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RESEARCH ARTICLE



Quality of life among individuals on opiate agonist treatment in England

Kirsty Alderson^a  and Rob Hoyle^b

^aSchool of Psychology, Liverpool John Moores University, Liverpool, England; and Change, Grow, Live, England; ^bChange, Grow, Live, England

ABSTRACT

Background: Recovery from drug use is an individualized process that does not necessitate complete abstinence. Due to a growing literature base emphasizing that unmet holistic needs may hinder recovery efforts, some researchers advocate for a focus on quality of life (QoL) in recovery. There is, however, no consensus on its definition or measurement. Certain groups, such as individuals who are receiving opiate agonist treatment (OAT), may face unique experiences that influence their QoL.

Method: This study explored factors that literature and theory suggest are associated with QoL among individuals recovering from opioid use. Nine variables were chosen to represent three life domains: personal health, standard of living, and achievement. Data were collected from 782 adults (30.1% women) aged 23 to 77, who were receiving methadone or buprenorphine OAT from a recovery organization in the north of England.

Results: A multiple regression revealed significant associations between five variables and QoL: housing stability, mental health diagnosis, employment status, concurrent illicit substance, and duration in OAT (5 to 10 years).

Conclusions: It is possible the above variables are linked with increased strain, which could reduce overall satisfaction with life. Recovery services could provide interventions to enhance QoL in addition to those which support abstinence from substances. It is important to achieve consistency in definition and measurement, gather relevant data on theory-driven predictors, and incorporate the perspectives of individuals using recovery services.

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Quality of life; substance use; recovery; opioid; treatment; outcomes

Introduction

The UK has seen significant investment in drug treatment and recovery services following publication of the UK Government's 10-year drugs plan (HM Government 2021). Despite claiming to put the individual at the center, the plan was developed without public consultation or the perspectives of those with lived experience of drug use (Holland et al. 2023). Arguably, the plan should consider how those individuals define recovery and what they need from services. For instance, some people seek positive changes in their psychological, spiritual, social, health and daily life functioning (Costello et al. 2020).

There is growing emphasis on examining client reported health and wellbeing outcomes in recovery services. Two notable projects include OMER-BE (Outcome Measurement and Evaluation as a Routine Practice in Alcohol and Other Drug Services in Belgium) (Zerrouk

et al. 2025) and OPTIMUS (OPioid Treatment outcomes Interview for Maintenance medication Users) (Wiessing et al. 2025). These studies aim to enhance quality of care in recovery services by highlighting the comprehensive needs of clients and evaluating treatment effectiveness (Zerrouk et al. 2025), whilst achieving consistency of measurement across services and research studies (Wiessing et al. 2025). Quality of Life (QoL) features regularly among outcomes that are valued by individuals who attend recovery and drug treatment services.

The relationship between QoL and recovery is complex. Substance use reduces QoL for many people (Zerrouk et al. 2024). Yet, high QoL appears to be a key component of recovery as it may help people to sustain abstinence (Strada et al. 2017) and increase treatment engagement (Logan and Cole 2024). It is therefore important to understand what factors contribute to QoL among people using substances. However, this is

CONTACT Kirsty Alderson  k.a.alderston@ljmu.ac.uk  School of Psychology, Liverpool John Moores University, Tom Reilly Building Byrom Street Campus, Merseyside L3 3AF, England

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impeded by the lack of consensus on how to define or measure QoL (Dyer et al. 2023). In one of the most influential theories, the Theory of Subjective Wellbeing Homeostasis (Cummins 2005), QoL is described as one's satisfaction with life as a whole and it involves objective and subjective elements; the latter being termed subjective wellbeing. According to this theory, QoL is multidimensional and is influenced by factors across seven core life domains: standard of living, personal health, achieving in life, personal relationships, personal safety, community connectedness and future security (International Wellbeing Group 2013, 2024). However, in the literature there is no agreement on the core domains that are crucial for QoL and some variation is noted (Ruta et al. 2007; Schalock et al. 2016). The World Health Organization (WHO) domains are widely applied in research, particularly when examining QoL among those under opiate agonist treatment (OAT) (Feelemyer et al. 2014). These are physical, social, environmental, independence and psychological (World Health Organization 1998).

In a meta-analysis of QoL among those who use substances, a range of variables were associated with lower QoL across various life domains. These include being older, homeless, having severe substance use, experiencing trauma symptoms, and having a mental health condition (Armoon et al. 2022). Armoon et al. (2022) advise caution when generalizing these findings due to the relatively low number of articles that met the required standards to be included in the meta-analysis. In addition, they only included studies that examined QoL using validated psychometric instruments. Some researchers equally support asking a single question relating to how satisfied a person feels with life (Cummins et al. 2010; Logan and Cole 2024; Wiessing et al. 2025).

There are sections of the literature that examine QoL among those who use specific substances, such as opiates. In several European studies, associations were observed between QoL and physical and mental health, social wellbeing, living situation and daily activity, as well as being prescribed buprenorphine or methadone (De Maeyer et al. 2011a, 2011b; Muller et al. 2016). There are also indications that QoL is influenced by the length of time an individual has been in treatment (Birkeland et al. 2021). For example, in a literature review by De Maeyer et al. (2010), the authors noted that many studies examined QoL at the start of substance use treatment when individuals may be 'in crisis'. Therefore, low QoL ratings may not be representative of all individuals in treatment. Indeed, some studies found significant improvements in QoL

as length of time in opiate treatment progressed (De Maeyer et al. 2010). Age is another factor that may impact on QoL for people who use opiates. Older adults may experience greater prevalence of chronic health conditions and undiagnosed mental health conditions (Mackiewicz et al. 2022) and this may adversely affect QoL. However, inconsistencies have been noted in the literature in relation to the effects of age on QoL (De Maeyer et al. 2010).

Based on existing research, individuals who are in treatment for opiate use may have unique factors that influence their QoL and arguably, factors highlighted in the literature should be empirically examined in different samples and settings. There are clear policy and practice implications for this type of research. It could lead to the development of interventions to improve QoL for those with a history of opiate use (De Maeyer et al. 2011a; Armoon et al. 2022), which could have wide-ranging benefits for society through enhancing overall population wellbeing (Cummins et al. 2009).

This study examined a range of objective factors that theory and literature indicate are linked with QoL among people with a history of opiate use. Nine variables were selected across the following domains: personal health, standard of living and achievement. These were hypothesized to have a significant association with QoL ratings in a sample of individuals receiving OAT.

Method

Design

This was a cross-sectional quantitative study of individuals accessing support from a third sector organization providing a range of services to support recovery from substance and alcohol use. Services include individual and group-based psychosocial programs, and access to treatments such as OAT. The current study utilized an existing data set provided by the organization, comprising secondary data that is routinely collected throughout clients' treatment. The data comprised individuals who accessed OAT from four sites located in the North West of England in the month of May 2024. Cross-sectional research poses challenges in establishing a cause-and-effect relationship between variables. Where possible, a temporal order was established within the data. For example, QoL ratings were provided by clients during the 6 months prior to May 2024 and several variables related to the past 24 months or were rated as current. This is further detailed in the measures section.

Participants

After securing ethical agreement from the University (ref: 24/PSY/015) and seeking relevant permissions from the addiction recovery organization the researcher requested an anonymized data set of clients aged 18 years and above who accessed the organization within the North West of England. The clients had to have provided a QoL rating within the past 6 months and be prescribed either methadone or buprenorphine OAT. The sample was comprised of 782 individuals (235 women and 547 men) aged between 23 and 77 years.

Measures

QoL was measured with a single item. Clients were asked by the organization to rate their quality of life on a scale from 0 to 20: 'Quality of Life' (Please answer 0–20). There was no definition provided for QoL.

Demographic information was provided in relation to clients' age and gender. Regarding standard of living, data were provided on whether clients had been in prison during the past 24 months and whether they currently reside in unstable or unsuitable housing. Responses were dichotomous yes/no format.

Regarding personal health, data were provided on whether clients were using illicit substances alongside their OAT and a self-reported current diagnosis for a mental health condition (dichotomous yes/no format). Data were also provided on whether each client was prescribed buprenorphine or methadone and duration on OAT. Duration was separated by the researchers into one of five categories: less than 12 months; between 1 and 3 years, 3–5 years, 5–10 years, and 10 or more years.

Regarding achievement, data were provided on whether clients reported being employed at the time of data collection in May 2024 (dichotomous yes/no format).

Analysis

Data analysis was conducted using SPSS version 28. Linear multiple regression was performed to examine whether personal health, standard of living and achievement variables were associated with QoL. Due to how QoL was measured in this organization, it was treated as a continuous variable. There was no missing data.

Regarding assumptions, there was independence of residuals, indicated by a Durbin-Watson statistic of 1.906. Linearity was established through visual inspection of regression plots. There appeared to be heteroscedasticity, therefore, the multiple regression was

undertaken with robust standard errors (Hayes and Cai 2007). There was no evidence of multicollinearity, with tolerance values greater than 0.1. There were 5 cases with studentized deleted residuals greater than -3 , but no leverage values were greater than 0.2, nor Cook's distance values greater than 1. The assumption of normality was met, as indicated by the Q-Q Plot.

Results

Descriptives

Mean QoL scores appeared similar for females ($M = 12.7$, $SD = 4.0$) and males ($M = 13.2$, $SD = 4.0$). Most of the sample were prescribed methadone ($N = 588$, 75.2%). Most participants had been prescribed OAT for a duration of between 1 and 3 years ($N = 423$, 54.1%) and over a third of the sample reported using illicit substances alongside their OAT medication ($N = 305$, 39.0%). Regarding life circumstances and personal factors, 81 participants reported being in unstable or unsuitable accommodation (10.4%), 112 were currently employed (14.3%), and 16 individuals had been in prison during the past 2 years (2.0%). Over half of the sample reported a current diagnosis of a mental health condition ($N = 465$, 59.5%) (Table 1).

Main analysis

The following nine variables were entered into the model: age, gender, housing stability, use of illicit substances, current diagnosed mental health condition, prison sentence (during the past 24 months), type of OAT prescribed, duration on OAT, and if currently employed. The model significantly predicted quality of life score, $F(12, 769) = 14.824$, $p < .001$. However, R^2

Table 1. Sample characteristics.

Variables	Mean (SD)
Age	51.3 (8.0)
QoL score	13.0 (4.0)
	Total <i>N</i> (percent)
Sex (female)	235 (30.1)
Duration OAT	
Less than 12 months	227 (29.0)
1 and 3 years	423 (54.1)
3 and 5 years	39 (5.0)
5 to 10 years	48 (6.1)
10 years or more	45 (5.8)
Prison during past 24 months (yes)	16 (2.0)
Unstable/unsuitable housing (yes)	81 (10.4)
OAT Type	
Buprenorphine	194 (24.8)
Methadone	588 (75.2)
Illicit substances alongside (yes)	305 (39.0)
Current diagnosis for MH condition (yes)	465 (59.5)
Currently employed (yes)	112 (14.3)

Table 2. Multiple regression results for quality of life (QoL) scores.

Quality of life	<i>B</i>	95% for <i>B</i>		<i>SEB</i>	β	R^2	ΔR^2
		LL	UL				
Model						.19	.18***
Constant	18.26***	16.32	20.21	1.00			
Age	−0.034	−0.069	.00	.02	−0.07		
Gender (female)	−0.041	−0.636	.554	.30	−0.01		
Prison (yes)	−0.630	−2.75	1.49	1.08	−0.02		
Unstable housing (yes)	−2.24***	−3.31	−1.17	.55	−0.17		
OAT (buprenorphine)	−0.554	−1.19	.08	.32	−0.06		
MH condition (yes)	−1.20***	−1.77	−0.63	.29	−0.15		
Employed (no)	−2.34***	−2.94	−1.74	.30	−0.20		
Illicit alongside (yes)	−1.27***	−1.83	−0.71	.29	−0.16		
Duration 1–3 years	−0.222	−0.87	.43	.33	−0.03		
Duration 3–5 years	1.188	−0.17	2.55	.69	.06		
Duration 5–10 years	2.09***	1.07	3.12	.52	.13		
Duration 10+ years	.976	−0.32	2.27	.66	.06		

Note: Model = 'enter' method in SPSS statistics.

CI: confidence interval; LL: lower limit, UL: upper limit, *SEB*: robust standard error of the coefficient, β : standardized coefficient, R^2 : coefficient of determination, ΔR^2 : adjusted R^2 .

* $p < .05$.

** $p < .01$.

*** $p < .001$.

for the overall model was only 18.8%, with adjusted R^2 of 17.5%. Five variables added to the prediction, $p \leq .001$. Specifically, unstable housing was associated with lower QoL ($B = -2.2$, CI -3.3 to -1.2), a diagnosed mental health condition ($B = -1.2$, CI -1.8 to -0.63), being unemployed ($B = -2.3$, CI -2.9 to -1.7) and using illicit substances alongside OAT ($B = -1.3$, CI -1.8 to -0.71). Being prescribed OAT for a duration of between 5 and 10 years was associated with higher QoL, than individuals who were prescribed for less than 12 months ($B = 2.1$, CI 1.1 to 3.1). Table 2 displays the results of the multiple regression analysis.

Discussion

In this sample, five of the nine variables in the model were significantly associated with QoL. Findings indicated that unstable or unsuitable housing, having a current diagnosis for a mental health condition, being unemployed, and using illicit substances alongside OAT could be associated with lower QoL. Furthermore, higher QoL may be associated with being in OAT for a period of between 5 and 10 years when compared against the reference category of less than 12 months. However, these variables accounted for only a small amount of variance in QoL scores.

Regarding housing status, this aligns with findings from the meta-analysis by Armoon et al. (2022), where associations were reported between homelessness and low QoL among those with a 'substance use disorder'. Furthermore, De Maeyer et al. (2011a) noted associations between QoL and an inability to change one's living situation among individuals on OAT. Armoon et al. (2022) argues that an insecure

living situation is related to deteriorating health problems and thus can adversely impact on QoL.

In this study employment represented the domain of achieving in life (International Wellbeing Group 2013, 2024). De Maeyer et al. (2011a) found that structured daily activity predicted QoL in those on OAT. Arguably this is a more effective way to operationalize achievement, as structured activity could include other pursuits that give a sense of meaning and achievement. Indeed, in the qualitative study by De Maeyer et al. (2011b), participants who had been on OAT for between 5 and 10 years reported that holding an occupation and having a meaningful life were among the key factors associated with high QoL.

Regarding the use of illicit substances alongside OAT, similar findings were observed in a meta-analysis, where severe substance use predicted low social and mental health related QoL (Armoon et al. 2022). Within the current study however, it was not known whether illicit substance use was based on self-report or drug testing. If data were based on the former, then rates of co-occurring illicit substance use could be an under-estimation in this sample. Arguably, some people may fear the consequences of admitting to illicit substance use alongside OAT, particularly if they have childcare or other responsibilities.

Having a current diagnosis for a mental health condition was associated with low QoL in the current study. In the meta-analysis by Armoon et al. (2022) mental distress was predictive of low social and environmental QoL. Similarly, in the study by De Maeyer et al. (2011a) QoL was associated with psychological distress and being prescribed medication for psychological complaints. Armoon et al. (2022) argue that

individuals with comorbid mental health difficulties may experience restricted access to appropriate support interventions, thus impacting on QoL. Whilst a current mental health condition appears to be associated with QoL in the current study sample, this might not be the most suitable method of operationalizing this factor. It is possible that psychological distress is more appropriate given that for some individuals their mental health condition may not be causing current distress or interfering with their perceived quality of life.

In this sample, being on OAT for between 5 and 10 years was associated with higher QoL. Other studies have found significant increases in QoL ratings as the length of time in opiate treatment progresses (De Maeyer et al. 2010). It is noteworthy that in the current study sample, mean QoL scores were above the mid-point of the scale. Similarly, in the Birkeland et al. (2021) sample, QoL ratings among individuals with substance use difficulties were described as 'near to normal'. The authors noted that participants had been in treatment for a 'substantial' period. It is possible that over time individuals may develop additional resources that further enhance their QoL alongside the OAT, however this requires further exploration.

Despite having some support from the literature, the other variables selected for analysis in this study did not significantly add to the predictive model. Yet, replication is required in other samples (Kline 2005). In relation to age, existing research suggests that older adults who use opiates may experience increased prevalence of chronic health conditions and undiagnosed mental health conditions, adversely impacting on perceived QoL (Mackiewicz et al. 2022). However, there are inconsistent findings in the literature regarding age and QoL (De Maeyer et al. 2010). It is important to establish in other samples whether age is indeed relevant, as this population may have specific needs that should be addressed as they age (Rosen et al. 2008). The link between gender and QoL is also inconsistent in the literature (De Maeyer et al. 2010). Therefore, this requires further attention, with consideration given to whether there are unique QoL predictors depending on gender. In the current study, prison was chosen to represent a form of recent instability in one's living situation and one that could arguably impact on QoL. In this sample, a small minority had been in prison in the past 24 months ($N=16$). The potential impact of prison may benefit from a qualitative approach.

Regarding the type of OAT, it is possible this has no impact on QoL and simply engaging in OAT could

be protective (Muller et al. 2016). However, this also lends itself to a qualitative methodological approach, as in the literature some individuals on OAT report experiencing a range of positive and negative outcomes specifically linked with taking methadone. Negatives include encountering discrimination, experiencing a dependence on methadone and emotional blunting (De Maeyer et al. 2011b).

Limitations

There is variation in how different studies operationalize variables across key life domains. In the study by De Maeyer et al. (2011a), five variables accounted for 60% of variance in QoL scores, whereas in the current study, five variables accounted for 17.5%. Measurement error could be an issue in this study, however, the selection of variables was limited by the type of data that were routinely collected by the organization. Information was not routinely collected from clients on the full range of variables that are indicated by theory and existing research, and this is a significant limitation. Recovery services are not at fault, as they likely collect data that informs ongoing treatment decisions. Academics should guide organizations on how to establish QoL with minimal burden to staff, who are already required to gather large amounts of data from clients. The notable OPTIMUS and OMER-BE projects aim to increase the quality of monitoring data obtained in recovery organizations, which includes QoL. However, in both projects the patient related outcomes batteries were noted to be lengthy, with some taking up to 45 min to complete (Zerrouk et al. 2025). Evidently, further work must be done to obtain valuable data in an efficient manner.

Relating to the above, QoL was measured by a single item in the current sample and with no definition given to clients. There are clear benefits of single item measures as this is not demanding for staff or clients. However, there may be benefits of administering a short, validated measure in recovery organizations. Several short item scales have been recommended by researchers (Cummins et al. 2010; Bray et al. 2017; Dyer et al. 2023). However, replication is needed to validate these measures in samples of opiate users (Strada et al. 2017; Dyer et al. 2023).

The current study utilized a relatively large sample, but only a small proportion of individuals who were prescribed OAT in two regions in the North West of England. The study sample represents 1.91% of all individuals in England who were prescribed OAT in that particular organization. Replication is needed in

different samples to highlight the range of factors that are associated with QoL among people with a history of opiate use.

Future directions

Short, multi-dimensional QoL measures that show promise among those with a history of substance use should be administered in recovery services. Short measures would produce minimal administrative burden for staff and clients. Some services may also be willing to collect additional data on theory and research driven variables, to establish which objective and subjective factors influence QoL in this group.

This study examined QoL among those on OAT. However, QoL is arguably an important consideration for those who use other types of substances. Further studies should examine QoL among different sub-populations of people who are seeking support to manage or abstain from substance use, with the aim of developing and evaluating interventions designed to improve QoL in clients accessing services. A qualitative approach would likely complement this research, as it is arguably important to examine the unique experiences and perception of QoL in those who use substances. It is important to understand the contextual factors that are perceived to enhance or inhibit QoL and lead to changes over time. This may highlight ways in which services could be enhanced to improve a wide range of outcomes for this group.

Conclusions

In the current study, housing stability, employment, mental health conditions, use of illicit substances and duration on OAT were associated with QoL among those who were prescribed methadone and buprenorphine. It is possible that factors such as these are linked with increased strain, which could reduce overall satisfaction with life. Researchers must further examine this construct and where possible, agreement should be reached on the operational definition and measurement approach. Data should be collected on theory and research driven variables, whilst also inviting the voices of clients who have a history of substance use.

Disclosure statement

Kirsty Alderson reports administrative support was provided by Change Grow Live. Kirsty Alderson reports a relationship with Change Grow Live that includes: employment. The coauthor is also employed by this organization.

Ethical approval

The study received full approval from the Liverpool John Moores Ethics Committee, ref: **24/PSY/015**.

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ORCID

Kirsty Alderson  <http://orcid.org/0000-0003-0630-7583>

Data availability statement

'No new data were created during this study. Preexisting data underpinning this publication were obtained from Change Grow Live subject to restrictions. The raw/processed data required to reproduce the findings cannot be shared at this time due to legal, ethical constraints'.

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