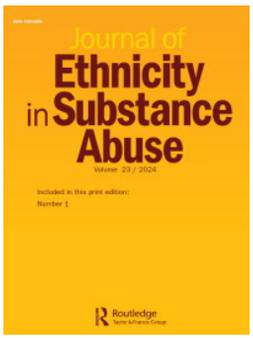

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Insights into primary care physicians' detection, intervention and management of patients with substance use disorders in Egypt

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ABSTRACT

Egypt is experiencing an increasing drug problem (cannabis, heroin, amphetamines, pharmaceutical opioids, synthetic cannabinoids). Whilst harm reduction and addiction treatment are provided by government and non-governmental organizations in Egypt, very little is known about physicians experience of handling patient substance use and substance use disorder (SUD) in primary care. A cross-sectional national study of 392 Egyptian Family Physicians (FPs) & General Practitioners (GPs) explored their knowledge, attitude and professional practice regarding management of SUD in primary care, as a first step toward identifying professional development support needs and informing general practice. Findings underscore the need for greater depth of addiction training during undergraduate medical education and in continuing professional development, so that Egyptian FPs/GPs can better prevent harmful substance use, detect patients with SUD, intervene and support those in treatment. This study provides unique information which will inform further development and scale of evidence based SUD brief intervention and treatment within Egyptian primary care.

KEYWORDS

Egypt; substance use disorders; primary care; family physicians/general practitioners; attitude and practices

1. Background

The Middle East and North African (MENA) region continues to navigate challenges in dealing with drug production, trafficking and consumption, with efforts hampered by security issues, instability, weak cross border cooperation, population displacement and lack of alternative sustainable livelihoods (Middle East & North African Harm Reduction Association, 2021 United Nations Office on Drugs and Crime (2023a). As other countries in the MENA, Egypt is experiencing an increasing illicit drug problem (cannabis, hashish heroin, amphetamine type substances, novel

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psychoactives such as synthetic cannabinoids known as *Voodoo* and *Strox*) and rising rates of non-medical use pharmaceutical opioids; e.g. Tramadol (AbdelWahab et al., 2018; El-Kouny, 2015; El-Masry & Abdelkader, 2021; El Wasify, et al., 2018; Hussien et al., 2021; Middle East & North African Harm Reduction Association, 2021; United Nations Office on Drugs & Crime, 2005, 2023a).

True prevalence rates of substance use in Egypt is unavailable due to substantial social stigma and likelihood of under reporting (Balha et al., 2021; Hamdi et al., 2013; Mneimneh, 2018; Middle East & North African Harm Reduction Association, 2021; Mohamed et al., 2021; Van Hout et al., 2023). However, in 2022 the Egyptian Ministry of Social Solidarity estimated that 5.9% of the total population was consuming illicit drugs (Ministry of Social Solidarity, 2022). Furthermore, the Freedom Drugs and HIV programme has estimated 2.8% of all Egyptians (around 2.4 million people) have significant problems with drug use and dependence.

Extant research in Egypt is concentrated on emergency room data (Azab et al., 2022). This includes studies examining the prevalence of addiction in patients undergoing elective surgery (Abdelhamid et al., 2022), drug induced psychosis (Taha et al., 2019), seizures (Shamloul et al., 2020) and psychiatric co-morbidity (Bassiony et al., 2016); as well as, non-medical use and dependence on Tramadol (El-Gohari et al., 2022; El Wasify, et al., 2018) and high risk drug use among people who inject drugs (PWID) including women (Anwar et al., 2022; United Nations Office on Drugs & Crime, 2023b; Van Hout et al., 2023). Other studies focus on young people with a family history of substance use (cannabis and benzodiazepines) and risky substance use (electronic devices, smoking, alcohol) in secondary school students (Shaheen et al., 2021; Rabie et al., 2020); and substance use (hashish, synthetic cannabinoids, Tramadol) among university students (Naguib et al., 2021; Kabbash et al., 2022; Kabbash et al., 2022; Khafagy et al., 2021; Meray et al., 2016) and adolescents (Bassiony et al., 2015) One study conducted among adults attending a Family Medicine Center revealed the prevalence of illicit drug use was 45% (EL-Zoghby et al., 2017), while drug use disorders related to tramadol use was found in 49% of male psychiatric patients in a more recent study (El-Gohari et al., 2022). Women who use drugs in Egypt are of increasing concern, given the stigmatized and hidden nature of their drug consumption (El-Bassel & Strathdee, 2015; El-Sawy et al., 2010; Hamdi et al., 2013; Middle East & North African Harm Reduction Association Middle East & North Africa Harm Reduction Association, 2013; Sabry, 2016; Van Hout et al., 2023).

The National AIDS Programme and Mental Health Directorate of the Ministry of Health and Population estimated there were 100,000 PWID in Egypt in 2015; with the United Nations Office on Drugs and Crime (2015) estimating that over 50,000 people who use drugs (PWUD) require

access to opioid substitution treatment (OST). More recently, Mahmud et al. (2020) also estimated PWID in Egypt at 90,809. Harm reduction and addiction treatment is provided by government and non-governmental organizations (United Nations Office on Drugs & Crime, 2023b). In 2020 a Ministry of Health and Population ministerial decree was issued in 2020 with regard to provision of OST in the centers and hospitals affiliated for General Secretariat of Mental Health & Addiction Treatment (GSMHAT) in Egypt.

Very little is known about the Egyptian Family Physicians (FPs) and General Practitioners (GPs) experience of handling patient substance use and substance use disorder (SUD) in primary care. Indeed, few studies originate from the MENA region examining the educational and practice needs of medical professionals in the field of addictions in primary care (Marzouqi et al., 2014). Hence, this study aimed to explore the knowledge, attitudes and practice of GPs in Egypt regarding the management of SUD in primary care, as a step toward identifying their professional development support needs regarding managing and supporting patients with SUD in primary setting, and informing further development of the role of primary care in tackling SUD within the National Plan of Egypt "Comprehensive Health Insurance" for mental health care.

2. Methods

A cross-sectional national study was conducted in 2023 to explore the knowledge, attitude, and practice of primary care physicians in Egypt regarding management of SUD in primary care. In Egypt, both GPs (those who are freshly graduated and work in primary care units before joining their residency program) and FPs (who already choose family medicine as a specialty) work as physicians in the primary care health units. A target sample size of 385 physicians was calculated with anticipated frequency of 57% among primary care physicians (Harris & Yu, 2016; Alayan et al., 2021) (95% confidence level, 0.5 proportion level and 5% margin of error) (Arifin, 2013). Inclusion criteria centered on either male or female physicians currently working in primary health care units in Egypt.

Institutional ethical approval was granted. Informed consent was obtained from all participants. On receiving the questionnaire link circulated to the participants, information regarding the research and its aim appeared on the first page which concluded with a mandatory informed consent icon, prior to the survey commencement.

No monetary rewards were given for participation. Data was collected anonymously and confidentially. Only the lead author had access to the research data and was responsible for all aspects of data collection and

analysis. Participation in the study was voluntary, and participants could withdraw at any time.

A self-completed electronic questionnaire based on previous studies which investigated current practice, attitude, and perception of physicians toward SUD in the United Kingdom (Wilson et al., 2011) and in Abu Dhabi (Marzouqi et al., 2014) was adapted by the team for the Egyptian context and consisted of **four** sections:

1. ***Demographic characteristics*** and ***practice information.*** Participants were asked to complete profile details (age, gender, professional years, workplace, and training concerning substance use).
2. ***Attitude and behavior toward substance use.*** Participants were asked to complete a 4-point Likert scale (ranging from 1 to 4 for each question) regarding their perceptions of substance use in relation to seven health behaviors (smoking cessation, exercising regularly, avoiding drinking alcohol, avoiding excess calories, reducing stress, responsible use of prescription drugs, not using illicit drugs) and the importance in promoting patients' health, preparedness to counsel patients, current effectiveness in helping patients change their behavior, and potential effectiveness in helping patients to change once adequate training and support to the GPs had been provided.
3. ***Motivations and barriers for brief intervention to SUD.*** Participants were asked to complete a 5-point Likert scale (ranging from 1 to 5 for each question) with regard to their agreement of 17 statements which described factors that may have a role in encouraging or hindering them to carry out this type of patient intervention and support.
4. ***Perception of self-efficacy.*** Participants were asked to complete the Drugs and Drug Users' Problems Perceptions Questionnaire (DDPPQ) which consists of 22 items with a 7-point Likert scale (Watson et al., 2007). This valid and reliable tool has been used in various studies to measure medical staff perception of self-efficacy regarding their knowledge and confidence in dealing with patients with SUD (Howard & Holmshaw, 2010; Mintz, 2020). Four of the 22 items (*15-18*) are worded negatively which required the subsequent responses to be reverse scored for accurate data analysis. The total score ranges from 22 to 154, where the lower the score, the higher the participant's perceived confidence level.

An online link to the survey was circulated among physicians through their official email, different social media platforms such as WhatsApp, official Facebook pages of medical syndicates and other social media groups that include physicians from various governates and cities in Egypt.

Data was analyzed using the SPSS version 23. Descriptive statistics were presented by frequencies, percentages (%), and mean ± SD. Pearson correlation was used to assess associations between quantitative variables. The Chi-square test was used for testing the statistical significance of categorical data. P-value < 0.05 was considered to be statistically significant.

3. Results

3.1. Demographic characteristics and practice information

A total of 392 participants completed the survey, of which 73.5% ($n = 288$) identified as female. Participants' ages ranged from 20 to 60 years, with a mean age of 32.58 (S.D. ±6.8). A significant proportion 56.4% ($n = 221$) had a bachelor's degree. A mean of 11.5 ($n = 101.7$) participants reported having up to 30 years' experience in primary care, with 28.8% working in urban areas. Participants reported working an average of 39 h per week, of which 28% provided consultations for 51–100 patients, with 26% seeing less than 50 or more than 150 patients. See Table 1.

Of respondents, 30.4% had received less than five hours of post-graduate or undergraduate training on illicit drugs and SUD, and 20.7% received five to 10 h. 38.8% reported having received no training on this topic. Only a small number reported having 11 to 20 h (4.8%), and more than 20 h (5.4%) specialist training on illicit drugs and SUD. There was no significant gender difference in the number of hours of training received on illicit drugs and substance use disorders (χ^2 (4) = 1.929, p = .07). See Table 2.

Table 1. Participant demographics.

Demographic variable	N (%)	Mean	SD
Gender			
Female	288 (73.5)		
Male	104 (26.5)		
Age (Years)		32.58	6.8
Highest level of education			
Bachelor's degree	221 (56.4)		
Master's degree	106 (27.0)		
PhD	65 (16.6)		
Years of experience in primary care		11.5	101.7
Location of practice			
Urban	113 (28.8)		
Peri-urban	16 (4.1)		
Rural	85 (21.7)		
Both urban & rural	178 (45.4)		
Average hours of work per week		39.45	16.7
Number of patients seen in an average week			
0-50	101 (25.8)		
51-100	110 (28.1)		
101-150	81 (20.7)		
> 150	100 (25.5)		

Table 2. Training and professional practice.

Question	Scale measure	Response
Hours of post-graduate or undergraduate training on illicit drugs and SUD	<5	119 (30.4%)
	5-10	81 (20.7%)
	11-20	19 (4.8%)
	>20	21 (5.4%)
	None	152 (38.8%)
Frequency of taking or requesting blood/urine tests due to concern about illicit drug use	Never	248 (63.3%)
	1-2 times	73 (18.6%)
	3-5 times	38 (9.7%)
	6-12 times	14 (3.6%)
	>12 times	19 (4.8%)
Number of patients managed specifically SUD in the last year	None	282 (71.9%)
	1-6 patients	77 (19.6%)
	7-12 patients	16 (4.1%)
	13-24 patients	8 (2.0%)
	25-49 patients	5 (1.3%)
	≥50 patients	4 (1.0%)
Frequency of asking patients about illicit drug use and habit forming medicines	Rarely or never	67 (17.1%)
	Some of the time	150 (38.3%)
	Most of the time	95 (24.2%)
	All the time	80 (20.4%)

With regard to probing patients around potential or actual illicit drug use and use of habit-forming medications, practice varied. There was a statistically significant difference between gender and the frequency of questioning patients about illicit drug use and the use of habit-forming medications (χ^2 (3) = 8.02, p = .05). Female physicians were more likely to report asking patients about these topics "all the time" or "most of the time". There was no statistically significant difference between the number of hours of training received and the routine practice of asking patients about illicit drug use and habit-forming medicine use (χ^2 (12) = 12.480, p = .41). Regarding the triggers for discussing illicit drug use with patients, participants provided a list of conditions or symptoms that serve as indications for initiating such conversations (headache, abdominal or chest pain, anxiety, slurred speech, and confusion).

Most respondents, 71.9% had not managed patients with SUD in the past year. In terms of screening for illicit drug use, most participants (63.3%) reported that they had never had or requested blood or urine tests from their patients due to concerns around illicit drug use. There was a statistically significant difference between gender and the frequency of screening for illicit drug use (χ^2 (4) = 11.149, p = .02). See Figure 1.

3.2. Attitude and behavior toward substance use

The majority of participants considered *quitting smoking*, *not drinking alcohol* and *not using illegal drugs* as very important health promotion behaviors for their patients (91%, 86% and 81% respectively). Responsible use of prescription drugs and stress reduction were both deemed very important (64.0%; 62.5% respectively). A substantial number (57.9%)

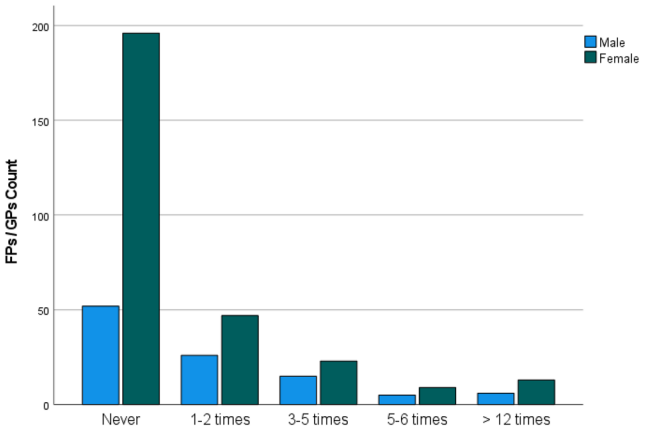

Figure 1. Frequency of GP requests for blood and urine screening due to concern for illicit drug use.

thought it was crucial to exercise regularly. Despite receiving a slightly lower percentage of very important ratings (49.5%), avoiding excess calories still received some importance, with 41.8% of respondents rating it as somewhat important. Female physicians ranked quitting smoking (χ^2 (2) = 17.67, $p < 0.001$) and exercising regularly (χ^2 (2) = 10.67, $p = 0.005$) as more important health promotion behaviors than males. Chi-square analysis revealed no gender differences in other behaviors, between the number of hours of training received, and the behaviors considered important for health promotion ($p > 0.05$). Participants practicing in both rural and urban areas ranked exercising (χ^2 (6) = 16.56, $p = 0.01$); avoiding drinking alcohol (χ^2 (9) = 23.91, $p = 0.004$); and reducing stress (χ^2 (6) = 13.22, $p = 0.04$) as more important behaviors for health promotion compared to physicians practicing in other areas. There were no differences in terms of patients seen per week or the number of patients managed for SUD ($p > 0.05$). See Table 3.

3.2.1. Patient lifestyle choices and behaviors

The highest proportion of participants indicated always obtaining patient lifestyle information regarding smoking cessation (57%) and responsible use of prescription drugs (46%). For reducing stress, 36.7% reported always obtaining information, followed by not using illicit drugs (35.7%) and exercising regularly (32.4%). However, when it came to avoiding excess calories, the frequency of always receiving lifestyle information was lower, with only 26.3% reporting always obtaining such information from their patients. participants working in both urban and rural areas had a higher frequency of "always" obtaining information in relation to smoking cessation (χ^2 (9) = 25.20, $p = 0.003$); avoiding excess alcohol (χ^2 (9) = 24.08, $p = 0.004$); and reducing stress (χ^2 (9) = 20.96, $p = 0.01$). Additionally,

Table 3. Importance of health promotion behaviors.

Behavior	Very important n(%)	Important n(%)	Somewhat Important n(%)	Unimportant n(%)
A. Smoking cessation	357 (91.1%)	31 (7.9%)	4 (1.0%)	–
B. Exercising regularly	227 (57.9%)	151 (38.5%)	14 (3.6%)	–
C. Avoiding drinking alcohol	332 (86.2%)	45 (11.5%)	8 (2.0%)	1 (0.3%)
D. Avoiding excess calories	164 (41.8%)	194 (49.5%)	30 (7.7%)	4 (1.0%)
E. Reducing stress	245 (62.5%)	134 (34.2%)	13 (3.3%)	–
F. Responsible use of prescription drugs	251 (64.0%)	122 (31.1%)	18 (4.6%)	1 (0.3%)
G. Not using illicit drugs	319 (81.4%)	59 (15.1%)	12 (3.1%)	2 (0.5%)

Table 4. Obtaining patient lifestyle information.

Behavior	Always (n %)	As indicated (n %)	Occasionally (n %)	Rarely/Never (n %)
A. Smoking cessation	224 (57.1%)	130 (33.2%)	32 (8.2%)	6 (1.5%)
B. Exercising regularly	127 (32.4%)	190 (48.5%)	57 (14.5%)	18 (4.6%)
C. Avoiding drinking alcohol	124 (31.6%)	140 (35.7%)	77 (19.6%)	51 (13.0%)
D. Avoiding excess calories	103 (26.3%)	217 (55.4%)	64 (16.3%)	8 (2.0%)
E. Reducing stress	144 (36.7%)	191 (48.7%)	48 (12.2%)	9 (2.3%)
F. Responsible use of prescription drugs	182 (46.4%)	169 (43.1%)	33 (8.4%)	8 (2.0%)
G. Not using illicit drugs	140 (35.7%)	156 (39.8%)	71 (18.1%)	25 (6.4%)

participants who managed 50-100 patients per week showed a higher frequency of "always" obtaining information on avoiding excess calories (χ^2 (9) = 18.58, $p = 0.03$). Participants who managed up to six patients for their SUD showed higher frequency of "always" discussing with their patient not to use illicit drugs compared to others with more patients (χ^2 (15) = 25.49, $p = 0.04$). Chi square test results revealed that there were no significant differences based on gender, the number of hours of training physicians had received, number of patients seen weekly, or the number of patients specifically managed for SUD ($p > 0.05$). See Table 4.

3.2.2. Preparedness to counsel patients

Participants felt most prepared to counsel patients in the areas of smoking cessation with 42.3% feeling very prepared and 46.9% feeling prepared. Almost half reported feeling very prepared (40.8%) to counsel patients for regular exercise. Some reported feeling unprepared to counsel patients in the areas of avoiding alcohol (22.7%) and not using illicit drugs (23.2%). Female physicians reported feeling more ready to counsel patients in the following areas: avoiding alcohol (χ^2 (3) = 11.72, $p = 0.008$); responsible use of prescription drugs (χ^2 (3) = 8.02, $p = 0.05$); and not using illicit drugs (χ^2 (3) = 11.43, $p = 0.01$). The amount of training received on illicit drugs and SUD and the number of patients seen weekly had no impact on how prepared they felt to counsel patients ($p > 0.05$). However, participants who reported practising in both urban and rural areas reported feeling more prepared in counseling patients in the

following areas: smoking cessation (χ^2 (9) = 16.98, $p = 0.05$); and exercising regularly (χ^2 (6) = 16.98, $p = 0.02$). Participants who reported managing 1-6 patients with SUD felt more prepared to counsel patients for not using illicit drugs compared to the ones who managed more patients (χ^2 (15) = 25.55, $p = 0.04$). See Table 5.

3.3. Perceived effectiveness of GPs in helping patients to change lifestyle behaviors

Participants reporting feeling most effective in helping patients to change lifestyle behaviors related to smoking cessation (52%), responsible use of prescription drugs (46%), and exercising regularly (45%). Conversely, they were perceived as least effective in the areas of reducing stress (14.3%), avoiding excess calories (14.5%) and not using illicit drugs (15.1%). There were no differences in physicians' effectiveness in helping patients change their behavior based on gender, hours of training received, place of practice, or number of patients seen weekly ($p > 0.05$). See Table 6.

3.3.1. Motivations and barriers for brief intervention to SUD

A large proportion of participants disagreed with the concept that SUD are not an issue in general practice (Disagree: 40.6%, Strongly disagree 16.8%). Concerns over time constraints were evident, with more than 35.2% agreeing they are too busy with other presenting health problems. More than 39.0% of physicians considered prevention, and agreed that preventive health should not solely be the patients' responsibility, with 42.3% agreeing and 19.1% strongly agreeing. Patient perceptions were also a concern, as 35.2% of participants agreed that asking about illicit drug use could make patients resentful. 31.1% of participants strongly agreed that they do not have suitable screening tools to detect and identify patients with SUD. 40.8% of FPs agreed they do not have access to suitable screening tools, and 42.3% agreed that there is a lack of training in counseling for illicit drug use cessation. 38.3% agreed that counseling around illicit drug use is challenging. Additionally, 36.5% agreed that patients would

Table 5. Preparedness to counsel patients.

Area	Very prepared (n %)	Prepared (n %)	Unprepared (n %)	Very unprepared (n %)
A. Smoking cessation	166 (42.3%)	184 (46.9%)	40 (10.2%)	2 (.5%)
B. Exercising regularly	160 (40.8%)	201 (51.3%)	31 (7.9%)	–
C. Avoiding drinking alcohol	108 (27.6%)	189 (48.2%)	89 (22.7%)	6 (1.5%)
D. Avoiding excess calories	143 (36.5%)	208 (53.1%)	38 (9.7%)	3 (0.8%)
E. Reducing stress	130 (33.2%)	198 (50.5%)	62 (15.8%)	2 (0.5%)
F. Responsible use of prescription drugs	143 (36.5%)	206 (52.6%)	39 (9.9%)	4 (1.0%)
G. Not using illicit drugs	99 (25.3%)	185 (47.2%)	91 (23.2%)	17 (4.3%)

Table 6. Effectiveness of GPs in helping patients to change behaviors.

Area	Very ineffective n(%)	Ineffective n(%)	Effective n(%)	Very effective n(%)
A. Smoking cessation	4 (1.0%)	44 (11.2%)	140 (35.7%)	204 (52.0%)
B. Exercising regularly	2 (.5%)	42 (10.7%)	171 (43.6%)	177 (45.2%)
C. Avoiding drinking alcohol	5 (1.3%)	57 (14.5%)	158 (40.3%)	172 (43.9%)
D. Avoiding excess calories	3 (.8%)	48 (12.2%)	186 (47.4%)	155 (39.5%)
E. Reducing stress	4 (1.0%)	56 (14.3%)	169 (43.1%)	163 (41.6%)
F. Responsible use of prescription drugs	2 (.5%)	35 (8.9%)	171 (43.6%)	184 (46.9%)
G. Not using illicit drugs	7 (1.8%)	59 (15.1%)	166 (42.3%)	160 (40.8%)

not follow the physician's advice and change their behavior. Furthermore, 32.1% agreed that physicians have a liberal attitude toward illicit drugs. Interestingly, 18.9% agreed that FPs/GPs have SUD, although the majority disagreed with this statement (47.9%). There were significant differences between male and female participants with chi-square analysis revealing that females showed stronger disagreement as opposed to males in terms of thinking that FPs/GPs are just too busy dealing with other presenting problems (χ^2 (4) = 12.07, $p = 0.02$); that *"FPs/GPs don't think about prevention"* (χ^2 (4) = 14.80, $p = 0.05$); that *"FPs/GPs think that preventive health should be the patients' responsibility"*, not theirs (χ^2 (4) = 16.46, $p = 0.02$); and that (*"FPs/GPs do not have suitable screening tools to identify patients with substance use disorders"* χ^2 (4) = 12.60, $p = 0.01$). See Table 7.

Participants with no training or up to five hours showed greater agreement with the concept that *"FPs/GPs believe that patients would resent being asked about their illicit drug use"*; as opposed to groups who had more hours for training (χ^2 (16) = 32.34, $p = 0.009$). Those working in urban and rural areas showed more agreement with the concept that *"FPs/GPs are just too busy dealing with other presenting problems"* (χ^2 (12) = 21.81, $p = 0.04$). Participants who manage over 150 patients agreed more with statement B *"FPs/GPs are just too busy dealing with other presenting problems"* than those who managed less (χ^2 (12) = 21.50, $p = 0.04$) and statement E *"Patients would resent being asked about their illicit drug use"* (χ^2 (12) = 22.75, $p = 0.03$).

Participants who managed less than 100 patients agreed more with the idea that *"FPs/GPs are not trained in counselling for stopping illicit drug use"* (χ^2 (12) = 27.94, $p = 0.006$). Additionally, participants who managed zero up to six patients with SUD all showed stronger agreement with statement D *"Preventive health should be the patients' responsibility not theirs"* (χ^2 (20) = 33.36, $p = 0.03$); statement H *"FPs/GPs are not trained in counselling for stopping illicit drug use"* (χ^2 (20) = 46.10, $p < 0.001$); statement K *"FPs/GPs themselves have a liberal attitude to illicit drugs"* (χ^2 (20) = 33.65, $p = 0.03$); and statement I *"Illicit drug counselling involves family and wider social effects, and is therefore too difficult"* (χ^2 (20) = 33.97, $p = 0.03$).

Table 7. Reasons for not implementing brief intervention to SUD.

Reason	Strongly agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)
A. SUD is not an important issue in general practice	62 (15.8%)	56 (14.3%)	48 (12.2%)	159 (40.6%)	66 (16.8%)
B. FPs/GPs are just too busy dealing with other presenting health problems	72 (18.4%)	138 (35.2%)	85 (21.7%)	77 (19.6%)	20 (5.1%)
C. FPs/GPs don't think about prevention	38 (9.7%)	66 (16.8%)	57 (14.5%)	153 (39.0%)	78 (19.9%)
D. FPs/GPs think that preventive health should be the patients' responsibility not theirs	43 (11.0%)	46 (11.7%)	62 (15.8%)	166 (42.3%)	75 (19.1%)
E. FPs/GPs believe that patients would resent (feel bad) being asked about their illicit drug use; as it could be seen as accusing them of being abusers.	60 (15.3%)	138 (35.2%)	86 (21.9%)	84 (21.4%)	24 (6.1%)
F. FPs/GPs do not know how to identify patients with SUD	41 (10.5%)	124 (31.6%)	104 (26.5%)	102 (26.0%)	21 (5.4%)
G. FPs/GPs do not have suitable screening tools to identify patients with SUD.	122 (31.1%)	160 (40.8%)	69 (17.6%)	37 (9.4%)	4 (1.0%)
H. FPs/GPs are not trained in counseling for illicit drug use cessation	109 (27.8%)	166 (42.3%)	75 (19.1%)	35 (8.9%)	7 (1.8%)
I. FPs/GPs believe that illicit drug counseling involves family and wider social effects, and is therefore too difficult	80 (20.4%)	150 (38.3%)	109 (27.8%)	48 (12.2%)	5 (1.3%)
J. FPs/GPs do not believe that patients would take their advice and change their behavior	57 (14.5%)	143 (36.5%)	90 (23.0%)	88 (22.4%)	14 (3.6%)
K. FPs/GPs themselves have a liberal attitude to illicit drugs.	36 (9.2%)	60 (15.3%)	108 (27.6%)	126 (32.1%)	62 (15.8%)
L. FPs/GPs themselves may have SUD.	34 (8.7%)	74 (18.9%)	95 (24.2%)	126 (32.1%)	62 (15.8%)

3.3.2. Perception of self-efficacy

All DDPPQ statements demonstrated a degree of participant agreement based on the mean scores provided, as the mean scores for each statement were less than four. Female physicians had higher levels of agreement with statements: 6 "*I feel I know how to counsel people who use illicit drugs over the long term*" (χ^2 (6) = 13.05, $p = 0.04$); 14 "*I want to work with people who use illicit drugs*" (χ^2 (6) = 13.68, $p = 0.03$); and 21 "*In general, it is rewarding to work with people who use illicit drugs*" (χ^2 (6) = 15.28, $p = 0.02$). There were no differences in terms of hours of training except statement 20 where participants with no training or up to five hours (χ^2 (24) = 37.64, $p = 0.04$) and participants who managed 1-6 patients with SUD (χ^2 (30) = 46.23, $p = 0.03$) felt more satisfaction when working with PWUD. physicians working in urban areas showed higher agreement for statements 21 (χ^2 (18) = 28.66, $p = 0.05$), indicating that they found it

Table 8. Drugs and drug users' problems perceptions questionnaire (DDPPQ).

Statement	N	Minimum	Maximum	Mean	Std. deviation
1	392	1	7	2.95	1.713
2	392	1	7	3.13	1.602
3	392	1	7	2.97	1.601
4	392	1	7	2.89	1.550
5	392	1	7	2.88	1.528
6	392	1	7	3.16	1.667
7	392	1	7	2.87	1.604
8	392	1	7	2.31	1.357
9	392	1	7	2.80	1.545
10	392	1	7	2.39	1.327
11	392	1	7	3.07	1.690
12	392	1	7	3.08	1.712
13	392	1	7	3.07	1.732
14	392	1	7	3.74	2.051
15	392	1	7	2.99	1.654
16	392	1	7	3.78	2.019
17	392	1	7	3.64	2.018
18	392	1	7	3.21	1.770
19	392	1	7	3.55	1.845
20	392	1	7	3.43	1.875
21	392	1	7	3.39	1.819
22	392	1	7	3.19	1.746

more rewarding to work with PWUD as compared to others who practice in other locations. Table 8.

4. Discussion

This is the first study in Egypt to investigate perceptions and practices of primary care physicians with regard to management and support of patients with SUD in primary care. Most participants, similar to elsewhere in the world (Andreu et al., 2022; Gryczynski et al., 2011; Heijdra Suasnabar & Hipple Walters, 2020; O'Malley et al., 2022; Spigt & Scherrer, 2022) and in the MENA (Marzouqi et al., 2014) agreed with the concept that SUD is a primary care issue in Egypt and that primary care services could diversify and upscale to detect, intervene, treat, support and refer patients at risk of SUD and those requiring intervention. This was irrespective of their gender, hours of prior training, working hours or number of managed SUD patients.

Despite recognizing SUD as a primary care issue and feeling that they might have sufficient knowledge about substance use, most participants, particularly female GPs, were not ready to counsel patients about illicit drug use, this contrasted with their preparedness to tackle other health behaviors such as physical activity and smoking cessation. Others were not interested in mastering SUD as a primary healthcare issue (Andreu et al., 2022). A similar reluctance of GPs to traverse the realm of addictions due to lack of training, complexity of patient cases, time pressures and workload issues has been reported elsewhere (Adeniran et al., 2023;

McNeely et al., 2018; O'Malley et al., 2022; Parchman et al., 2017; Wilson et al., 2011).

We speculate that possibly greater investment in addiction medicine at undergraduate level in the Egyptian medical curricula could sensitize future FPs/GPs and support scaled up responses to SUD in primary care. Globally, there has been a shift toward enhanced under-graduate modules on addiction and professional development training for physicians on various aspects of SUD detection management and care in primary care settings (Delargy et al., 2016; Gorfinkel et al., 2019; Klimas & Cullen, 2015; Klimas et al., 2021; Polydorou et al., 2008; Syed et al., 2021; Van Hout et al., 2018a, 2018b). FPs/GPs generally do not receive specialist under-graduate and continuing professional development training on SUD and lack awareness and knowledge about detection and support of patients with substance disorder issues (including that of iatrogenic dependence) (Klimas & Cullen, 2015; Klimas et al., 2021; Polydorou et al., 2008).

Upskilling Egyptian physicians to administer routine evidence-based screening for substance use, and where indicated for substance use disorder in primary care are advised. Updated recommendations from the US advocate for screening by asking questions about unhealthy drug use in adults 18 years or older; and when services for accurate diagnosis, effective treatment, and appropriate care can be offered or referred (Krist et al., 2020). Investing in routine screening will desensitize patients and their primary care physicians, support population health in Egypt by identifying those at risk, preventing further habit forming and harmful use, and will likely act as preventive and referral measure (McNeely et al., 2018; O'Malley et al., 2022; Spigt & Scherrer, 2022). This simple measure will also potentially divert patients away from waiting lists for government addiction clinics (in-patient). There is evidence which supports the effectiveness of delivering brief interventions in primary care contexts to reduce alcohol, tobacco and drug use (Bertholet et al., 2020; Mattoo et al., 2018; Pilowsky & Wu, 2012). Other adjunct modalities to support physicians when managing SUD in primary care include effective technology-based interventions which promote work-place learning, adherence, routine urine and blood-borne virus screening, self-management and substance use abstinence (Van Hout et al., 2018a).

A promising finding in this study is that primary care physicians indicated they could refer for specialist supports and treatment. Family physicians appreciate the coordination between different specialists which is paramount for better management and outcomes to SUD patients (Andreu et al., 2022). Investment in primary care in Egypt in providing integrated substance use preventive and treatment modalities will likely incur broader public health benefits and stigma reduction, including desensitization of staff, patients, and families (see United Nations Office on Drugs & Crime,

2023b; Spigt & Scherrer, 2022; Van Hout et al., 2023). It is well established that patients with SUD, or a history of SUD feel uncomfortable or discriminated against in primary care, and experience stigmatizing language from staff (Abbott et al., 2022; Andreu et al., 2022; O'Malley et al., 2022; Spigt & Scherrer, 2022; van Boekel et al., 2014).

5. Limitation

Proportion of female participants is much greater than that of male (73.5% females). Also, a significant proportion (56.4%) had a bachelor's degree with less experience, which could affect the results. Moreover, data collection was done through a self-administered questionnaire, which may result in reporting bias.

6. Conclusion

This unique study on Egyptian primary care physicians' perspectives underscores the need for greater depth of addiction training during undergraduate medical education and in continuing professional development, so that primary care clinics can better prevent harmful substance use, detect patients with SUD, intervene and support those in treatment. In addition, primary care settings should be occupied by screening methods, other supporting clinics that could integrate in managing SUD and a well-organized referral system to facilitate and improve manging patients with SUD. It is intended that this national study will inform further development and scale of evidence-based SUD brief intervention and treatment within Egyptian primary care.

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