	*Control*	7	8.0%	4	4.5%	22	25.0%	8	9.1%	**41**	**46.6%**
	Intervention	19	21.6%	16	18.2%	12	13.6%	0	0.0%	**47**	**53.4%**
	Total	**26**	**29.5%**	**20**	**22.7%**	**34**	**38.6%**	**8**	**9.1%**	**88**	**100%**
Four	*Control*	4	5.1%	5	6.3%	21	26.6%	7	8.9%	**37**	**46.8%**
	Intervention	24	30.4%	17	21.5%	1	1.3%	0	0.0%	**42**	**53.2%**
	Total	**28**	**35.4%**	**22**	**27.8%**	**22**	**27.8%**	**7**	**8.9%**	**79**	**100%**

Table 4.4 shows that participants of control group have low and medium levels of reported PTSD; 74.5% (n= 25) in Phase one; 67.4% (n= 29) in Phase two; 63.5% (n= 26) in Phase three; and 70.3% (n= 26) in Phase four.

Whereas, participants of intervention group have also low and medium levels of reported PTSD but with different percentages; 51.1% (n= 25) in Phase one; 53.1% (n= 26) in Phase two; 59.5% (n= 28) in Phase three; and 42.9% (n= 18) in Phase four.

The table shows also those participants of intervention group without reported PTSD have increased from Phase one (11.6%) and Phase four (57.1%). And for those who have high level of reported PTSD they have dramatically declined from 14.0% in Phase one to 0.0% in Phase four.

4.1.2.2: Distribution of levels of reported Anxiety

For the reported anxiety this study reveals (table 4.5) that 38.0% (n= 35) do not have any anxiety; and 62.0% (n= 57) have different levels of anxiety; more than half of those repatriates 53.3% (n= 49) have mild and moderate levels and only 8.7% (n= 8) have severe level of reported anxiety.

Table 4.5: Distribution of the sample regarding to the levels of reported anxiety

Anxiety		No Anxiety		Anxiety Levels							
				Mild		Moderate		Severe		Total	
	No.	f	%	f	%	f	%	f	%	f	%
	92	35	38.0%	26	28.3%	23	25.0%	8	8.7%	**57**	**62.0%**

Table 4.5 reveals that 62.0% of IRPOWs have reported Anxiety in different levels; 28.3% of them have mild level; 25.0% have moderate level; and 8.7% have severe level of anxiety.

4.1.2.2.A: Distribution in levels of reported PTSD according to demographic characteristics (table 4.6).

Table 4.6: Distribution in levels of reported anxiety according to demographic characteristics.

Disorder		Anxiety levels									
Demographics		No Anxiety		Mild		Moderate		Severe		Total	
		f	%	f	%	f	%	f	%	f	%
Current age (year)	40-49	10	10.9%	4	4.3%	6	6.5%	2	2.2%	22	**23.9%**
	50-59	17	18.5%	17	18.5%	8	8.7%	3	3.3%	45	**48.9%**
	≥60	8	8.7%	5	5.4%	9	9.8%	3	3.3%	25	**27.2%**
	Total	**35**	**38.0%**	**26**	**28.3%**	**23**	**25.0%**	**8**	**8.7%**	**92**	**100%**
Age at capture (year)	≤19	5	5.4%	3	3.3%	4	4.3%	2	2.2%	14	**15.2%**
	20-29	16	17.0%	14	15.0%	9	9.8%	1	1.1%	40	**43.5%**
	30-39	13	14.1%	9	9.8%	8	8.7%	4	4.3%	34	**37.0%**
	≥40	1	1.1%	0	0.0%	2	2.2%	1	1.1%	4	**4.3%**
	Total	**35**	**38.0%**	**26**	**28.3%**	**23**	**25.0%**	**8**	**8.7%**	**92**	**100%**
Duration of captivity (year)	8-11	5	5.4%	8	8.9%	8	8.7%	0	0.0%	21	**22.8%**
	12-15	2	2.2%	2	2.2%	3	3.3%	1	1.1%	8	**8.7%**
	≥16	28	30.4%	16	17.0%	12	13.0%	7	7.6%	63	**68.5%**
	Total	**35**	**38.0%**	**26**	**28.3%**	**23**	**25.0%**	**8**	**8.7%**	**92**	**100%**
Time elapsed since release (year)	6-10	26	28.0%	11	12.0%	10	10.9%	8	8.7%	55	**59.8%**
	11-15	4	4.3%	7	7.6%	4	4.3%	0	0.0%	15	**16.3%**
	≥16	5	5.4%	8	8.7%	9	9.8%	0	0.0%	22	**23.9%**
	Total	**35**	**38.0%**	**26**	**28.3%**	**23**	**25.0%**	**8**	**8.7%**	**92**	**100%**
Monthly Income (Iraqi Dinar)	≤ 500,000	17	18.5%	10	10.9%	9	9.8%	6	6.5%	42	**45.7%**
	510,000-1,000,000	13	14.1%	10	10.9%	10	10.9%	2	2.2%	35	**38.0%**
	≥1,100,000	5	5.4%	6	6.5%	4	4.3%	0	0.0%	15	**16.3%**
	Total	**35**	**38.0%**	**26**	**28.3%**	**23**	**25.0%**	**8**	**8.7%**	**92**	**100%**
Level of education	Bachelor+ postgraduate	12	13.0%	7	7.6%	10	10.9%	5	5.4%	34	**37.0%**
	Diploma	3	3.3%	3	3.3%	2	2.2%	0	0.0%	8	**8.7%**
	Secondary	3	3.3%	2	2.2%	2	2.2%	1	1.1%	8	**8.7%**
	Intermediate	5	5.4%	5	5.4%	4	4.3%	2	2.2%	16	**17.4%**
	Primary	12	13.0%	9	9.8%	5	5.4%	0	0.0%	26	**28.3%**
	Total	**35**	**38.0%**	**26**	**28.3%**	**23**	**25.0%**	**8**	**8.7%**	**92**	**100%**
Rank	Officer	8	8.7%	7	7.6%	7	7.6%	3	3.3%	25	**27.2%**
	Sub-officer	1	1.1%	1	1.1%	1	1.1%	0	0.0%	3	**3.3%**
	Reserved	14	15.2%	10	10.9%	4	4.3%	3	3.3%	31	**33.7%**
	Recruit	8	8.7%	3	3.3%	6	6.5%	1	1.1%	18	**19.6%**
	Public army	3	3.3%	4	4.3%	4	4.3%	1	1.1%	12	**13.0%**
	Civilian	1	1.1%	1	1.1%	1	1.1%	0	0.0%	3	**3.3%**
	Total	**35**	**38.0%**	**26**	**28.3%**	**23**	**25.0%**	**8**	**8.7%**	**92**	**100%**

Table 4.6 shows that 38.0% (n= 35) have no anxiety and 62.0% (n= 57) have different levels of anxiety; 28.3% (n= 26) have mild level; 25.0% (n= 23) have moderate level; and 8.7% (n= 8) have severe level.

The table shows also that 27.2% of IRPOWs in the age range 50-59 years at the time of the study have mild and moderate levels of anxiety. And 24.8% within the age range 20-29 years at the time of capture have mild and moderate levels of anxiety.

For those who spent 16 years and more in captivity 30% of them have mild and moderate levels of anxiety. And 22.9% of IRPOWs who were released 6 to 10 years ago (at the time of the study) have mild and moderate levels of anxiety.

20.7% of IRPOWs with monthly income 500,000 and less reported having mild and moderate levels of anxiety.

18.5% of IRPOWs with Bachelor degree and 15.2% with primary school have mild and moderate levels of anxiety. And 15.6% of officers and 15.2% of reserved have mild and moderate levels of anxiety.

4.1.2.2.B: Distribution in levels of reported anxiety according to Control group and Intervention group for four Phases (table 4.7).

Table 4.7: Distribution in levels of reported anxiety according to Control group and Intervention group for four Phases.

Anxiety Disorder											
Phases		Levels of Anxiety								Total	
		No Disorder		Mild		Moderate		Severe			
	Group	f	%	f	%	f	%	f	%	f	%
One	*Control*	16	17.4%	14	15.2%	11	12.0%	2	2.2%	**43**	**46.2%**
	Intervention	19	20.7%	12	13.0%	12	13.0%	6	6.5%	**49**	**53.8%**
	Total	**35**	**38.0%**	**26**	**28.3%**	**23**	**25.0%**	**8**	**8.7%**	**92**	**100%**
Two	*Control*	18	19.6%	16	17.4%	7	7.6%	2	2.2%	**43**	**46.2%**
	Intervention	16	17.4%	14	15.2%	14	15.2%	5	5.4%	**49**	**53.8%**
	Total	**34**	**37.0%**	**30**	**32.6**	**21**	**22.8%**	**7**	**7.6%**	**92**	**100%**
Three	*Control*	19	21.6%	15	17.0%	5	5.7%	2	2.3%	**41**	**46.6%**
	Intervention	9	10.2%	11	12.5%	21	23.9%	6	6.8%	**47**	**53.4%**
	Total	**28**	**31.8%**	**26**	**29.5%**	**26**	**29.5%**	**8**	**9.1%**	**88**	**100%**
Four	*Control*	18	22.8%	11	13.9%	6	7.6%	2	2.5%	**37**	**46.8%**
	Intervention	5	6.3%	12	15.2%	19	24.1%	6	7.6%	**42**	**53.2%**
	Total	**23**	**29.1%**	**23**	**29.1%**	**25**	**31.6%**	**8**	**10.1%**	**79**	**100%**

Table 4.7 indicates that participants of control group have mild and moderate levels of reported anxiety: 58.2% (n= 25) in Phase one; 53.5% (n= 23) in Phase two; 48.8% (n= 20) in Phase three; and 45.9% (n= 17) in Phase four. For the intervention group about half of participants (49.0%) (n= 24) have mild and moderate levels of reported anxiety in Phase one; more than half (57.2%) (n= 28) in Phase two; 68.1% (n= 32) in Phase three; and 73.8% (n= 31) in Phase four.

For those without any levels of reported anxiety, the table indicates that there is decrease in the number of participants who have no anxiety in the intervention group; 38.8% (n= 19) in Phase one; and 11.9% (n= 5) in Phase four. In contrary, participants in control group show an increase in the number who have no anxiety from Phase one 37.2% (n= 16) to Phase four 48.6% (n= 18). But for those with severe level of anxiety the table reveals that there is no change in number of participants who have this level in both groups within the four Phases.

4.1.2.3: Distribution in levels of reported Depression

Regarding the levels of reported depression the study indicates that 37.0% (n= 34) have no reported depression; and 63.0% (n= 58) have varying levels of reported depression; more than half of the sample 56.5% (n= 52) have mild and moderate levels; and just 6.5% (n= 6) have a severe level of reported depression (table 4.8).

Table 4.8: Distribution of the sample regarding to the levels of reported Depression

Depression		No Depression		Depression Levels							
				Mild		Moderate		Severe		Total	
	No.	f	%	f	%	f	%	f	%	f	%
	92	34	37.0%	25	27.2%	27	29.3%	6	6.5%	**58**	**63.0%**

Table 4.8 indicates that 56.5% of the IRPOWs have mild and moderate levels of depression.

4.1.2.3.A: Distribution in levels of reported depression according to demographic characteristics.

Table 4.9: Distribution in levels of reported depression according to demographic characteristics.

Disorder		Depression									
Demographics		No disorder		Mild		Moderate		Severe		Total	
		f	%	f	%	f	%	f	%	f	%
Current age (year)	40-49	7	7.6%	5	5.4%	6	6.5%	4	4.3%	22	**23.9%**
	50-59	19	20.7	11	12.0%	13	14.1%	2	2.2%	45	**48.9%**
	≥60	8	8.7%	9	9.8%	8	8.7%	0	0.0%	25	**27.2%**
	Total	**34**	**37.0%**	**25**	**27.2%**	**27**	**29.3%**	**6**	**6.5%**	**92**	**100%**
Age at capture (year)	≤19	4	4.3%	3	3.3%	5	5.4%	2	2.2%	14	**15.2%**
	20-29	15	16.0%	11	12.0%	10	10.9%	4	4.3%	40	**43.5%**
	30-39	14	15.0%	10	10.9%	10	10.9%	0	0.0%	34	**37.0%**
	≥40	1	1.1%	1	1.1%	2	2.2%	0	0.0%	4	**4.3%**
	Total	**34**	**37.0%**	**25**	**27.2%**	**27**	**29.3%**	**6**	**6.5%**	**92**	**100%**
Duration of Captivity (year)	8-11	4	4.3%	8	8.7%	8	8.7%	1	1.1%	21	**22.8%**
	12-15	1	1.1%	2	2.2%	3	3.3%	2	2.2%	8	**8.7%**
	≥16	29	31.6%	15	16.0%	16	17.4%	3	3.3%	63	**68.5%**
	Total	**34**	**37.0%**	**25**	**27.2%**	**27**	**29.3%**	**6**	**6.5%**	**92**	**100%**
Time elapsed since release (year)	6-10	27	29.4%	10	10.9%	13	14.1%	5	5.4%	55	**59.8%**
	11-15	3	3.3%	7	7.6%	5	5.4%	0	0.0%	15	**16.3%**
	≥16	4	4.3%	8	8.7%	9	9.8%	1	1.1%	22	**23.9%**
	Total	**34**	**37.0%**	**25**	**27.2%**	**27**	**29.3%**	**6**	**6.5%**	**92**	**100%**
Monthly Income (Iraqi Dinar)	≤ 500,000	17	18.5	11	12.0%	12	13.0%	2	2.2%	42	**45.7%**
	510,000-1,000,000	13	14.1%	5	5.4%	13	14.1%	4	4.3%	35	**38.0%**
	≥1,100,000	4	4.3%	9	9.8%	2	2.2%	0	0.0%	15	**16.3%**
	Total	**34**	**37.0%**	**25**	**27.2%**	**27**	**29.3%**	**6**	**6.5%**	**92**	**100%**
Level of Education	Bachelor+ postgraduate	10	10.9%	9	9.8%	11	12.0%	4	4.3%	34	**37.0%**
	Diploma	4	4.3%	4	4.3%	0	0.0%	0	0.0%	8	**8.7%**
	Secondary	3	3.3%	1	1.1%	3	3.3%	1	1.1%	8	**8.7%**
	Intermediate	5	5.4%	2	2.2%	8	8.7%	1	1.1%	16	**17.4%**
	Primary	12	13.0%	9	9.8%	5	5.4%	0	0.0%	26	**28.3%**
	Total	**34**	**37.0%**	**25**	**27.2%**	**27**	**29.3%**	**6**	**6.5%**	**92**	**100%**
Rank	Officer	7	7.6%	7	7.6%	7	7.6%	4	4.3%	25	**27.2%**
	Sub-officer	0	0.0%	1	1.1%	2	2.2%	0	0.0%	3	**3.3%**
	Reserved	14	15.0%	7	7.6%	9	9.8%	1	1.1%	31	**33.7%**
	Recruit	8	8.7%	3	3.3%	6	6.5%	1	1.1%	18	**19.6%**
	Public army	3	3.3%	6	6.5%	3	3.3%	0	0.0%	12	**13.0%**
	Civilian	2	2.2%	1	1.1%	0	0.0%	0	0.0%	3	**3.3%**
	Total	**34**	**37.0%**	**25**	**27.2%**	**27**	**29.3%**	**6**	**6.5%**	**92**	**100%**

Table 4.9 shows that 37.0% (n= 34) have no depression and 63.0% (n= 58) have different levels of depression; 27.2% (n= 25) have mild level; 29.3% (n= 27) have moderate level; and 6.5% (n= 6) have severe level.

This table indicates that 26.1% and 18.5% of IRPOWs in the age groups 50-59 years and ≥60 at the time of study have mild and moderate levels of depression respectively. And for the age at capture, 22.9% and 21.8% of IRPOWs in age groups 20-29 years and 30-39 years have mild and moderate levels of depression respectively.

33.4% of IRPOWs who spent 16 years and more in captivity have mild and moderate levels of depression, and 25.0% of IRPOWs who were repatriated six to ten years ago (in the time of study) have mild and moderate levels of depression.

25.0% and 19.5% of IRPOWs with monthly income of 500,000 Iraqi dinars and less and 510,000-one million Iraqi dinars have mild and moderate levels of depression respectively.

21.8% of IRPOWs with Bachelor and postgraduate degree have mild and moderate levels of depression. And 16.2% of officers and 17.4% of reserved have mild and moderate levels of depression.

4.1.2.3.B: Distribution in levels of reported depression according to Control group and Intervention group for four Phases (table 4.10).

Table 4.10: Distribution in levels of reported depression according to Control group and Intervention group for four Phases.

Depression Disorder											
Phases		Levels of Depression								Total	
		No Disorder		Mild		Moderate		Severe			
	Group	f	%	f	%	f	%	f	%	f	%
One	*Control*	17	18.5%	16	17.4%	7	7.6%	3	3.3%	**43**	**46.7%**
	Intervention	17	18.5%	9	9.8%	20	21.7%	3	3.3%	**49**	**53.3%**
	Total	**34**	**37.0%**	**25**	**27.2**	**27**	**29.3%**	**6**	**6.5%**	**92**	**100%**
Two	*Control*	19	20.7%	17	18.5%	3	3.3%	4	4.3%	**43**	**46.7%**
	Intervention	17	18.5%	10	10.9%	19	20.7%	3	3.3%	**49**	**53.3%**
	Total	**36**	**39.1%**	**27**	**29.3%**	**22**	**23.9%**	**7**	**7.6%**	**92**	**100%**
Three	*Control*	16	18.2%	18	20.5%	6	6.8%	1	1.1%	**41**	**46.6%**
	Intervention	8	9.1%	15	17.0%	21	23.9%	3	3.4%	**47**	**53.4%**
	Total	**24**	**27.3%**	**33**	**37.5%**	**27**	**30.7%**	**4**	**4.5%**	**88**	**100%**
Four	*Control*	14	17.7%	16	20.3%	7	8.9%	0	0.0%	**37**	**46.8%**
	Intervention	5	6.3%	18	22.8%	17	21.5%	2	2.5%	**42**	**53.2%**
	Total	**19**	**24.1%**	**34**	**43.0%**	**24**	**30.4%**	**2**	**2.5%**	**79**	**100%**

Table 4.10 reveals that 53.5% (n= 23) of participants of control group have mild and moderate levels of reported depression at Phase one; 46.5% (n= 20) at Phase two; 58.5% (n= 24) at Phase three; and 62.1% (n= 23) at Phase four. And for intervention group the table indicates that 59.2% (n= 29) have mild and moderate levels of depression at Phase one; 59.2% (n= 29) at Phase two; 76.1% (n= 36) at Phase three; and 83.4% (n= 35) at Phase four. This result indicate that intervention group have a considerable increase in number of participants with levels of mild and moderate of from Phase one and Phase four reported depression

The table also shows that for the intervention group there is decrease in the number of participants with no reported depression between Phase one 39.5% (n= 17) and Phase four 11.9% (n= 5).

4.1.2.4: Distribution in levels of Social support/ degree of Satisfaction and number of support.

4.1.2.4.1: Distribution of degree of Satisfaction

For the degree of satisfaction in social support the study indicates that the majority of Iraqi POWs have 2 to 5 degree of satisfaction 86.7% (n= 80); and only 9.8% (n= 9) have a degree satisfaction of 6 with their social support (table 4.11).

Table 4.11: Distribution of the sample regarding to the Degree of satisfaction

Social support	Degree of satisfaction													
	1		2		3		4		5		6		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
	3	3.3%	15	16.3%	20	21.7%	29	31.5%	16	17.4%	9	9.8%	92	100%

Table 4.11 indicates that the degree of satisfaction the IRPOWs have regarding the social support ranged between one (dissatisfied) to six (very satisfied) more than half of them have degree of satisfaction ranged 3-4 (53.2%) (n= 49); and only 9.8% (n= 9) were very satisfied.

4.1.2.4.1.A: Distribution in levels of degree of satisfaction according to demographic characteristics (table 4.12).

Table 4.12: Distribution in levels of degree of satisfaction according to demographic characteristics.

Degree of satisfaction levels															
Demographic characteristics		1		2		3		4		5		6		Total	
		f	%	f	%	f	%	f	%	f	%	f	%	f	%
Current age	40-49	0	0.0%	6	6.5%	2	2.2%	8	8.7%	3	3.3%	3	3.3%	**22**	**23.9%**
	50-59	3	3.3%	7	7.6%	8	8.7%	18	19.6%	6	6.5%	3	3.3%	**45**	**48.9%**
	≥60	0	0.0%	2	2.2%	10	10.9%	3	3.3%	7	7.6%	3	3.3%	**25**	**27.2%**
	Total	**3**	**3.3%**	**15**	**16.3%**	**20**	**21.7%**	**29**	**31.5%**	**16**	**17.4%**	**9**	**9.8%**	**92**	**100%**
Age at capture	≤19	0	0.0%	3	3.3%	1	1.1%	5	5.4%	2	2.2%	3	3.3%	**14**	**15.2%**
	20-29	3	3.3%	7	7.6%	7	7.6%	18	19.6%	5	5.4%	0	0.0%	**40**	**43.5%**
	30-39	0	0.0%	5	5.4%	10	10.9%	6	6.5%	7	7.6%	6	6.5%	**34**	**37.0%**
	≥40	0	0.0%	0	0.0%	2	2.2%	0	0.0%	2	2.2%	0	0.0%	**4**	**4.3%**
	Total	**3**	**3.3%**	**15**	**16.35**	**20**	**21.7%**	**29**	**31.5%**	**16**	**17.4%**	**9**	**9.8%**	**92**	**100%**
Duration of captivity	8-11	1	1.1%	3	3.3%	5	5.4%	8	8.7%	3	3.3%	1	1.1%	**21**	**22.8%**
	12-15	0	0.0%	3	3.3%	1	1.1%	2	2.2%	2	2.2%	0	0.0%	**8**	**8.7%**
	≥16	2	2.2%	9	9.8%	14	15.2%	19	20.7%	11	12.0%	8	8.7%	**63**	**68.5%**
	Total	**3**	**3.3%**	**15**	**16.3%**	**20**	**21.7%**	**29**	**31.5%**	**16**	**17.4%**	**9**	**9.8%**	**92**	**100%**
Time elapsed since release	6-10	1	1.1%	10	10.9%	10	10.9%	13	14.1%	13	14.1%	8	8.7%	**55**	**59.8%**
	11-15	1	1.1%	2	2.2%	5	5.4%	7	7.6%	0	0.0%	0	0.0%	**15**	**16.3%**
	≥16	1	1.1%	3	3.3%	5	5.4%	9	9.8%	3	3.3%	1	1.1%	**22**	**23.9%**
	Total	**3**	**3.3%**	**15**	**16.3%**	**20**	**21.7%**	**29**	**31.5%**	**16**	**17.4%**	**9**	**9.8%**	**92**	**100%**
Monthly income	≤ 500,000	0	0.0%	7	7.6%	8	8.7%	11	12.0%	10	10.9%	6	6.5%	**42**	**45.7%**
	510,000-million	3	3.3%	5	5.4%	8	8.7%	12	13.0%	5	5.4%	2	2.2%	**35**	**38.0%**
	≥1,1000,000	0	0.0%	3	3.3%	4	4.3%	6	6.5%	1	1.1%	1	1.1%	**15**	**16.3%**
	Total	**3**	**3.3%**	**15**	**16.3%**	**20**	**21.7%**	**29**	**31.5%**	**16**	**17.4%**	**9**	**9.8%**	**92**	**100%**
Level of education	Bachelor+	1	1.1%	7	7.6%	5	5.4%	10	10.9%	6	6.5%	5	5.4%	**34**	**37.0%**
	Diploma	1	1.1%	1	1.1%	2	2.2%	4	4.3%	0	0.0%	0	0.0%	**8**	**8.7%**
	Secondary	0	0.0%	2	2.2%	3	3.3%	0	0.0%	2	2.2%	1	1.1%	**8**	**8.7%**
	Intermediate	0	0.0%	2	2.2%	4	4.3%	6	6.5%	3	3.3%	1	1.1%	**16**	**17.4%**
	Primary	1	1.1%	3	3.3%	6	6.5%	9	9.8%	5	5.4%	2	2.2%	**26**	**28.3%**
	Total	**3**	**3.3%**	**15**	**16.3%**	**20**	**21.7%**	**29**	**31.5%**	**16**	**17.4%**	**9**	**9.8%**	**92**	**100%**
Rank	Officer	1	1.1%	7	7.6%	2	2.2%	9	9.8%	3	3.3%	3	3.3%	**25**	**27.2%**
	Sub-officer	0	0.0%	0	0.0%	1	1.1%	2	2.2%	0	0.0%	0	0.0%	**3**	**3.3%**
	Reserved	2	2.2%	5	5.4%	9	9.8%	8	8.7%	4	4.3%	3	3.3%	**31**	**33.7%**
	Recruit	0	0.0%	1	1.1%	4	4.3%	6	6.5%	4	4.3%	3	3.3%	**18**	**19.6%**
	Public army	0	0.0%	2	2.2%	2	2.2%	4	4.3%	4	4.3%	0	0.0%	**12**	**13.0%**
	Civilian	0	0.0%	0	0.0%	2	2.2%	0	0.0%	1	1.1%	0	0.0%	**3**	**3.3%**
	Total	**3**	**3.3%**	**15**	**16.5%**	**20**	**21.7%**	**29**	**31.5%**	**16**	**17.4%**	**9**	**9.8%**	**92**	**100%**

Table 4.12 indicates that 86.9% (n= 80) have degree of satisfaction ranged 2-5 and only 9.8% (n= 9) have degree of satisfaction of six.

This table shows that regarding current age: 46.4% (n= 39) in age group (50-59 year) have degree of satisfaction ranged 2-5; and only 3.3% (n= 3) of every age group has a degree of satisfaction of six.

For the age at capture: 70.6% (n= 65) of age ranged 20-39 year at capture have degree of satisfaction ranged 2-5.

Regarding duration of captivity, the table indicates that 56.6% (n= 53) of those who spent 16 years and more in captivity have a degree of satisfaction ranged 3-6; and only 20.7% (n= 19) of those who spent eight to eleven year in captivity have a degree of satisfaction ranged 2-5.

This table indicates that regarding the time elapsed since released 58.7% (n= 54) of those who were repatriated between six to ten year have a degree of satisfaction ranged 2-6; and 21.8% (n= 20) for those have been released since more than 16 year their degree of satisfaction ranged 2-5.

For the monthly income the table shows that 43.8% (n= 41) of those who gain less than 500,000 Iraqi dinar have a degree of satisfaction ranged 2-6; and 32.5% (n= 30) of those with income less than one million and more than 510,000 Iraqi dinar have a degree ranged 2-5.

This table shows also that for level of education 35.8% (n= 33) of those with level of bachelor and postgraduate have a degree of satisfaction ranged 2-6; and 21.7% of those with primary school have a degree ranged 3-5.

Regarding the rank this table indicates that 28.2% (n= 26) of those who were Reserved have a degree of satisfaction ranged 2-5; and most of the officers 26.2% (n= 34) have a degree ranged 2-6.

4.1.2.4.1.B: Distribution in levels of degree of satisfaction according to Control group and Intervention group for four Phases(table 4.13).

Table 4.13: Distribution in levels of degree of satisfaction according to Control group and Intervention group for four Phases.

Degree of satisfaction															
Phase		1		2		3		4		5		6		Total	
	Group	f	%	f	%	f	%	f	%	f	%	f	%	f	%
One	*Control*	2	2.2%	8	8.7%	12	13.0%	17	18.5%	3	3.3%	1	1.1%	**43**	**46.7%**
	Intervention	1	1.1%	7	7.6%	8	8.7%	12	13.0%	13	14.1%	8	8.7%	**49**	**53.3%**
	Total	**3**	**3.3%**	**15**	**16.3%**	**20**	**21.7%**	**29**	**31.5%**	**16**	**17.4%**	**9**	**9.8%**	**92**	**100%**
Two	*Control*	1	1.1%	8	8.7%	12	13.0%	20	21.7%	2	2.2%	0	0.0%	**43**	**46.7%**
	Intervention	0	0.0%	7	7.6%	8	8.7%	14	15.2%	15	16.3%	5	5.4%	**49**	**53.3%**
	Total	**1**	**1.1%**	**15**	**16.3%**	**20**	**21.7%**	**34**	**37.0%**	**17**	**18.5%**	**5**	**5.4%**	**92**	**100%**
Three	*Control*	1	1.1%	6	6.8%	14	15.9%	18	20.5%	2	2.3%	0	0.0%	**41**	**46.6%**
	Intervention	0	0.0%	5	5.7%	8	9.1%	15	17.0%	12	13.6%	7	8.0%	**47**	**53.4%**
	Total	**1**	**1.1%**	**11**	**12.5%**	**22**	**25.0%**	**33**	**37.5%**	**14**	**15.9%**	**7**	**8.0%**	**88**	**100%**
Four	*Control*	1	2.5%	7	8.8%	9	11.3%	18	22.5%	2	2.5%	0	0.0%	**37**	**46.8%**
	Intervention	0	0.0%	5	6.3%	7	8.8%	9	11.3%	14	17.5%	7	8.8%	**42**	**53.2%**
	Total	**1**	**1.3%**	**12**	**15.0%**	**16**	**20.0%**	**27**	**33.8%**	**16**	**20.0%**	**7**	**8.8%**	**79**	**100%**

Table 4.13 shows that:

1- For control group 23.9%, 22.8%, 23.8%, and 22.6% of IRPOWs have degree of satisfaction ranged 1-3 at Phases one, two three, and four respectively; and 22.9%, 23.9%, 22.8%, and 25.0% of IRPOWs have degree of satisfaction ranged 4-6 at Phases one, two, three, and four respectively.

2- For Intervention group 17.4%, 16.3%, 14.8%, and 15.1% of IRPOWs have degree of satisfaction ranged 1-3 at Phases one, two, three, and four respectively; and 35.8%, 36.9%, 38.6%, and 37.6% of IRPOWs have degree of satisfaction ranged 4-6 at Phases one, two, three, and four respectively. These results revealed that there is an increase in number of IRPOWs with degree of satisfaction ranged 4-6, whereas, there is a reduction in the number of IRPOWs with degree of satisfaction ranged 1-3.

4.1.2.4.2: Distribution of the number of support in IRPOWs

Regarding number of support the IRPOWs can access in social support the results indicate that 19.6% (n= 18) of them can access 0 to 2 persons; and 44.6% (n= 41) have the access 3 to 4 and 35.9% (n= 33) have the access 5 to 6 persons (table 4.14).

Table 4.14: Distribution of the sample regarding Number of support

Social support	Number of support															
	0		1		2		3		4		5		6		Total.	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
	1	1.1	10	10.9%	7	7.6%	15	16.3%	26	28.3%	18	19.6	15	16.3%	92	100%

Regarding number of support the IRPOWs can access in social support table indicates that 80.5% (n= 74) of them can access 3 to 6 persons; and 19.6% (n= 18) have the access to two and less persons.

4.1.2.4.2.A: Distribution in levels of number of support according to demographic characteristics (table 4.15).

Table 4.15: Distribution in levels of number of support according to demographic characteristics.

Demographic characteristics		Number of support															
		0		1		2		3		4		5		6		Total	
		f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Current age	40-49	0	0.0%	3	3.3%	4	4.3%	2	2.2%	8	8.7%	3	3.3%	2	2.2%	**22**	**23.9%**
	50-59	1	1.1%	6	6.5%	1	1.1%	6	6.5%	13	14.1%	9	9.8%	9	9.8%	**45**	**48.9%**
	≥60	0	0.0%	1	1.1%	2	2.2%	7	7.6%	5	5.4%	6	6.5%	4	4.3%	**25**	**27.2%**
	Total	**1**	**1.1%**	**10**	**10.9%**	**7**	**7.6%**	**15**	**16.3%**	**26**	**28.3%**	**18**	**19.6%**	**15**	**16.3%**	**92**	**100%**
Age at capture	≤19	0	0.0%	1	1.1%	3	3.3%	2	2.2%	5	5.4%	1	1.1%	2	2.2%	**14**	**15.2%**
	20-29	1	1.1%	7	7.6%	2	2.2%	4	4.3%	13	14.1%	10	10.9%	3	3.3%	**40**	**43.5%**
	30-39	0	0.0%	2	2.2%	2	2.2%	8	8.7%	7	7.6%	6	6.5%	9	9.8%	**34**	**37.0%**
	≥40	0	0.0%	0	0.0%	0	0.0%	1	1.1%	1	1.1%	1	1.1%	1	1.1%	**4**	**4.3%**
	Total	**1**	**1.1%**	**10**	**10.9%**	**7**	**7.6%**	**15**	**16.3%**	**26**	**28.3%**	**18**	**19.6%**	**15**	**16.3%**	**92**	**100%**
Duration of captivity	8-11	1	1.1%	2	2.2%	2	2.2%	3	3.3%	7	7.6%	5	5.4%	1	1.1%	**21**	**22.8%**
	12-15	0	0.0%	1	1.1%	0	0.0%	2	2.2%	2	2.2%	2	2.2%	1	1.1%	**8**	**8.7%**
	≥16	0	0.0%	7	7.6%	5	5.4%	10	10.9%	17	18.5%	11	12.0%	13	14.1%	**63**	**68.5%**
	Total	**1**	**1.1%**	**10**	**10.9%**	**7**	**7.6%**	**15**	**16.3%**	**26**	**28.3%**	**18**	**19.6%**	**15**	**16.3%**	**92**	**100%**
Time elapsed since release	6-10	0	0.0%	7	7.6%	4	4.3%	8	8.7%	13	14.1%	10	10.9%	13	14.1%	**55**	**59.8%**
	11-15	0	0.0%	1	1.1%	1	1.1%	4	4.3%	6	6.5%	2	2.2%	1	1.1%	**15**	**16.3%**
	≥16	1	1.1%	2	2.2%	2	2.2%	3	3.3%	7	7.6%	6	6.5%	1	1.1%	**22**	**23.9%**
	Total	**1**	**1.1%**	**10**	**10.9%**	**7**	**7.6%**	**15**	**16.3%**	**26**	**28.3%**	**18**	**19.6%**	**15**	**16.5%**	**92**	**100%**
Monthly income	≤ 500,000	0	0.0%	3	3.3%	5	5.4%	5	5.4%	10	10.9%	10	10.9%	9	9.8%	**42**	**45.7%**
	510,000-million	1	1.1%	6	6.5%	1	1.1%	6	6.5%	10	10.9%	7	7.6%	4	4.3%	**35**	**38.0%**
	≥1,1000,000	0	0.0%	1	1.1%	1	1.1%	4	4.3%	6	6.5%	1	1.1%	2	2.2%	**15**	**16.3%**
	Total	**1**	**1.1%**	**10**	**10.9%**	**7**	**7.6%**	**15**	**16.3%**	**26**	**28.3%**	**18**	**19.6%**	**15**	**16.5%**	**92**	**100%**
Level of education	Bachelor+	0	0.0%	5	5.4%	1	1.1%	5	5.4%	7	7.6%	5	5.4%	11	12.0%	**34**	**37.0%**
	Diploma	1	1.1%	0	0.0%	0	0.0%	1	1.1%	4	4.3%	2	2.2%	0	0.0%	**8**	**8.7%**
	Secondary	0	0.0%	1	1.1%	1	1.1%	3	3.3%	1	1.1%	1	1.1%	1	1.1%	**8**	**8.7%**
	Intermediate	0	0.0%	3	3.3%	1	1.1%	2	2.2%	5	5.4%	5	5.4%	0	0.0%	**16**	**17.4%**
	Primary	0	0.0%	1	1.1%	4	4.3%	4	4.3%	9	9.8%	5	5.4%	3	3.3%	**26**	**28.3%**
	Total	**1**	**1.1%**	**10**	**10.9%**	**7**	**7.6%**	**15**	**16.3%**	**26**	**28.3%**	**18**	**19.6%**	**15**	**16.5%**	**92**	**100%**
Rank	Officer	0	0.0%	5	5.4%	1	1.1%	2	2.2%	5	5.4%	7	7.6%	5	5.4%	**25**	**27.2%**
	Sub-officer	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2.2%	1	1.1%	**3**	**3.3%**
	Reserved	1	1.1%	3	3.3%	2	2.2%	7	7.6%	9	9.8%	5	5.4%	4	4.3%	**31**	**33.7%**
	Recruit	0	0.0%	1	1.1%	4	4.3%	3	3.3%	7	7.6%	3	3.3%	0	0.0%	**18**	**19.6%**
	Public army	0	0.0%	1	1.1%	0	0.0%	1	1.1%	5	5.4%	1	1.1%	4	4.3%	**12**	**13.0%**
	Civilian	0	0.0%	0	0.0%	0	0.0%	2	2.2%	0	0.0%	0	0.0%	1	1.1%	**3**	**3.3%**
	Total	**1**	**1.1%**	**10**	**10.9%**	**7**	**7.6%**	**15**	**16.5%**	**26**	**28.3%**	**18**	**19.6%**	**15**	**16.5%**	**92**	**100%**

Table 4.15 indicates that 19.6% (n= 18) have number of support range 0-2; 44.6% (n= 41) have number of support range 3-4; and 35.9% (n= 33) have a number of support range 5-6.

This table shows that regarding current age 33.7% (n= 31) of those who their age ranged 50-59 year have a number of support ranged 4-6; and 23.8% (n= 22) of those are more than 60 year old have a number of support ranged 3-6.

Regarding the age at capture the table shows that 25.0% (n= 23) of those who are 20 to 29 year old have a number of support ranged 4-5; and 32.6% (n= 30) of the repatriates who are 30 to 39 year old have a number of support ranged 3-6.

For the duration of captivity, the table indicates that 55.5% (n= 51) of the repatriates who spent 16 year and more have a number of support ranged 3-6; and 16.3% (n= 15) of those who spent eight to eleven year have a number of support ranged 3-5.

The table indicates that regarding the time elapsed since released 47.8% (n= 44) of repatriates have been released for six to ten years have a number of support ranged 3-6; and 17.4% (n= 16) of those repatriates who have been released for 16 year and more have a number of support ranged 3-5.

Regarding the monthly income the table shows that 31.6% (n= 29) of those who have a monthly income of half million Iraqi dinar and less have a number of support ranged 4-6; and 29.3% (n= 27) of the repatriates with a monthly income ranged 510,000- one million Iraqi dinar have a number of support ranged 3-6.

This table shows also that for level of education 30.4% (n= 28) of those who have bachelor and postgraduate level have a number of support ranged 3-6; and 23.8% (n= 22) of those who have primary school level have a number of support ranged 2-5.

Regarding the rank this table indicates that 27.1% (n= 25) of reserved have a number of support ranged 3-6; and 18.4% of officers have a number of support ranged 4-6.

4.1.2.4.2.B: Distribution in levels of number of support according to Control group and Intervention group for four Phases (table 4.16).

Table 4.16: Distribution in levels of Number of support according to Control group and Intervention group for four Phases.

Number of support																	
Phase		0		1		2		3		4		5		6		Total	
	Group	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
One	Control	1	1.1%	8	8.7%	2	2.2%	8	8.7%	19	20.7%	4	4.3%	1	1.1%	**43**	**46.7%**
	Intervention	0	0.0%	2	2.2%	5	5.4%	7	7.6%	7	7.6%	14	15.2%	14	15.2%	**49**	**53.3%**
	Total	**1**	**1.1%**	**10**	**10.9%**	**7**	**7.6%**	**15**	**16.3%**	**26**	**28.3%**	**18**	**19.6%**	**15**	**16.3%**	**92**	**100%**
Two	Control	0	0.0%	8	8.7%	2	2.2%	13	14.1%	14	15.2%	5	5.4%	1	1.1%	**43**	**46.7%**
	Intervention	0	0.0%	2	2.2%	4	4.3%	7	7.6%	12	13.0%	16	17.4%	8	8.7%	**49**	**53.3%**
	Total	**0**	**0.0%**	**10**	**10.9%**	**6**	**6.5%**	**20**	**21.7%**	**26**	**28.3%**	**21**	**22.8%**	**9**	**9.8%**	**92**	**100%**
Three	Control	0	0.0%	6	6.9%	2	2.3%	14	15.9%	17	19.3%	1	1.1%	1	1.1%	**41**	**46.6%**
	Intervention	0	0.0%	3	3.4%	3	3.4%	6	6.8%	11	12.5%	14	15.9%	10	11.4%	**47**	**53.4%**
	Total	**0**	**0.0%**	**9**	**10.2%**	**5**	**5.7%**	**20**	**22.7%**	**28**	**31.8%**	**15**	**17.0%**	**11**	**12.5%**	**88**	**100%**
Four	Control	1	1.3%	1	1.3%	6	7.6%	6	7.6%	19	24.1%	3	3.8%	1	1.3%	**37**	**46.8%**
	Intervention	0	0.0%	2	2.5%	4	5.1%	4	5.1%	10	12.7%	14	17.7%	8	10.1%	**42**	**53.2%**
	Total	**1**	**1.3%**	**3**	**3.8%**	**10**	**12.7%**	**10**	**12.7%**	**29**	**36.7%**	**17**	**21.5%**	**9**	**11.4%**	**79**	**100%**

Table 4.16 indicates that:

1- For control group 12.0%, 10.9%, 9.2%, and 10.2% of IRPOWs have a number of support ranged 1-3 at Phases one, two three, and four respectively; and 26.1%, 21.7%, 21.5%, and 29.2% of IRPOWs have a number of support ranged 4-6 at Phases one, two, three, and four respectively.

2- For Intervention group 7.6%, 6.5%, 6.8%, and 7.6% of IRPOWs have a number of support ranged 1-3 at Phases one, two, three, and four respectively; and 38.0%, 39.1%, 39.8%, and 40.5% of IRPOWs have a number of support ranged 4-6 at Phases one, two, three, and four respectively.

The results show that there is a slight increase in number of IRPOWs who have number of support ranged 4-6.

4.1.2.5: Distribution of the levels of Total Brief COPE in IPOWs

Regarding the total coping the study indicates that 31.5% (n= 29) have weak level of coping; 64.1% (n= 59) have medium level; and only 4.3% (n= 4) have a good level of coping (table 4.17).

Table 4.17: Distribution of the sample regarding of Total coping

Total Cope	Levels of Total Cope								
		Weak		Medium		Good		Total	
	No.	f	%	f	%	f	%	f	%
	92	29	31.5%	59	64.1%	4	4.3%	92	100%

Table 4.17 shows that 95.6% of IRPOWs use total coping strategies in weak and medium levels.

4.1.2.5.A: Distribution in levels of total coping according to demographic characteristics (table 4.18).

Table 4.18: Distribution in levels of total coping according to demographic characteristics.

Total Cope levels									
Demographics		Weak		Medium		Good		Total	
		f	%	f	%	f	%	f	%
Current age (year)	40-49	3	3.3%	17	18.5%	2	2.2%	22	**23.9%**
	50-59	19	20.7%	25	27.2%	1	1.1%	45	**48.9%**
	≥60	7	7.6%	17	18.5%	1	1.1%	25	**27.2%**
	Total	**29**	**31.5%**	**59**	**64.1%**	**4**	**4.3%**	**92**	**100%**
Age at capture (year)	≤19	3	3.3%	10	10.9%	1	1.1%	14	**15.2%**
	20-29	13	14.1%	26	28.2%	1	1.1%	40	**43.5%**
	30-39	11	12.0%	21	22.9%	2	2.2%	34	**37.0%**
	≥40	2	2.2%	2	2.2%	0	0.0%	4	**4.3%**
	Total	**29**	**31.5%**	**59**	**64.1%**	**4**	**4.3%**	**92**	**100%**
Duration of captivity (year)	8-11	2	2.2%	19	20.7%	0	0.0%	21	**22.8%**
	12-15	1	1.1%	5	5.4%	2	2.2%	8	**8.7%**
	≥16	26	28.2%	35	38.0%	2	2.2%	63	**68.5%**
	Total	**29**	**31.5%**	**59**	**64.1%**	**4**	**4.3%**	**92**	**100%**
Time elapsed Since release (year)	6-10	23	25.0%	28	30.4%	4	4.3%	55	**59.8%**
	11-15	3	3.3%	12	13.0%	0	0.0%	15	**16.3%**
	≥16	3	3.3%	19	20.7%	0	0.0%	22	**23.9%**
	Total	**29**	**31.5%**	**59**	**64.1%**	**4**	**4.3%**	**92**	**100%**
Monthly Income (Iraqi Dinar)	≤ 500,000	10	10.9%	30	32.6%	2	2.2%	42	**45.7%**
	510,000-1,000,000	13	14.1%	20	21.7%	2	2.2%	35	**38.0%**
	≥1,1000,000	6	6.5%	9	9.8%	0	0.0%	15	**16.3%**
	Total	**29**	**31.5%**	**59**	**64.1%**	**4**	**4.3%**	**92**	**100%**
Level of education	Bachelor+ postgraduate	15	16.0%	16	17.0%	3	3.3%	34	**37.0%**
	Diploma	2	2.2%	6	6.5%	0	0.0%	8	**8.7%**
	Secondary	2	2.2%	6	6.5%	0	0.0%	8	**8.7%**
	Intermediate	4	4.3%	11	12.0%	1	1.1%	16	**17.4%**
	Primary	6	6.5%	20	21.7%	0	0.0%	26	**28.3%**
	Total	**29**	**31.5%**	**59**	**64.1%**	**4**	**4.3%**	**92**	**100%**
Rank	Officer	10	10.9%	13	14.1%	2	2.2%	25	**27.2%**
	Sub-officer	2	2.2%	1	1.1%	0	0.0%	3	**3.3%**
	Reserved	12	13.0%	19	20.7%	0	0.0%	31	**33.7%**
	Recruit	3	3.3%	14	15.0%	1	1.1%	18	**19.6%**
	Public army	2	2.2%	9	9.8%	1	1.1%	12	**13.0%**
	Civilian	0	0.0%	3	3.3%	0	0.0%	3	**3.3%**
	Total	**29**	**31.5%**	**59**	**64.1%**	**4**	**4.3%**	**92**	**100%**

Table 4.18 shows that 31.5% (n= 29) of IRPOWs have weak level of coping; 64.1% (n= 59) have medium level of coping; and only 4.3% (n= 4) have good level of coping.

The table shows that regarding current age 47.9% and 26.1% of IRPOWs with age ranged 50-59 years and ≥60 years have weak and medium levels of coping respectively. And 42.3% and 36.9% of IRPOWs with age ranged 20-29 years and 30-39 years have weak and medium levels of coping respectively.

66.2% and 22.9% of IRPOWs who spent 16 years and more and 8-11 years in captivity have weak and medium levels of coping respectively. And for those who were repatriated before 6-10 years have weak and medium levels of coping.

43.5% and 35.8% of IRPOWs with monthly income ranged 500,000 Iraqi dinars and less and 5100.000-one million Iraqi dinars have weak and medium levels of coping respectively.

The study shows that 33.0% of IRPOWs with Bachelor and postgraduate degree and 28.2% with primary school have weak and medium levels of coping respectively. And 25.0% of officers, 33.7% of reserved, and 18.3% of recruit have weak and medium levels of coping respectively.

4.1.2.5.B: Distribution in levels of total coping according to Control group and Intervention group for four Phases (table 4.19).

Table 4.19: Distribution in levels of total coping according to Control group and Intervention group for four Phases.

Total Cope										
	Phases		Levels of Cope							
			Weak		Medium		Good		Total	
		Group	f	%	f	%	f	%	f	%
Total Cope	One	*Control*	12	13.0%	30	32.6%	1	1.1%	**43**	**46.7%**
		Intervention	17	18.5%	29	31.5%	3	3.3%	**49**	**53.3%**
		Total	**29**	**31.5%**	**59**	**64.1%**	**4**	**4.3**	**92**	**100%**
	Two	*Control*	1	1.1%	41	44.6%	1	1.1%	**43**	**46.7%**
		Intervention	0	0.0%	45	48.9%	4	4.3%	**49**	**53.3%**
		Total	**1**	**1.1%**	**86**	**93.5%**	**5**	**5.4%**	**92**	**100%**
	Three	*Control*	1	1.1%	40	45.5%	0	0.0%	**41**	**46.6%**
		Intervention	0	0.0%	40	45.5%	7	8.0%	**47**	**53.4%**
		Total	**1**	**1.1**	**80**	**90.9%**	**7**	**8.0%**	**88**	**100%**
	Four	*Control*	1	1.3%	36	45.6%	0	0.0%	**37**	**46.8%**
		Intervention	0	0.0%	33	41.8%	9	11.4%	**42**	**53.2%**
		Total	**1**	**1.3%**	**69**	**87.3%**	**9**	**11.4%**	**79**	**100%**

Table 4.19 indicates that more than half of participants of both groups have a medium level of total cope. For control group 69.8% (n= 30) have medium level at Phase one; 95.2% (n= 41) at Phase two; 97.6% (n= 40) at Phase three; and 97.3% (n= 36) at Phase four.

For intervention group 93.9% (n= 46) have low and medium levels of cope at Phase one; 91.8% (n= 45) have medium level at Phase two; 85.1% (n= 40) have medium level at Phase three; and 78.6% (n= 33) have medium level at Phase four.

4.1.2.5.C: Distribution of the levels of coping dimensions in IPOWs (table 4.20).

Table 4.20: Distribution of the levels of Brief COPE dimensions in IRPOWs.

Brief COPE								
	Levels of Coping dimensions							
	Weak		Medium		Good		Total	
Coping Dimensions	**f**	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Active coping	11	12.0%	54	58.7%	27	29.3%	92	**100%**
Planning	14	15.2%	48	52.2%	30	32.6%	92	**100%**
Positive reframing	13	14.1%	49	53.2%	30	32.6%	92	**100%**
Acceptance	15	16.3%	53	57.6%	24	26.1%	92	**100%**
Humour	24	26.1%	52	56.6%	16	17.4%	92	**100%**
Religion	3	3.3%	22	23.9%	67	72.8%	92	**100%**
Emotional support	8	8.7%	34	37.0%	50	54.3%	92	**100%**
Instrumental support	5	5.4%	24	26.1%	63	68.5%	92	**100%**
Self-distraction	3	3.3%	23	25.0%	66	71.7%	92	**100%**
Denial	20	21.7%	57	61.9%	15	16.4%	92	**100%**
Venting	20	21.7%	52	56.6%	20	21.7%	92	**100%**
Substance use	68	73.9%	15	16.3%	9	9.7%	92	**100%**
Behavioural Disengagement	19	20.7%	53	57.6%	20	21.7%	92	**100%**
Self-blame	27	29.3%	33	35.9%	32	34.8%	92	**100%**

Table 4.20 shows the different levels of coping strategies used by the study subjects. Most of those strategies used by those repatriates ranged between medium and good levels; 88.0% (n= 81) for active coping; 84.8% (n= 78) for planning; 85.8% (n= 79) for positive reframing; 83.7% (n= 77) for acceptance; 74.0% (n= 68) for humour; 96.7% (n= 89) for religion; 91.3% (n= 84) for emotional support; 94.6% (n= 87) for instrumental support; 96.7% (n= 89) for self-distraction; 78.3% (n= 72) for denial; 74.3% (n= 72) for venting; 79.3% (n= 73) for behavioural disengagement; 70.7% (n= 65) for self-blame; but for substance use ranged between weak and medium 90.2% (n= 83).

4.2: Inferential Analysis at Phase one

After presenting the descriptive analysis for the sample at Phase one, this section of analysis intends to demonstrate the differences between the control and intervention groups.

4.2.1: Differences between the control group and intervention group regarding demographic characteristics: current age, age at capture, duration of captivity, time elapsed since release, and monthly income were assessed by applying the independent *t*-test (table 4.21); and by applying the Mann-Whitney U test for demographic characteristics: level of education and rank (table 4.22).

Table: 4.21: Comparison between Control and Intervention groups for: current age, Age at capture, Duration of captivity, Time elapsed since release, and Monthly income.

Demographic Characteristics	Group				Independent *t*-test	
	Control		Intervention			
	mean	*St. d.*	*mean*	*St. d.*	*t*	*p*
Current age	53.6	5.6	55.0	7.9	0.42	0.68
Age at capture	37.0	25.9	27.9	7.9	0.66	0.51
Duration of captivity	16.1	4.9	16.7	5.3	0.43	0.67
Time elapsed since release	11.5	5.4	10.6	5.7	0.58	0.56
Monthly income	913,46	1,022,33	596,90	260,37	1.94	0.06

Table 4.21 indicates that there is no significant difference between control group and intervention group at Phase one (baseline) regarding the demographic characteristics: current age t= 0.42, p= 0.68; age at capture t= 0.66, p= 0.51; duration of captivity t= 0.43, p= 0.67; time elapsed since release r= 0.58, p= 0.56; and monthly income t= 1.94, p= 0.06.

So this result demonstrates that there is no obvious sampling bias in the making up of the control group and intervention group. These two groups appear to be equally representative of the study population.

Table: 4.22: Comparison between Control and Intervention groups for: level of education and rank.

	Control group		Intervention group		Mann-Whitney U	
	Mean Rank	*Sum of Ranks*	*Mean Rank*	*Sum of Ranks*	*z*	*sig.*
Level of education	47.97	2062.5	45.21	2215.5	-0.51	0.61
Rank	49.81	2142.0	43.59	2136.0	-1.16	0.25

This table indicates that there is no significant difference between control group and intervention group regarding level of education z= -0.51, sig= 0.61; and rank z= -1.16, sig= 0.25.

4.2.2: Differences between the control group and intervention group regarding reported PTSD, anxiety, depression, social support, and coping (table 4.23).

Table: 4.23: Comparison between Control and Intervention groups for reported PTSD, anxiety, depression, total coping, and social support (degree of satisfaction and number of support).

Variables		Group				Independent *t*-test	
		Control		Intervention			
		mean	*St. d.*	*mean*	*St. d.*	*t*	*P*
PTSD		7.70	3.23	6.53	4.74	1.36	0.18
Anxiety		9.28	3.36	9.37	4.88	-0.10	0.92
Depression		8.49	3.68	9.90	4.01	-1.75	0.08
Social support	Degree of satisfaction	2.33	1.06	3.08	1.37	-2.91	0.05
	Number of support	3.21	1.43	4.39	1.50	-3.85	0.01
Total coping		2.42	0.29	2.48	0.28	-1.15	0.26

Regarding the reported PTSD, anxiety, depression, social support and coping, table 4.23 indicates that there are few significant differences between control group and intervention group. There are no differences for the clinical outcomes (PTSD, depression and anxiety) but social support is significantly different between the 2 groups p= 0.05 and 0.01. So there are possibly some differences between the level and satisfaction with support between intervention and control group that may have introduced some bias into the analysis.

4.2.3: Associations between the demographic characteristics and different variables and within variables was determined by using correlation coefficient (r) and partial correlation.

4.2.3.1: Associations between the demographic characteristics and reported PTSD, anxiety, depression, social support, and coping was determined by applying correlation coefficient (table 4.24).

Table 4.24: Association between demographic characteristics and reported PTSD, anxiety, depression, social support, and coping.

Correlation coefficient												
							Social support				Total coping	
Variables	PTSD		Anxiety		Depression		Degree		Number			
Demographics	*r*	*sig*	*r*	*sig*	*r*	*sig*	*r*	*sig*	*r*	*sig*	*r*	*sig.*
Age now	0.03	0.82	0.01	0.94	-0.17	0.10	0.08	0.48	0.19	0.07	0.06	0.57
Age at capture	-0.04	0.96	0.09	0.64	-0.15	0.15	0.09	0.40	0.24	0.02	0.05	0.61
Duration of captivity	0.10	0.37	-0.07	0.51	-0.15	0.14	0.15	0.16	0.10	0.34	0.19	0.08
Time elapsed	0.02	0.87	0.01	0.92	0.09	0.42	-0.14	0.18	-0.12	0.27	-0.18	0.09
Monthly income	0.10	0.34	-0.04	0.74	0.01	0.96	-0.16	0.13	-0.06	0.55	0.19	0.07
Level of education	0.17	0.11	-0.14	0.18	-0.21	0.06	0.01	0.93	-0.10	0.34	-0.27	0.01
Rank	0.10	0.37	-0.03	0.81	-0.12	0.10	0.10	0.34	-0.01	0.95	-0.07	0.48

Table 4.24 shows a non-significant relationship between demographic characteristics and PTSD, anxiety, depression, and degree of satisfaction. There is a significant relationship with number of support (r= 0.04, p= 0.02); and negative relationship with coping (r= -0.27, p= 0.01) but both of these are very weak or negligible effects.

4.2.3.2: Association within the coping strategies which was determined by using correlation coefficient (table 4.25).

Table 4.25: Association within coping strategies

Association within coping strategies														
Coping strategies		**Active coping**	**Planning**	**Reframing**	**Acceptance**	**Humour**	**Religion**	**Emotional support**	**Instrumental support**	**Self-distraction**	**Denial**	**Venting**	**Substance use**	**Behavioural disengagement**
Planning	r	**0.69**												
	sig.	**0.01**												
Reframing	r	**0.60**	**0.61**											
	sig.	**0.01**	**0.01**											
Acceptance	r	0.28	0.38	0.50										
	sig.	0.01	0.01	0.01										
Humour	r	0.21	0.05	0.06	0.07									
	sig.	0.04	0.67	0.60	0.49									
Religion	r	0.13	0.18	0.32	0.32	-0.06								
	sig.	0.23	0.09	0.01	0.01	0.60								
Emotional support	r	0.16	0.05	0.03	0.01	0.07	0.18							
	sig.	0.14	0.61	0.81	0.97	0.51	0.08							
Instrumental support	r	0.14	0.05	0.07	0.14	0.03	0.31	**0.65**						
	sig.	0.17	0.63	0.54	0.18	0.79	0.01	**0.01**						
Self-distraction	r	0.50	0.30	0.35	0.40	0.26	0.16	0.24	0.25					
	sig.	0.01	0.01	0.01	0.01	0.01	0.14	0.02	0.01					
Denial	r	-0.25	-0.23	-0.23	-0.19	-0.05	-0.29	-0.07	-0.21	0.01				
	sig.	0.02	0.02	0.02	0.07	0.64	0.01	0.50	0.05	0.91				
Venting	r	0.33	0.14	0.38	0.23	0.30	0.31	0.21	0.10	0.42	-0.01			
	sig.	0.01	0.20	0.01	0.03	0.01	0.02	0.05	0.36	0.01	0.96			
Substance use	r	-0.11	-0.26	-0.22	-0.40	0.01	-0.71	-0.07	-0.25	-0.16	0.18	-0.06		
	sig.	0.31	0.01	0.04	0.01	0.95	0.01	0.49	0.02	0.14	0.09	0.60		
Behavioural disengagement	r	-0.12	-0.32	-0.17	-0.11	0.15	-0.04	0.12	-0.01	0.16	0.38	0.17	0.16	
	sig.	0.25	0.02	0.11	0.28	0.15	0.69	0.24	0.96	0.13	0.01	0.11	0.12	
Self-blame	r	-0.02	0.01	-0.03	0.18	0.30	-0.04	0.01	0.04	0.05	-0.10	0.10	-0.03	0.13
	sig.	0.82	0.89	0.80	0.09	0.01	0.68	0.99	0.70	0.63	0.35	0.33	0.82	0.22

Table 4.25 indicates that there are different relationships between the different coping strategies which the Iraqi POWs use when experiencing stressful situations:

Those who use the strategy of Active coping also use the strategies of planning (r= 0.69, p= 0.01), reframing (r= 0.60, p= 0.01, acceptance (weak correlation: r= 0.28, p= 0.01), humour (weak correlation: r= 0.21, p= 0.04), self-distraction (r= 0.50, p= 0.01, and venting (weak correlation: r= 0.33, p= 0.01). On the other hand, they do not use the strategies of religion, and emotional and instrumental support.

For Planning strategy the table shows that the more planning the Iraqi POWs use in the stressful circumstances the more strategies of reframing (r= 0.60, p= 0.01), acceptance (weak correlation: 0.38, p= 0.01), and self-distraction (weak correlation: r= 0.30, p= 0.01) occur.

Regarding Reframing strategy the results of this study indicates that the Iraqi POWs who use reframing also use, acceptance (weak correlation: r= 0.50, p= 0.01), religion (weak correlation: r= 0.32, p= 0.01), self-distraction (weak correlation: r= 0.35, p= 0.01, and venting (weak correlation: r= 0.38, 0.01) in dealing with stress.

And for Acceptance table 4.25 shows that the higher the strategy of acceptance the more the use of strategies of religion (weak correlation: r= 0.32, p= 0.01, self-distraction (weak correlation: r= 0.40, p= 0.01, and venting (weak correlation: r= 0.23, p= 0.03).

For the strategy of Humour, the study indicates that the use of humour is associated with using other strategies such as self-distraction (r= 0.26, p= 0.01), venting (weak correlation: r= 0.30, p= 0.01), and self-blame (weak correlation: r= 0.30, p= 0.01).

For those who use the strategy of religion they tend to also use the other strategies such as instrumental support (weak correlation: r= 0.31, p= 0.01) and venting (weak correlation: r= 0.31, p= 0.02).

For emotional support strategy the results show that this strategy associates with the some other strategies: instrumental support (r= 0.65, p= 0.01), self-distraction (weak correlation: r= 0.24, p= 0.02), and venting (weak correlation: r= 0.21, p= 0.05).

Regarding the use of instrumental support the study indicates that the more use of this strategy the more using of self-distraction (weak correlation: r= 0.25, p= 0.01).
There is an association between denial and venting (weak correlation: r= 0.42, p= 0.010); and venting and behavioural disengagement (weak correlation; r= 0.38, p= 0.01).

4.2.3.3: Partial correlation was conducted to determine the association between PTSD and anxiety and depression; and the association between anxiety and depression. Table 4.26 shows these associations.

Table 4.26: Partial associations between PTSD, anxiety, and depression.

Partial Correlation coefficient			
Control variables		**Depression**	
Anxiety	**PTSD**	***r***	***Sig.***
		-0.22	0.04
Depression	**PTSD**	**Anxiety**	
		r	***Sig.***
		-0.46	0.01
PTSD	**Depression**	**Anxiety**	
		r	***Sig.***
		0.56	0.01

Table 4.26 indicates that there is a weak negative association between reported PTSD and depression (r= -0.22, p= 0.04) after removing the effect of anxiety; and reported PTSD and anxiety (r= -0.46, p= 0.01) after removing the effect of depression. But there is a moderate association between reported anxiety and depression after removing the effect of PTSD.

4.3: Assessing differences in dropout group

Logistic regression analysis was conducted so as to determine any differences between who completed Phase four (n= 79) and those who dropped out before completed Phase four (n= 13).

Table 4.27: Omnibus Tests of Model Coefficients

Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Model	25.16	18	0.12

In this case model chi square has 18 degrees of freedom, a value of 25.16 and a probability of p< 0.12 (Table 4.27), which is not statistically significant.

Table 4.28: Classification Table

Classification Table [a]					
	Observed		Predicted		
			Dropout by Phase 4 or completion		Percentage Correct
			Completed	Dropout	
Step 1	Dropout by Phase 4 or completion	Completed	77	2	97.5
		Dropout	9	4	30.8
	Overall Percentage				88.0
a. The cut value is 0.500					

The classification table shows the proportion of cases which have been classified correctly into those who completed Phase four and those who dropped out before Phase four. In the Classification table (Table 4.28), the columns are the two predicted values of the dependent, whereas the rows are the two observed (real) values of the dependent. In a perfect model, all cases will be on the diagonal and the overall percentage correct will be 100%. In this study, 97.5% were correctly classified for the completed Phase four group and 30.8% for the dropped out group. Overall 80.0% were correctly classified.

Table 4.29: Variables in the Equation

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp (B)
Step 1	Age at capture	-0.07	0.10	0.46	1	0.50	0.93
	Duration of captivity	0.70	0.39	3.30	1	0.07	2.02
	Time elapsed since release	0.58	0.36	2.54	1	0.11	1.79
	Monthly income	0.00	0.00	0.01	1	0.91	1.00
	Level of education			1.93	4	0.75	
	Level (1)	-1.39	2.02	0.47	1	0.50	0.25
	Level (2)	-0.95	1.80	0.28	1	0.50	0.39
	Level (3)	-0.01	1.61	0.01	1	1.00	1.00
	Level (4)	-2.20	1.82	1.45	1	0.23	0.11
	Rank			1.42	5	0.92	
	Rank (1)	-0.16	1.73	0.01	1	0.93	0.86
	Rank (2)	-19.7	21952.5	0.01	1	1.00	0.01
	Rank (3)	-1.97	2.01	0.96	1	0.33	0.14
	Rank (4)	-22.7	8472.1	0.01	1	1.00	0.01
	Rank (5)	-21.5	10318.5	0.01	1	1.00	0.01
	PTSD	-0.05	0.15	0.10	1	0.76	0.96
	Anxiety	0.16	0.22	0.53	1	0.47	1.17
	Depression	-0.25	0.23	1.13	1	0.29	0.78
	Total coping	-3.05	2.23	1.88	1	0.17	0.05
	Religion	0.14	0.55	0.06	1	0.80	1.15
	Constant	-7.38	11.61	4.40	1	0.53	0.01

Table 4.29 shows the variables in the Equation. This table has a number of significant aspects. The Wald statistic and associated probabilities provide a guide of the significance of each predictor in the equation. The Wald statistic has a chi-square distribution.

The easiest way to measure Wald is to obtain the significance values and if less than 0.05 reject the null hypothesis as the variable does appear making a significant contribution. For results of table 4.29 and in column of the significance all the values are more than 0.05 so there were no significant contributions for these variables.

The Exp (B) column in Table 4.29 presents the extent to which increasing the corresponding assess by one unit influences the probability ratio. Exp (B) can be

interpreted in terms of the change in probability; if the value exceeds 1 then the probability of an outcome occurring increase; if the figure is less than 1, any increase in the predictor leads to a drop in the probability of the outcome occurring.

The other aspect of the table 4.29 results is the significance (sig.) which indicates that there is no significant difference between those who completed Phase four (79) and who dropped out before Phase four.

4.4: Assessing the Intervention

Repeated measures ANOVA were used to assess the impact of the intervention on levels of PTSD, anxiety, and depression for IRPOWs. These show between groups effects as well as within subjects effects in the control and intervention groups.

4.4.1: Assessing the intervention on the levels of reported PTSD (Tables 4.30 and 4.31; and figure 4.1).

4.30: Repeated Measures ANOVA Tests for reported PTSD

PTSD	Repeated Measures ANOVA Tests			
	F	p	size effect (d)	Observed power
Main time effect	18.39	0.01	0.2	0.99
Between groups effect	16.93	0.01	0.2	0.98
Groups Interaction overtime	28.64	0.01	0.3	1.00

The results of table 4.30 show that:

1- The within subjects test indicates that the interaction of time and group is significant (F= 28.64, p= 0.01).

2- The main effect of time is significant (F= 18.39, p= 0.01).

3- The between groups test indicates that there the variable group is significant F= 16.93, p= 0.01).

The significant interaction indicates that the control group and intervention group are changing over time and they are changing in different ways, in other words, in the figure 4.1 the lines of the two groups are not parallel.

In the figure 4.1 for this particular situation it is clear that the control group is increasing in PTSD over time and the intervention group is decreasing in PTSD over time. Regarding the effect size table 4.30 indicates that there is a small effect size for main time effect (d= 0.2), and between groups effect (d= 0.2), and a medium effect size for groups interaction over time (d= 0.3) (Cohen, 1988).

Table 4.31: Differences within the four Phases regarding reported PTSD by using Post hoc tests.

Pair-wise Comparisons (multiple comparisons: Bonferroni)				
(I) PTSD	(J) PTSD	Mean Difference (I-J)	Std. Error	Sig.
1	2	0.22	0.11	0.37
	3	1.06	0.27	0.01
	4	1.91	0.40	0.01
2	1	-0.22	0.11	0.37
	3	0.85	0.23	0.01
	4	1.69	0.36	0.01
3	1	-1.06	0.27	0.01
	2	-0.85	0.23	0.01
	4	0.85	0.26	0.01
4	1	-1.9	0.40	0.01
	2	-1.693	0.36	0.01
	3	-0.85	0.26	0.01

Regarding the differences in reported PTSD within the four Phases table 4.31 indicates that there is significant difference in reported PTSD between Phase one and Phases three (sig.= 0.01) and four (sig.= 0.01) but there is no difference with Phase two (sig.= 0.37). This indicates that there is a changing in level reported PTSD between Phase one and Phases three and four.

There are also changes between Phase two and Phase three (sig.= 0.01), and with Phase four (sig.= 0.01).

This table shows also that there is a change in reported PTSD between Phase three and Phase four (sig.= 0.01).

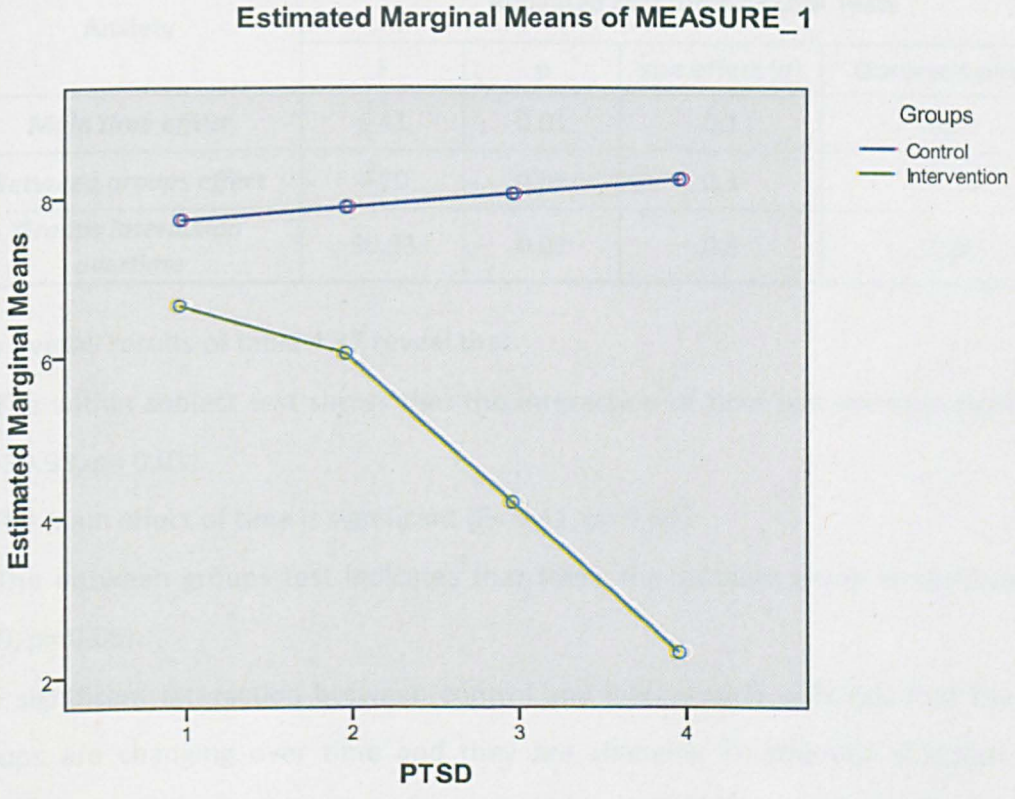

Figure 4.1: Changes in the levels of reported PTSD in the control and intervention groups throughout the four Phases.

4.4.2: Assessing the intervention on the levels of reported anxiety (tables 4.32 and 4.33; and figure 4.2).

4.32: Repeated Measures ANOVA Tests for reported Anxiety.

Anxiety	Repeated Measures ANOVA Tests			
	F	p	size effect (d)	Observed power
Main time effect	6.41	0.01	0.1	0.90
Between groups effect	4.20	0.05	0.1	0.53
Groups Interaction overtime	30.93	0.01	0.3	1.00

The overall results of table 4.32 reveal that:

1- The within subject test shows that the interaction of time and group is significant (F= 30.93, p= 0.01).

2- The main effect of time is significant (F= 6.41, p= 0.01).

3- The between groups test indicates that there the variable group is significant F= 4.20, p= 0.05).

The significant interaction between control and intervention indicates that the both groups are changing over time and they are changing in different direction. That describes in the figure 4.2 which shows the lines of the two groups are not similar in direction.

Regarding the effect size table 4.32 indicates that there are low effect sizes for the main time effect (d= 0.1), and between groups effect (d= 0.1), and medium effect size for groups interaction over time (d= 0.3) (Cohen, 1988).

In the figure 4.2 for this particular circumstance it is obvious that the intervention group is mounting in reported anxiety over time and the control group is declining in reported anxiety over time.

Table 4.33: Differences within the four Phases regarding reported anxiety by using Post hoc tests.

Pair-wise Comparisons (multiple comparisons: Bonferroni)				
(I) Anxiety	(J) Anxiety	Mean Difference (I-J)	Std. Error	Sig.
1	2	-5.05	0.12	1.00
	3	-0.58	0.21	0.05
	4	-0.65	0.23	0.04
2	1	0.05	0.12	1.00
	3	-0.53	0.19	0.04
	4	-0.60	0.22	0.05
3	1	0.58	0.21	0.05
	2	0.53	0.19	0.04
	4	-0.07	0.15	1.00
4	1	0.65	0.23	0.04
	2	0.60	0.22	0.05
	3	0.07	0.15	1.00

Regarding the differences in reported anxiety within the four Phases table 4.33 indicates that there is significant difference in reported anxiety between Phase one and Phases three (sig.= 0.05) and four (sig.= 0.04) but there is no difference with Phase two (sig.= 0.37). This indicates that there is a change in level of reported anxiety between Phase one and Phases three and four.

There are also changes between Phase two and Phase three (sig.= 0.04), and with Phase four (sig.= 0.05).

This table shows also that there is no change in reported anxiety between Phase three and Phase four (sig.= 1.0).

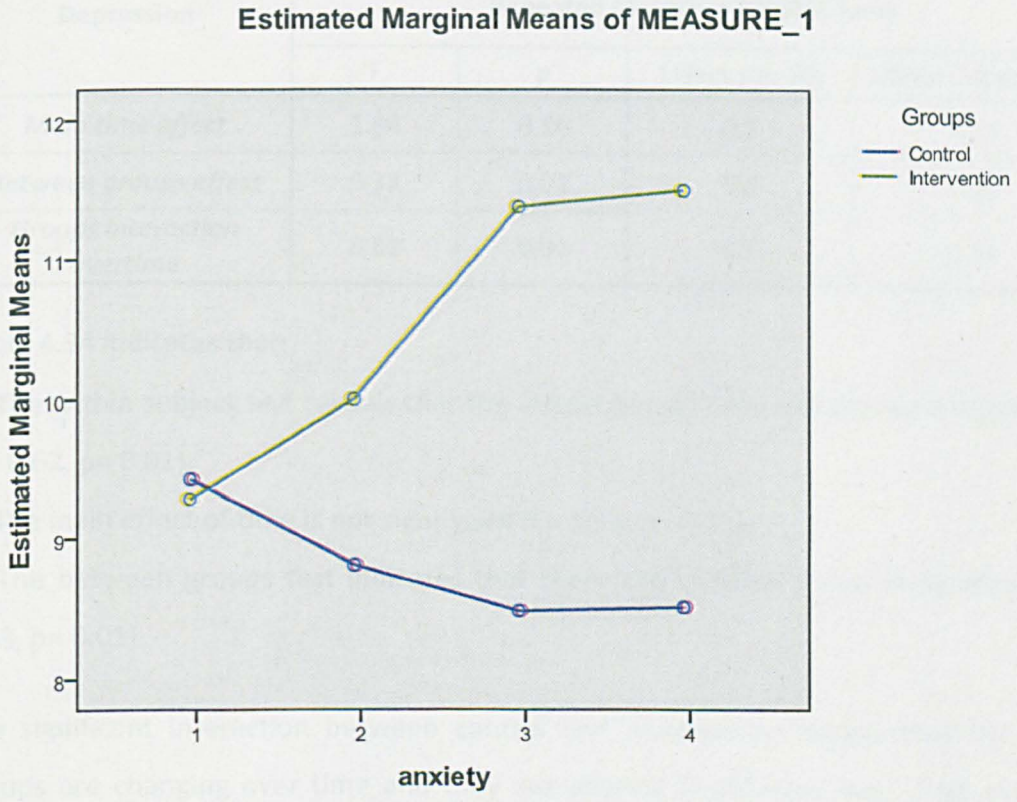

Figure 4.2: Changes in the levels of reported anxiety in the control and intervention groups throughout the four Phases.

4.4.3: Assessing the intervention on the levels of reported depression (table 4.34, 4.35, and figure 4.3).

4.34: Repeated Measures ANOVA Tests for reported Depression

Depression	Repeated Measures ANOVA Tests			
	F	p	Effect size (d)	Observed power
Main time effect	1.94	0.16	0.1	0.39
Between groups effect	6.33	0.01	0.1	0.70
Groups Interaction overtime	8.62	0.01	0.1	0.94

Table 4.34 indicates that:

1- The within subject test reveals that the interaction of time and groups is significant (F= 8.62, p= 0.01).

2- The main effect of time is not significant (F= 1.94, p= 0.16).

3- The between groups test indicates that there the variable group is significant F= 6.33, p= 0.01).

The significant interaction between control and intervention means that the both groups are changing over time and they are altering in different way. That explains figure 4.3 which indicates that the trends for the two groups are very different.

In the figure 4.3 for this particular case it is clear that the intervention group is rising in reported depression over time and the control group is declining in reported depression over time.

Regarding the effect size table 4.34 indicates that there are low effect sizes for the main time effect (d= 0.1), and between groups effect (d= 0.1), and for groups interaction over time (d= 0.1) (Cohen, 1988).

Table 4.35: Differences within the four Phases regarding reported depression by using Post hoc tests.

Pair-wise Comparisons (multiple comparisons: Bonferroni)				
(I) Depression	(J) Depression	Mean Difference (I-J)	Std. Error	Sig.
1	2	0.07	0.08	1.00
	3	-0.26	0.15	0.55
	4	-0.23	0.22	1.00
2	1	-0.07	0.08	1.00
	3	-0.33	0.14	0.11
	4	-0.30	0.22	0.99
3	1	0.26	0.15	0.55
	2	0.33	0.14	0.11
	4	0.03	0.15	1.00
4	1	0.23	0.22	1.00
	2	0.30	0.22	0.99
	3	-0.03	0.15	1.00

Regarding the differences in reported depression within the four Phases table 4.35 indicates that there is no significant difference in reported depression between Phase one and Phases two (sig.= 1.00), three (sig.= 0.55), Phase four (sig.= 1.00). This indicates that there is no change in level of reported depression between Phase one and Phases two, three, and four.

There is also no change between Phase two and Phase three (sig.= 0.11), and with Phase four (sig.= 0.99).

This table shows also that there is no change in reported depression between Phase three and Phase four (sig.= 1.00).

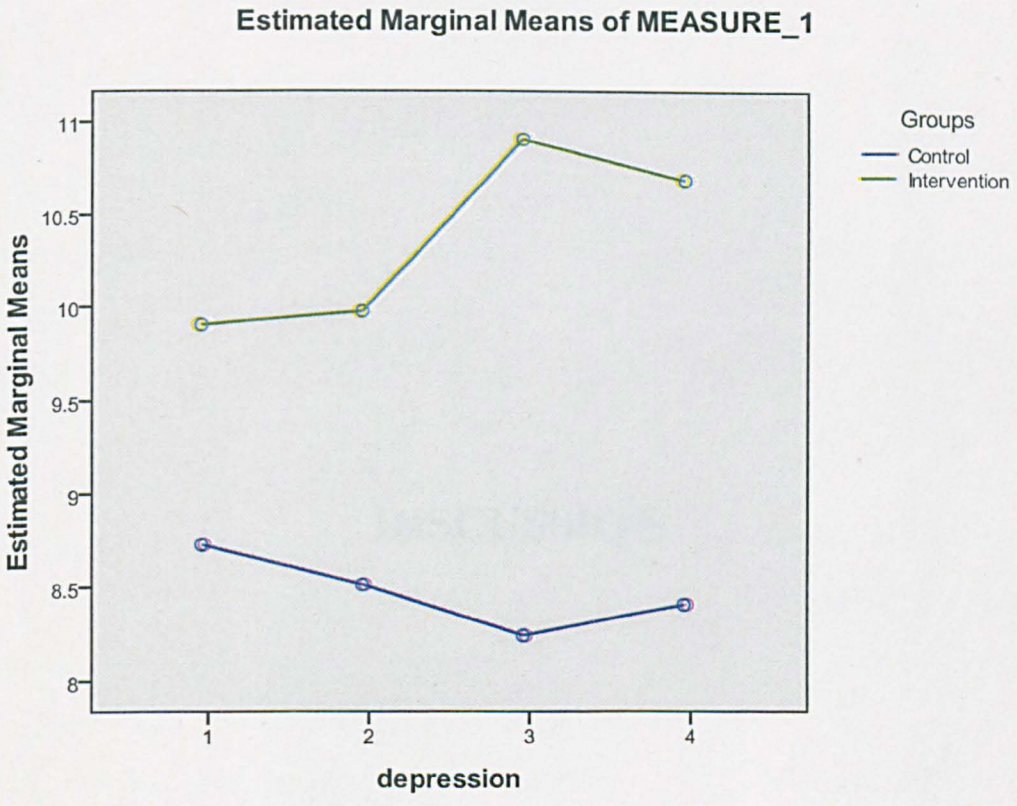

Figure 4.3: Changes in the levels of reported depression in the control and intervention groups throughout the four Phases.

CHAPTER FIVE

DISCUSSION

5- Discussion

5.1: Discussion of the Demographic characteristics

In Iraq and before, during and until 2003 the military service (recruitment) was compulsory for all males at the age of 18 year with a temporary exception for those who were still studying after secondary school (for diploma, bachelor and postgraduate degrees), with permanent exception for those who were disabled for any reason. The official duration for military service was 36 months for males who were recruited at age 18 and 24 months for the graduates but the true duration was usually more than that. There was also a reserved military service for all who finished the recruitment service which was for six months but this was frequently exceeded. For the officers, pilots, reserved officers (who graduated from the university) and sub-officers there were different ages according to their service and rank in the army.

At the time of Iran-Iraq war, 1980-1988 about five cohorts of recruits were in the army (born between 1957 and 1961) with about the same number of reserved and graduates. As the war lasted for eight years, the majority of captured soldiers were still young; range ≤19- ≤39 (table 4.1).

This result is supported by the study of, Hassan and Hassan (1995) who found that the age at capture was 20 to 50 years; Al-Samarai (1994) who reported that the age of his sample at capture was 27 to 45 years; and Hamzah (1994) who found that the average of the age at capture of the sample was 34 years. For the POWs of other wars; Rintamaki et al. (2009) found that the average age of POWs in the Second World War was 23.9 years; for those held in Germany, their average age at capture was 24.2 years, for those held in Japan is 23.6 years (Miller et al., 1989); for POWs held in Vietnam the average age at capture was somewhat older at 30.6 years (Feder et al., 2008); and for those who captured in Korean Conflict the average of age at capture was 23 years (Skelton, 2002). The differences between Iraqi studies and other studies are due to the time elapsed since release from captivity and the date of those studies; for the POWs of the Second World War the study of Rintamaki was in 2009 and the

time elapsed since release was about 65 years which indicated that just those who were the youngest during their repatriation were still alive because the study participants completed a mailed survey. This may also be the case for other studies except the POWs of Vietnam War which ended in 1975 and perhaps POWs with different age joined in Feder's study in 2008.

The period Iraqi POWs stayed in captivity show different durations (table 4.1) and is supported by previous studies of the author (Al-Ameri, 2008) who reported that 87% of the total sample spent between six to 21 years in captivity. About half of the Iraqi POWs (42,000) were captured during 1982, coinciding with a major Iranian offensive and 41 thousands Iraqi prisoners of war were released in 1990 (ICRC, 2004), meaning that approximately half of Iraqi prisoners of war had spent 6 to 13 years in captivity. Iran began to release prisoners again in a large numbers after 1998 and so the rest spent 14 to 21 years in prison (ICRC, 2004).

According to the study of Zeiss et al. (1985) the POWs of the Second world War stayed for a period ranging from 6-26 months; the average length of captivity the POWs held in Vietnam was five years and three months (Hourani & Hilton, 2002); and for Croatian POWs duration of captivity ranged from 6-9 months (Kozarić-Kovačić & Folnegović-Šmalc, 1998).

Regarding the Time elapsed since release the formal release of POWs took place in August, 1990 (41,000 IPOWs were released) and continued until May, 2003 (55 IPOWs) after Iraq was invaded by a coalition led by the USA (ICRC, 2004). Within the 23 years (1990 to 2003) most the Iraqi prisoners of Iran-Iraq war (about 75,000) had been released and about 10 thousand chose to stay in Iran (ICRC, 2004). The study also revealed that more than half of those (table 4.1) who joined in the study were released after the year 2000. This high percentage of participants from those released after year 2000 could be because many were not able to finish all the requirements of their retirement, as a result of the invasion by the USA led coalition, and also would be in contact with the authorities in Baghdad. The Iraqi Ministry of Defence was dissolved and they began again to follow up the process of the retirement after reforming a new Ministry of Human Rights which shouldered the responsibility of the IRPOWs.

The wide differences in monthly income (range) might be due to the differences in the rank, duration of captivity, and the varying duration the IPOWs stayed in captivity. There were differences in pensions received for those whose who preferred to take pension on release and for the others who already had a job before capture and preferred to continue in their old jobs. There were also differences depending on the type of job, level of education, and years of service.

5.2: Discussion of the reported PTSD, Anxiety, and Depression

Regarding the levels of reported PTSD at baseline (Phase one) the results of this study indicate, as expected, that more than 75% of the sample have PTSD but at different levels (table 4.2). The results of this study are supported by Al-Ameri and Mohammed (2005) who found in their study of 540 Iraqi repatriated prisoners of Iran-Iraq war that 82.00% of those repatriates had PTSD; 46.32% with moderate level; and 35.68% with severe level. Hassan and Hassan (1995) found that the prevalence of PTSD among Iraqi repatriated prisoners of Iran-Iraq was estimated between 55% and 97%. Al-Samarai (1994) revealed in his study on 106 of Iraqi repatriates that 71.9% were diagnosed with PTSD. There is broad agreement between these studies and any differences in prevalence could be due to differences in duration of captivity and the time elapsed since release because the studies took place at various times. Kluznik and colleagues (1986) found in their study that 67% of the sample selected from of American former POWs of the Second World War experienced PTSD. Sutker and colleagues (1990) presented that symptoms of PTSD were seen in (90.0% to 100%) of POWs of the Korean conflict; and Sutker et al. (1993) revealed that (78.0%) of Second World War of Pacific theatre POWs were inflicted with PTSD. These are similar to the results from Iraq and suggest that wartime captivity is difficult experience that is very likely to result in some level of PTSD.

Regarding the levels of reported Anxiety the study revealed a high percentage of reported anxiety (62.0%) within baseline sample (table 4.5). The results are supported by Al-Ameri and Mohammed (2005) who revealed in their study that 78% of their sample (n= 540) were inflicted with anxiety. But the differences in percentage between

the two studies could be as result to the time elapsed since release and the time of the studies. Sutker et al. (1990) indicated that (45%) of the sample selected from American former POWs of the Korean Conflict had anxiety. This lower level might again be due to the reduced duration of captivity, the circumstances of imprisonment and the different time elapsed since release. However, Al-Samarai (1994) indicated that only 15% of another sample of Iraqi repatriated POWs was inflicted with anxiety. This discrepancy may be because Al-Samarai interviewed those repatriates immediately after their release (One Week) and the actual psychological symptoms might have been masked by the happiness of repatriation to their homeland and families; anxiety may have therefore emerged as these positive feelings subsided.

The results of table 4.8 indicate that 63.0% of the sample has reported varying degrees of depression. The results of Phase one for both groups are supported by Al-Ameri (2005) who indicated that 72% of the sample selected suffered from depression. This percentage is considered extremely high in comparison with the prevalence in the general population (3-4%) (Al-Samarai, 1994); Sutker et al. (1990) revealed that 75% of American former POWs in the Korean Conflict suffered from different levels of depression. Al- Samarai (1994) indicated that 41.5% of Iraqi repatriates suffered from depressive disorder; Tennant et al. (1997) said that 26.9% of repatriates of Vietnam War had suffered from depression, and Escobar et al. (1983) indicated in their study that 49% of the former American POWs of Vietnam War suffered from depression. These previous studies tend to have lower prevalence for depression which could be due to different circumstances of the studies, different duration of captivity, different rank, different age at capture, and how long since they were released from captivity.

Regarding the degree of satisfaction (table 4.11) with the social support provided by family members or friends of those repatriates and the number of those members (table 4.14), the study indicated that the majority had different degrees of satisfaction and different numbers of support which could be accessed. It is clear from the results that the satisfaction of those repatriates and the number of supporters were not stable for the sample within the period of the programme and nine months after it.

This could be due to the instability in their relationships with others or due to problems in maintaining these relationships with friends given the poor situation and associated security problems in Baghdad. Because this is the first study which has studied the effect of a psychosocial programme on IRPOWs so the researcher cannot find any Iraqi study to compare but Ursano et al. (1996) found that social support plays a major role in post-captivity outcomes related to adjustment.

5.3: Discussion of coping strategies used by the IRPOWs

Coping strategies can operate in combination with one another, and the effectiveness of these strategies might differ as a result of other strategies that are adopted at the same time or in sequence (Tennen et al., 2000). Therefore, if there are additive effects then it might be counter-productive to examine the effectiveness of one strategy against another (Lazarus, 2000). As an alternative, it might be favourable to examine the combinations of coping strategies used (Matheson & Anisman, 2003). For example, even if two persons both use active coping as a main strategy, one of those persons might accompany the active coping with humour, while the other person might accompany it with religion (Matheson & Anisman, 2003). The latter combination may lead to an ability to find meaning and value in the situation (Janoff- Bulman & Frantz, 1997). Obviously, much information can be missed if coping strategies are tested separately and in isolation of one another, as this does not include the complete nature of coping, including the interaction among strategies (Matheson & Anisman, 2003). In addition to being situation-specific, coping strategies may differ with the passage of time and with changes within the person (Tennen et al., 2000).

The findings of table 4.17 indicate that, for general coping, most of the sample copes at a medium level but table 4.20 shows the levels of coping for all 14 items individually. This study is the first study in Iraq that includes an assessment of coping strategies within the Iraqi prisoners of Iran-Iraq war, 1980-1988 and the effects of a rehabilitation programme for those repatriates. So there is no Iraqi study to compare these results with.

The study indicates that most of the IRPOWs adopt more problem-focused strategies (active coping, planning, positive reframing, and instrumental support) in dealing with the stressful situation. The participants were able to concentrate, focus and take active steps to reduce or remove the effect of stressor in order to make the matter be better (active coping); furthermore, a high percentage of the repatriates think about the necessary and organized steps of how to cope and think about what steps are to be taken in order to handle the problem and have the insight to decide to overcome the problems that cause stressors (planning); to see the situation in different view and more positively to try to find something good in what happens. This gives the ability to reframe what is considered to be a stressful situation (active reframing); and finally seeking specific kinds of assistance and advice from others, such as family members and friends, to help them change different situations that might cause stress, for example: information, financial support, or expertise, and asserting opinions and boundaries that lead them to not only change their circumstances, but also feel more empowered (instrumental support). This could be explained by the long sufferings mixed with hardships, difficulties, and problems which may help them learn strategies for coping that serve them well in life once.

IRPOWs also adopt emotion-focused strategies (table 4.20) side by side with the problem-focused strategies in dealing with the stressful situations which could not be changed, so they believe that they cannot change everything which happens but they can accept the fact that it has happened and what they need to do is to live with it (acceptance); IRPOWs use jokes, fun, and good humour in order to reduce the effects of stressor on their life. They use this strategy when they cannot change the situations which cause more stress (humour). This result is supported by Fairbank et al. (1991) and Henman (2001) when indicated in their studies that former American POWs of Vietnam War used social humour as one of the coping strategies with stress. One of the most effective strategies to cope with stressful situations for the IRPOWs could be religion (96.7% of them have medium to good levels) (table 4.20). Because religion plays a huge role in all directions of their life; beliefs, tenets, commitments, morals, education so most IRPOWs find their relief from stressors or difficult circumstances by

praying and repeating rituals. These results are supported by (Noorbala & Narimani, 2005) who revealed that the majority of Iranian POWs (89%) have used praying and meditation as coping style to deal with stress. In contrast, the results of table 4.8 show that when considering substance use (alcohol or drugs) only 9.7% of IRPOWs adopt this strategy in coping with stress. This is because most of them believe that having alcohol or other drugs is prohibited by their religion and against the wish of God. 91.3% of IRPOWs use emotional support (medium and good levels) as means to cope with stress and this could be related to Islamic teachings, which motives Muslims to help each other and to build brotherly relationships within the society. IRPOWs feel that it is an ordinary thing to go to friends or other family members in order to get support, help or advice in time of stressful situations. This is supported by Fairbank et al. (1991) and Ursano et al. (1996) when they indicated that former American POWs of Vietnam War used social support in coping with stress. Distracting themselves through different actions as emotion-focused strategies 91.7% of IRPOWs use this strategy in medium and good levels and may help them feel relatively better in the short time, but can be disturbing in the long time. This might be due to the many problems they face during their lives so they cannot manage all of them as problem-focused strategies. Another strategy is coping by denying the existence of problems and more than half of IRPOWs use this strategy at a medium level. This could be as result of not be able to overcome or face the problems directly. Using magnification with reciting some rituals or reading some verses from Qur'an or to pray to God as means of relief from stress is the way that many IRPOWs vent in order to lessen the effects of stressful situations. That is because most of them believe that in doing these commitments the God would help them surpass these difficulties. Finally some IROPWs blame themselves for the existence of problems that cause stress. Fairbank et al. (1991) also indicated that former American POWs of the Vietnam War were used to coping with stress by blaming themselves.

5.4: Discussion of the Differences between the Control group and Intervention group regarding Demographic characteristics, PTSD, Anxiety, depression, Social support, and Coping.

Before considering the effectiveness of the intervention it was important to ensure that the characteristics of the intervention and control groups were as similar as possible before the start of the intervention.

This study found no significant difference between the two groups regarding demographic characteristics (tables 4.21 & 4.22); PTSD, Anxiety, Depression, Social support, and coping (table 4.23). These results are expected because the sample of the study was randomly selected in order to minimise this possibility.

5.5: Discussion of the association between demographic characteristics and reported PTSD, anxiety, depression, social support, and coping.

Table 4.24 revealed that the level of reported PTSD, Anxiety, and Depression in this study was not affected by how old the IRPOWs were at the time of the study or at the time of their capture; how long they remained in captivity; salary; by how long since they have been repatriated; level of education; or rank. For PTSD, anxiety and depression the non-significant association could be explained that these disorders could affect different age groups which mean that young and old people have the same chance of being inflicted by them. Regarding the duration of captivity most of the participants had spent long periods in captivity, so we might expect not to see a significant association. These findings are supported by Al-Ameri and Mohammed (2005) who found in their study on 540 Iraqi repatriated prisoners of Iran-Iraq war, 1980-1988 that the levels of reported PTSD, anxiety, and depression were not affected by the current age; or age at capture; or duration of captivity, and time elapsed since release.

5.6: Discussion of the association within coping strategies

Table 4.25 shows a significant association within the problem-focused strategies (active coping, planning, and reframing) used by IRPOWs. This could be as a result of believing that problem-focused coping is necessary to help them move through those

hard times. In addition, the long and multi-faced experiences could make them struggle to solve their problems directly.

5.7: Discussion of the associations between PTSD, anxiety, and depression.

The study revealed a negative correlation between PTSD and depression (table 4.26), which suggests that those who reported higher levels of PTSD reported lower levels of depression. This finding is not supported by Breslau et al. (1991); and Kessler et al. (1995). But Connor and Butterfield (2003) found that only 25% of individuals diagnosed with PTSD have depression; Kozarić-Kovačić et al. (2001) found that only 31% of veterans with PTSD have co-morbidity with major depression; Zlotnic et al. (1999) found that only 43% of subjects were in an episode of major depression; and Kluznik et al. (1986) documented that only 24% of the Second World War POWs with PTSD have major depression. This could be interpreted that some of those repatriates are still suffering from the symptoms of PTSD more than they are suffering from depression.

Regarding the association between PTSD and anxiety table 4.26 indicated that there is a negative correlation between these two disorders. This could be because PTSD and anxiety are two different concepts and affect the person differently or this could be interpreted that some of those repatriates are still suffering from the symptoms of PTSD more than they are suffering from anxiety. Similar results were found by Zlotnic et al. (1999). They found in their study that only 28% of the patients with anxiety disorder met criteria of PTSD; and Kluznik et al. (1986) documented that only 55% of the Second World War POWs with PTSD have anxiety; and Connor and Butterfield (2003) found that about 50% of individuals diagnosed with PTSD have anxiety.

For the correlation between anxiety and depression table 4.26 shows a moderate association between the two disorders ($r= 0.56$, $p= 0.01$). This association is to be expected (Breslau et al. (1991).

5.8: Discussion of the differences in dropout group

Before considering the effectiveness of the intervention we need to be sure that the participants who did not complete the intervention were not different in any way to

those completing the programme. In order to explore this logistic regression was performed to see if any characteristics at phase one could predict subsequent dropout. According to the results in table 4.27 regarding the model coefficients; table 4.28 regarding the classification; and table 4.29 regarding the variables in the equation, the logistic regression indicate that there were no clear differences between those who completed Phase four (n= 79) and those who dropped before Phase four (n= 13). The results of this study should therefore be generalizable to the population of IRPOWs from which these participants were sampled which is a major strength of the study.

5.9: Discussion of the Intervention

5.9.1: Discussion of the changes in levels of reported PTSD.

The control group and intervention group were changing over time but in different modes (figure 4.1): Where there was a minor increase in the level of reported PTSD in Control group through the four Phases there was a dramatic decline in PTSD in Intervention group. This result could be because the IRPOWs in control group had not received any intervention whether institutional or governmental. So the participants of intervention group seemed to get benefit from joining in the programme. The researcher noted that they were keen to attend the sessions and cooperated and reacted well to what they heard in these sessions. Those participants seemed to get use from this programme and not just as former POWs but also as civilians who were facing many burdens as a result of poor security situation and the fluctuations of political situations in Iraq in general and in Baghdad particularly. Foa et al (1995) applied a brief programme of prevention for female assault survivors. The programme included a number of techniques helpful in treating chronic PTSD, such as exposure, relaxation training, and cognitive restructuring. He found that seven out of ten participants no longer met PTSD symptoms criteria. Knaevelsrud and Maercker (2007) reported after conducting an internet-based cognitive behavioural therapy (CBT) over a 5-week period that 74% of those with initial PTSD treated by this therapy had changed diagnostic category.

5.9.2: Discussion of the Changes in levels of reported Anxiety and Depression

Both groups showed change in anxiety and depression levels over the period of intervention (figure 4.2 & 4.3). There were increases in the levels of anxiety and depression in intervention group in spite of the continuity of the programme which hoped to decrease these levels. This could be as a result of long anxious waiting times at a large number of checkpoints distributed a long all the mean streets of the capital Baghdad that the participants were required to negotiate in order to reach the intervention sessions. If they live on the other side of the Tigris river they must leave the car or the bus and across the river on foot. Some of the participants had to leave their houses two hours before the time of the session in order to attend. And if there was an explosion or blast, all the areas near the site of explosion would close for no less than two hours. All these causes may increase the levels of anxiety and depression in the intervention group over and above the control group who were not required to travel. These circumstances were exaggerated due to the negative reaction to political conflicts between the Iraqi parties and groups due to the delay of the general Election in Iraq. This was followed by a series of explosions, assassinations, and killings between these different groups. The election was supposed to be held in 6th of January, 2010 and was postponed to 6th of March the same year.

This then raises the question of why the difficult security circumstances might affect the levels of anxiety and depression in the intervention group but not affect their improvements in PTSD. As discussed in the literature review anxiety will be affected by frequent exposure to fear responses (Barlow, 2002; & Yonkers et al., 2003) and depression will also be affected by current circumstances as well as the prior trauma (Caspi et al., 2003; haeffel et al., 2008; & Slavich, 2004). PTSD in contrast may well be more strongly influenced by the prior trauma events and recollection of these than by currently difficult circumstances (Brewin et al., 2000; & Hoge et al., 2004).

5.10: Strengths and weaknesses of the study

Every study has its own weaknesses and strengths especially if it is conducted within exceptional circumstances. For the present study, in spite of the large quantity of good results there were obstacles which could have resulted in weaknesses.

5.10.1: Weaknesses of the study

1- The participants of this study were recruited from the city Baghdad only due to the difficulties for those who live outside Baghdad to participate in the study. This could mean the sample was not representative of the wider population of IRPOWs.

2- Due to the turbulent circumstances and the instability in security situation under the occupation of Iraq many security procedures were taken in order to minimize the casualties of terrorist operations against both civilians and allied forces. Many streets were closed and strict checkpoints were held not just on main roads but also in small streets. All these circumstances might increase the levels of reported Anxiety and Depression in the intervention group who were required to travel to the intervention venue on a regular basis.

3- Some groups suggested attending some sessions of the intervention in one of the participant's houses. This arrangement might have lessened the stress of these groups compared to the other groups and this may have distorted the results somewhat. However we would expect this distortion to correct some of the potential bias caused by excess travel in the intervention group.

4- All the participants who joined the study were retired but none of them mentioned whether they had another job which might add an extra monthly income.

5- All the IPOWs who participated in the study were married so the results are not generalizable to the population of unmarried IRPOWs.

6- There are possibly some differences at Phase one between the level and satisfaction with support between the intervention and control groups that may have introduced some bias into the analysis.

7- The researcher was himself a POW in the Iran-Iraq war. This situation might have introduced an unintended bias. However data collection instruments were previously validated so this should have minimised any researcher bias.

5.10.2: Strengths of the study

1- The study is the first study which applied a psychosocial rehabilitation programme for IRPOWs in Iraq.

2- The number of participants who joined in this study was good (No. = 92).

3- There were no differences between the control group and intervention group at the time of recruitment (Phase one).

4- The number of participants who dropped out was small (No. = 13).

5- The dropout participants' characteristics were not different to those completing the study so dropout should not affect the overall results of the study.

6- In spite of the security problems in Baghdad the participants' attendance was very good (87%).

7- Because the researcher was also a POW from the same war he found that there was an excellent response from those POWs who he met during the recruitment. The researcher believes that this situation was a good motivation for them to take part in the study in these large numbers and also to stay to the end of the study. For the intervention group the researcher found that there were no obstacles in social interaction or psychological readiness or willingness and he was aware of using certain words, phrases, and sentences in addressing them.

CHAPTER SIX

CONCLUSIONS
&
RECOMMENDATIONS

6- Conclusions & Recommendations

6.1: Conclusions

According to the interpretation and discussion of the findings, it can be concluded that:

6.1.1: The mean of the scores for the sample were: age at the time of study was 54.8 years, and age at the time of capture was 27.4 years; duration of captivity was 16.6 years; time elapsed since released from captivity was 11 years at the time of the study. The age of IPOWs at capture is considerably older than those of the Second World War, Korean War, and Vietnam War, and duration of captivity considerably longer than in previous conflicts.

6.1.2: 78.3% of IRPOWs have PTSD to some degree; 62.0% have some level of anxiety; and 63.0% have mild to severe depression. These percentages are high in comparison with other percentages of POWs of the Second World War, Korean War, Vietnam War, and Gulf War. This could be as a result to the long periods the IRPOWs spent in their captivity and also to the special circumstances they faced after their repatriation due to the international Embargo imposed by the United Nations after Iraqi invasion to Kuwait in 1990.

6.1.3: Most of IRPOWs (85.9%) have degrees of satisfaction with social support ranging from 2-5; and 80.5% of them have 3-6 support persons. The vast majority 95.5% also have medium to good levels of coping.

6.1.4: There were no significant differences at the start of the study between the Control group and Intervention group on: currant age, age at capture, duration of captivity, and time elapsed since released, monthly income, level of education, and rank. Sampling was effective in ensuring that the 2 groups were as similar as possible in their general characteristics.

6.1.5: There were also no significant differences between the control group and intervention group for the conditions of interest: PTSD, anxiety, depression, social support, and coping at the start of the study. Sampling was effective in ensuring that the 2 groups had similar distributions of the conditions of interest before the psychosocial intervention.

6.1.6: No significant associations were found between demographic characteristics and PTSD, Anxiety, Depression, social support, and coping. This suggests that all study participants had similar risks of mental ill health regardless of their backgrounds. There was a significant association between depression and anxiety as expected from the literature but not between the other conditions of interest. This suggests that in this population vulnerabilities to PTSD, anxiety and depression are not necessarily related.

6.1.7: There was a significant decline in the levels of reported PTSD, but an increase in the levels of reported Anxiety and Depression over time in the Intervention group. This suggests that the intervention was successful in assisting participants in reducing their levels of PTSD but this was not associated with a reduction in anxiety and depression. This might have been due to the difficult security situation which made the increased travel that the intervention group had to undertake very stressful. This increased stress may have a negative effect on anxiety levels and depression in the intervention group but not had a similar effect on their PTSD which may be more related to their previous trauma.

6.2: Recommendations

According to the study conclusions, the author recommends that;

6.2.1: Improved mental health services should be provided in primary care and confidential counselling provided through employee-assistance programmes for IRPOWs in order to reduce levels of PTSD, anxiety and depression.

6.2.2: Construction of further psychosocial rehabilitation programmes for IRPOWs in other Iraqi provinces to help them reduce their PTSD and assist them to learn various coping strategies.

6.2.3: For the Iraqi government to set a plan to identify and evaluate the psychological conditions for other IRPOWs groups, including those living in other towns and rural areas and to set follow-up studies to explore their progress.

CHAPTER SEVEN

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7- References

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APPENDICES

APPENDIX ONE

Certificate of
The International Committee
Of Red Cross (ICRC)

INTERNATIONAL COMMITTEE OF THE RED CROSS

اللجنـــــة الـــــدوليـــــة للصلـــــيب الأحـــمـــــر

TO WHOM IT MAY CONCERN

The International Committee of the Red Cross (ICRC) hereby certifies that according to its records

Mr.

was captured by the Armed Forces of the Islamic Republic of Iran on 26.03.1982. He was registered at the border by ICRC delegates on 22.01.2002.

He was repatriated to the Republic of Iraq on 22.01.2002 under the auspices of the ICRC.

Baghdad, 25.06.2002

الى من يهمه الامر

تشهد بعثة اللجنة الدولية للصا [illegible] استنادا الى ملفاتها بأن المذكور أدناه :

رقم الصليب الاحمر : ٧١٥٥٣

المولود في ١٩٥٧

الجنسية : عراقية

تم اسره من قبل القوات المسلحة لجمهورية ايران الاسلامية في ١٩٨٢/٣/٢٦ ؛ وقد تم تسجيله على الحدود من قبل مندوبي اللجنة الدولية للصليب الاحمر في ٢٠٠٢/١/٢٢ .

هذا وقد أشرفت اللجنة الدولية للصليب الاحمر على عودته الى جمهورية العراق في ٢٠٠٢/١/٢٢ .

بغداد ، ٢٠٠٢/٦/٢٥

N.S.Only the English version is considered as the authenticate one.

تعتبر النسخة الانكليزية من هذه الشهادة هي الاصلية .

APPENDIX TWO

Consent of the
Iraqi Ministry of Planning &
Developmental Cooperation
Baghdad/ Iraq

Republic of Iraq
Ministry of Planning and Developmental Cooperation
The Central Body of Statistics and Information Technology

Baghdad – Arasaat Al-hindiya, Iraq
The Transf. 7783899-7783893 fax: 7780921
The website: http//www.iraqcosit.org

No. 1/3/1/11/5109
Date: 23/11/2009

To \ Ministry of Higher Education & Scientific Research
Scholarship & Cultural Relations Directorate
Department of affairs of students Abroad
Sub\ Scholarship Student

****

Best regards by The Central Body of Statistics and Information Technology,
In reference to your note SB\22506 in 17/11/2009, we have no objection that Mr. Maan Hameed Ibrahim, a scholarship student to obtain PhD degree in the specialization of Mental Health, retrieve data from his research sample, Iraqi Repatriated prisoners of Iraq-Iran War, provided that the dealing with the included prisoners be accurate.

To review, with regards...

Dr. Mahdi Al-'alaq
The deputy of Minister
The Head of the Central Body of Statistics and Information Technology
22/11/2009

APPENDIX THREE

Letter of Facility
Studies and Researches Department/
Iraqi Ministry of Human Rights
Baghdad/ Iraq

Republic Of Iraq
Ministry of Human Rights
Directorate of Studies and Researches

No. 21605
Date: 6/12/2009

To \ Ministry of Higher Education & Scientific Research
Scholarship & Cultural Relations Directorate
Department of affairs of students Abroad
Sub\ Scholarship student

In reference to your note No. 22528 in 17/11/2009 concerning the facilitating the task of Mr. Maan Hameed Ibrahim, scholarship student in the UK, to obtain a PhD degree in the specialization of Mental Health, we have no objection to show any help we can for him to conduct his research entitled "Effectiveness of a Psycho-social Rehabilitation Program for the Iraqi Repatriated prisoners of Iraq-Iran War, 1980-1988", and help him to collect the sample of his research within the scope of our ministry.
To review, with regards...

Abdul-Kareem Ali Belal
The Research Manager
6/12/2009

Cc\
Directorate of Studies and Researches to view with regards,
Mr. Maan Hameed Ibrahim...with regards,

APPENDIX FOUR

The Participant's Information Sheet
Liverpool John Moores University
Liverpool/ United Kingdom

PARTICIPANT INFORMATION SHEET

LIVERPOOL JOHN MOORES UNIVERSITY
PARTICIPANT INFORMATION SHEET

Title of Project;
"Effectiveness of a Psychosocial Rehabilitation Programme for Iraqi Repatriated Prisoners of the Iran-Iraq war, 1980-1988."

You are being invited to take part in a research study that is being sponsored by the Ministry of Higher Education and Scientific Research of Iraq. Before you decide it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask us if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part or not.

What is the purpose of the Study?
The purpose of this study is:-

(1)- To explore; - the incidence of Posttraumatic Stress Disorder in Iraqi former prisoners of Iraq-Iran War, 1980-1988.
(2) The levels of social support and Posttraumatic Stress Disorder in those prisoners.
(3) To examine the effect of a psychosocial rehabilitation programme on Iraqi former prisoners of Iraq-Iran war, 1980-1988.

Do I have to take part?
Your participation is voluntary. It is up to you to decide whether or not to take part. If you do you will be given this information sheet and asked to sign a consent form. You are still free to withdraw at any time and without giving a reason. A decision to withdraw will not affect your rights/any future treatment/service you receive.

What will happen to me if I take part?
You will be involved in this study for 9 months. The participants will be divided into two groups. Group ONE will receive an intervention that will last for 12 weeks, of about an hour every week. The intervention will consist of training to enhance coping skills and stress management. Group TWO will not receive the intervention.

Participants will be randomly allocated to one of the two groups by asking potential participants to pick ONE of two envelopes. One envelope will be marked "INTERVENTION" and the other envelop will be marked "CONTROL;"and participants will be allocated to the appropriate group.

Therefore, whether you receive the intervention or not will depend on what group you are allocated in.

Whether you receive the intervention or not, participation in the study will require that you complete four questionnaires on four separate occasions, over a period of 9 months. The questionnaires will need completion at (1) the beginning of study, (2) six weeks later, (3) twelve weeks after commencement in the study. Nine months after starting in the study you will complete the same questionnaires for the fourth time.

If you are allocated to the control group you will receive the care that you are currently receiving. I will, however, contact you by telephone and arrange to meet with you at a convenient time for the completion of the questionnaires in six weeks, 12 weeks and nine months time.

If you are in the intervention group, you will complete the questionnaires at six weeks, 12 weeks whilst undertaking the intervention. I will contact you by telephone and arrange to meet with you at a convenient time for the completion of the questionnaires nine months time.

Are there any risks/ benefits?
Participating in this study might cause discomfort and inconvenience to you due to the circumstances which currently exist in Iraq.

Participants in the intervention group, however, will benefit from the psychosocial programme which will include coping strategies and stress management.

Will my taking part in the study be kept confidential?
Confidentiality will be guaranteed, so no names or identifying features will be revealed during the study or the written up report of the study. All data will be carefully stored on a password protected computer and data will NOT be shared with the ministry in raw form.

Who is involved in the study?

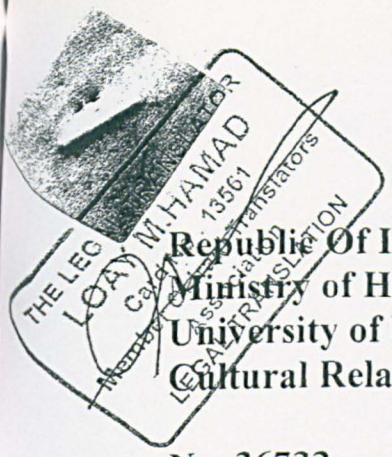
Maan Hameed Ibrahim Al-Ameri, Post-graduate Student, Faculty of Health & Applied Social Sciences, Liverpool John Moores University- Principal Investigator.

The study will be supervised by:-

Dr. Akhtar H. Wallymahmed, Faculty of Health & Applied Social Sciences, Liverpool John Moores University, England.
Professor Dr. Fiona Irvine, Faculty of Health & Applied Social Sciences, Liverpool John Moores University, England.
Mrs Lorraine Burgess, Faculty of Health & Applied Social Sciences, Liverpool John Moores University, England.
Professor Dr. Eqbal Gh. Mua'lla , University of Baghdad, Iraq

APPENDIX FIVE

Letter of Facility
University of Baghdad
Baghdad/ Iraq



Republic Of Iraq
Ministry of Higher Education & Scientific Research
University of Baghdad
Cultural Relations Dept.

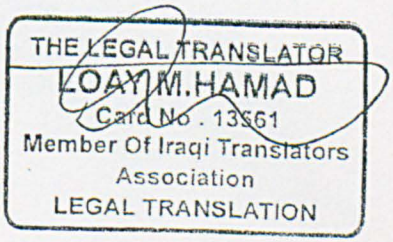
No. 36732
Date: 24/12/2009

To the Ministry of Higher Education & Scientific Research
University of Baghdad\ Fellowships
Sub\ Scholarship Student

Best regards,
In reference to your note No. S.B. 22654 in 18/11/2009, we herby annex a copy of the College of Nursing at out University No. 4339 in 9/12/2009 including the facilitating of the task of scholarship student in the UK to Mr. **Maan Hameed Ibrahim.**
With regards,

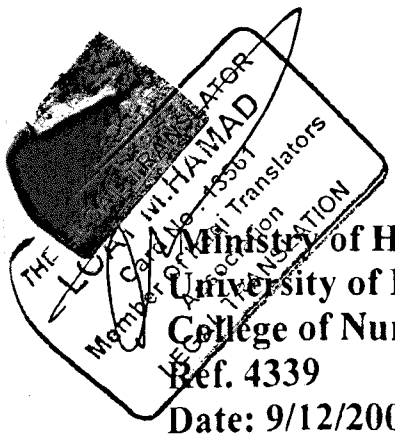
Prof. Dr. Riyadh Aziz Hadi
Vice president of the University\ Scientific affairs

Cc\
- Denary of the college of nursing \ the Dean\ in reference to your note. With regards.
- Cultural relations.



APPENDIX SIX

Letter of Facility
College of Nursing/ University of Baghdad
Iraq



Ministry of Higher Education & Scientific Research
University of Baghdad
College of Nursing
Ref. 4339
Date: 9/12/2009

To the University of Baghdad\ Cultural Relations
Sub\ Scholarship Student

Bets regards,
In reference to your note 32990 in 19/11/2009, we would like to inform you that our college has facilitated the tasks of student, **Mr. Maan Hameed Ibrahim**, and according to what was provided in your note.

With regards,

Prof. Dr. Mohammed Fadhil Khalifa
The Dean

Cc\
Scientific asst.
Higher studies
The outgoing

APPENDIX SEVEN

Confirmation of the letters of Facility
Iraqi Embassy
Iraqi Cultural Attaché
London

EMBASSY OF
THE REPUBLIC OF IRAQ
LONDON
CULTURAL ATTACHÉ

سفارة جمهورية العراق
لندن
الملحقية الثقافية

Reference No.: 948/2010-161
Date: 25/5/2010

العدد: 948/2010 – 161
التاريخ: 25/5/2010

To: Liverpool John Moores University

Ref: Mr. Maan Hameed Ibrahim Al-Ameri / 161

Dear Sir/Madam:

This is to confirm that the above named student traveled to Iraq for data collection purpose related to his project from October 2009 to April 2010. During that, he visited (Ministry of Human Rights – University of Baghdad - Ministry of Planning and Development Cooperation – College of Nursing). They were very helpful and supported him to meet the participants in his project.

Please do not hesitate to contact me for any future reference.

Yours faithfully

B. Hb

Prof. Bakir AL-Hashemy
Cultural counselor

For office use only:

نسخة منه الى:

- ملف الصادر العام، ملف الصادر المصور.
- ملف المتفرقات، ملفه المصور.

على 2010/5/25

20 Queen's Gate, London SW7 5JE
www.iraqiculturalattache.org.uk

APPENDIX EIGHT

Participant's Consent
Liverpool John Moores University
Liverpool/ United Kingdom

LIVERPOOL JOHN MOORES UNIVERSITY
CONSENT FORM

Title of Project
"Effectiveness of a Psychosocial Rehabilitation Programme for Iraqi Repatriated Prisoners of the Iran-Iraq War, 1980-1988"

Maan Hameed Ibrahim Al-Ameri
Faculty of Heath and Applied Social Sciences.

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and that this will not affect my legal rights. ☐
3. I understand that any personal information collected during the study will be anonymised and remain confidential ☐
4. I agree to take part in the above study ☐

Name of Participant	Date	Signature
Name of Researcher Maan Hameed Ibrahim Al-Ameri	Date	Signature
Name of Person taking consent *(if different from researcher)*	Date	Signature

Note: When completed 1 copy for participant and 1 copy for researcher

APPENDIX NINE

Hospital Anxiety & Depression scale
(HADs)

Hospital Anxiety and Depression Scale (HADS)

Emotions play an important part in most illnesses. This questionnaire is designated to help the researcher to know how you feel. Read each item and **underline** the reply which comes closest to how you have been feeling in the past week.

Do not take too long over your replies; your immediate reaction to each item will probably be more accurate than a long thought-out response.

1- I feel tense or 'wound up':

- Most of the time
- A lot of the time
- From time to time, occasionally
- Not at all

2- I still enjoy the things I used to enjoy:

- Definitely as much
- Not quite so much
- Only a little
- Hardly at all

3- I get a sort of frightened feeling as something awful is about to happen:

- Very definitely and quite badly
- Yes, but not too badly
- A little, but it doesn't worry me
- Not at all

4- I can laugh and see the funny side of things:

- As much as I always could
- Not quite so much now
- Definitely not so much now
- Not at all

5- Worrying thoughts go through my mind:

- A great deal of the time
- A lot of the time
- From time to time but not too often
- Occasionally

6- I feel cheerful:

- Not at all
- Not often
- Sometimes
- Most of the time

7- I can sit at ease and feel relaxed:

- Definitely - Usually - Not often - Not at all

8- I feel as if I am slowed down:

- Nearly all the time - Very often - Sometimes - Not at all

9- I get a sort of frightened feeling like 'butterflies' in the stomach:

- Not at all - Occasionally - Quite often - Very often

10- I lost interest in my appearance:

- Definitely - I don't take as much care as I should

- I may not take quite as much care - I take just as much care as ever

11- I feel restless as if I have to be on the move:

- Very much indeed - Quite a lot - Not very much - Not at all

12- I look forward with enjoyment to things:

- As much as ever I did - Definitely less than I used to

- Rather less than I used to - Hardly at all

13- I get sudden feelings of panic:

- Very often indeed - Quite often indeed - Not very often - Not at all

14- I can enjoy a good book or radio or TV programme:

- Often - Sometimes - Not often - Very seldom

APPENDIX TEN

Short Form Social Support Questionnaire
(SSQ6)

Social Support Questionnaire (SSQ6)

The following questions ask about people in your environment who provide you with help or support. Each question has two parts. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Give each person's initials and their relationship to you. Do not list more than one person next to each of the numbers beneath each question. Do not list more than six people per question.

For the second part, using the scale below, circle how satisfied you are with the overall support you have.

6	5	4	3	2	1
Very Satisfied	**Fairly Satisfied**	**A little Satisfied**	**A little Dissatisfied**	**Fairly Dissatisfied**	**Very Dissatisfied**

If you have no support for a question, tick the word "No one", but still rate your level of satisfaction. The example below has been completed to help you:

Example:
Who can you trust with information that could get you in trouble?

No one 1 3 5
2 4 6

How satisfied?

6 5 4 3 2 1

1- Who can you really count on distract you from your worries when you feel under stress?

No one 1 3 5
2 4 6

How satisfied?

6 5 4 3 2 1

2- Who can you really count on to help you feel more relaxed when you are under pressure or tense?

No one 1 3 5

2 4 6

How satisfied?

6 5 4 3 2 1

3- Who accepts you totally, including your worst and your best points?

No one 1 3 5

2 4 6

How satisfied?

6 5 4 3 2 1

4- Who can you really count on to care about you, regardless of what is happening to you?

No one 1 3 5

2 4 6

How satisfied?

6 5 4 3 2 1

5- Who can you really count on to help you feel better when you are feeling generally down-in-the-dump?

No one 1 3 5

2 4 6

How satisfied?

6 5 4 3 2 1

6- Who can you count on to console you when you are very upset?

No one 1 3 5

2 4 6

How satisfied?

6 5 4 3 2 1

APPENDIX ELEVEN

Brief COPE Questionnaire

The Brief Cope Scale:

There are lots of ways to try and deal with stress. This questionnaire asks YOU to indicate what you generally do and feel when YOU experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Then respond to each of the following items by ticking ONE of the columns on the right. Please try to respond to each item SEPARATELY IN YOUR MIND FROM EACH OTHER ITEM. Choose your answers thoughtfully and make your answer as true for you as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for YOU, not what you think "most people" would say or do. Indicate what YOU usually do when you experience a stressful event.

PLEASE NOTE THAT THE COLUMNS FORM A SCALE FROM 1 TO 4:

1= I USUALLY DO NOT DO THIS AT ALL

2= I USUALLY DO THIS A LITTLE BIT

3= I USUALLY DO THIS A MEDIUM AMOUNT

4= I USUALLY DO THIS A LOT

		1	2	3	4
1-	I've been concentrating my efforts on doing something about the situation I'm in.				
2-	I've been taking action to try to make the situation better.				
3-	I've been trying to come up with a strategy about what to do.				
4-	I've been thinking hard about what steps to take.				
5-	I've been trying to see it in different light, to make it seem more positive.				
6-	I've been looking for something good in what is happening.				
7-	I've been accepting the reality of the fact that it has happened.				
8-	I've been learning to live with it.				

		1	2	3	4
9-	I've been making jokes about it.				
10-	I've been making fun of the situation.				
11-	I've been trying to find comfort in my religion or spiritual beliefs.				
12-	I've been praying or meditating.				
13-	I've been getting emotional support from others.				
14-	I've been getting comfort and understanding from someone.				
15-	I've been trying to get advice from other people.				
16-	I've been getting help and advice from other people.				
17-	I've been turning to work or other activities to take my mind off things.				
18-	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, or shopping.				
19-	I've been saying to myself "this isn't real.				
20-	I've been refusing to believe that it has happened.				
21-	I've been saying things to let my unpleasant feelings escape.				
22-	I've been expressing my negative feelings.				
23-	I've been using alcohol or other drugs to make myself feel better.				
24-	I've been using alcohol or other drugs to help me get through it.				
25-	I've been giving up trying to deal with it.				
26-	I've been giving up the attempt to cope.				
27-	I've been criticizing myself.				
28-	I've been blaming myself for things that happened.				

APPENDIX TWELVE

POW Questionnaire

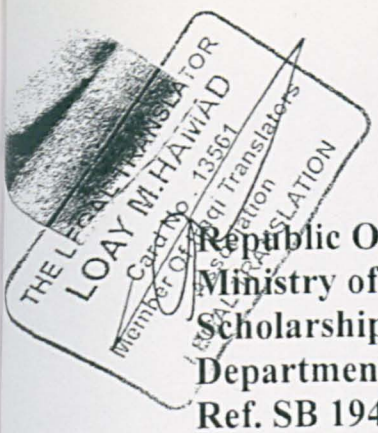
PTSD Scale related to war captivity:

Below is a list of problems that often occur in the months or years following a stressful experience such as wartime combat or experience in a prison camp. The researcher would like to know how much each of these is troubling or distressing you now.

		Does not trouble me at all	Somewhat troubling	Trouble me a great Deal
1	Recurrent painful or unwanted memories of your POW or war experiences.			
2	Painful dreams or nightmares about the stressful experience.			
3	Feeling that the stressful experiences actually happening again.			
4	Inability to feel strong emotions- especially those associated with intimacy and tenderness.			
5	Excessive alertness or excessive reactions to unexpected noises.			
6	Guilt about surviving when others did not or guilt about the things you had to do in order to survive.			
7	Avoiding activities or situations that might remind you of the stressful events.			
8	Events or situations that resemble or remind you of the traumatic experiences causing an increase in the kinds of problems listed above.			
9	How often since the war have you found yourself seriously troubled by these problems? Never..... Always..... Sometimes..... During limited periods...			
10	Please check the time periods when you were (seriously) troubled by these problems (You may check more than one time period). .....first year after release ..... first five year after release ..... ten years after release ..... more than ten years after release			

APPENDIX THIRTEEN

Letter of Facility/ Iraqi Ministry of Higher Education and Scientific Research/ Scholarship and Cultural Relations Directorate Baghdad/ Iraq



Republic Of Iraq
Ministry of Higher Education & Scientific Research
Scholarship & Cultural Relations Directorate
Department of affairs of students Abroad
Ref. SB 1941
Date: 27/1/2010

To the Iraqi Cultural Office in London
Sub\ Scholarship Student

Best regards,

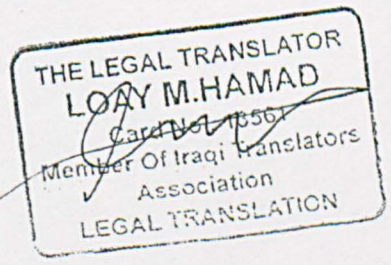
In reference to the demand submitted by the scholarship student **Maan Hameed Ibrahim**, we hereby refer to you the notes issued by the directorates in which the field studies have been conducted, hoping you informing his University, University of Liverpool John Moores, with these attached notes.

With regards,

Attached

1. Baghdad University
2. Ministry of Planning and Developmental Cooperation
3. Ministry of Human Rights

Dr. Hussein Abdullah Ridha
The Manager of Scholarship & Cultural Relations Directorate
(in proxy)
27/1/2010



Cc\

- Students abroad \ UK
- The outgoing

APPENDIX FOURTEEN

Ethical approval
Research Ethics Committee
Liverpool John Moores University
Liverpool/ United Kingdom

Ethical Approval

Ref: 09/HEA/049

Effectiveness of A psychosocial rehabilitation programme for Iraqi repatriated prisoners of the Iran-Iraq war, 1980-88

Liverpool John Moores University Research Ethics Committee (REC) reviewed the above application by chairs action and following the satisfaction of provisos, I am happy to inform you the Committee are content to give a favourable ethical opinion and recruitment to the study can now commence.

Approval is given on the understanding that:

- any adverse reactions/events which take place during the course of the project will be reported to the Committee immediately;
- any unforeseen ethical issues arising during the course of the project will be reported to the Committee immediately;
- any substantive amendments to the protocol will be reported to the Committee immediately.
- the LJMU logo is used for all documentation relating to participant recruitment and participation eg poster, information sheets, consent forms, questionnaires. The JMU logo can be accessed at www.ljmu.ac.uk/images/jmulogo

For details on how to report adverse events or amendments please refer to the information provided at http://www.ljmu.ac.uk/RGSO/RGSO_Docs/EC8Adverse.pdf

Please note that ethical approval is given for a period of five years from the date granted and therefore the expiry date for this project will be September 2014. An application for extension of approval must be submitted if the project continues after this date.

Yours sincerely
PP:

Brian Kerrigan