

Health-related Quality of Life Among People Who Inject Drugs on Methadone Assisted Treatment in Zanzibar, Tanzania

Shaaban Hassan Haji (✉ jechah3@gmail.com)

Zanzibar Integrated, HIV, Hepatitis, TB and Leprosy Programme <https://orcid.org/0000-0003-0437-773X>

Damian Jeremia Damian

Ministry of Health Community Development Gender Elderly and Children

Nahir Ali Rajab

Ministry of Health Community Development Gender Elderly and Children

Othman Mkubwa Ali

Ministry of Health and Community Service: Ministry of Health Community Development Gender Elderly and Children

Asha Ussi Khamis

Ministry of Health and Community Service: Ministry of Health Community Development Gender Elderly and Children

Farhat Jowhar Khalid

Ministry of Health and Community Service: Ministry of Health Community Development Gender Elderly and Children

Bruno Fokas Sunguya

Muhimbili University of Health and Allied Sciences

Research

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Abstract

Background: The burden of drug use is growing rapidly in Low- and Middle-Income countries (LMICs) with access to coastlines and most major cities; Tanzania is not exception. Methadone Assisted Treatment (MAT) has a potential to reduce addiction and therefore health and quality of lives. MAT is known to improve health related quality of life and it is essential in addressing a number of drug use related challenges among People Who Inject Drugs (PWIDS). Evidence on the profiles of Health Related Quality of Life (HRQOL) among PWIDS who are in treatment programmes particularly MAT services, is scanty in Zanzibar, Tanzania,

Objectives: To determine HRQOL and associated factors among PWIDS receiving MAT Services in Zanzibar, Tanzania.

Methods: This was a cross-sectional study conducted in Unguja, Zanzibar from July to August 2019. A total of 376 PWIDS attending Kidongo Chekundu MAT clinic were randomly selected and enrolled in the study. Data were electronically collected using Open Data Kit (ODK) programme during face-to-face interviews with PWIDS. HRQOL was measured using the WHO's Quality of Life questionnaire. Descriptive and binary logistic regression analyses were used to describe and determine factors independently associated with HRQOL.

Results: Of the 376 PWIDS enrolled in this study, Vast majority (92.6%) were male. The mean age of participants at enrollment was 39 (\pm standard deviation (SD) 8.9). Slightly more than one third (45.5%) were single, 56.4% have a secondary school education level. Slightly more than two third (82.7%) were employed, 42% reported living at Magharibi B districts. High proportion were on MAT services for more than one year (70.2%); had good adherence to MAT services (79%), and were receiving 50 – 99 mg of methadone dose per day (51.1%). The majority of PWIDS (82%) had of high HRQOL. Employed PWIDS [AOR=5.36; 95%CI (1.51, 19.04); $p=0.009$], and PWIDS who were in the middle wealth quintile [OR=24.15; 95%CI (2.01, 290.30); $p=0.012$] were more likely to have better HRQOL.

Conclusion: In general, PWIDS on MAT services have good HRQOL in Zanzibar. Being employed or having better economic status among were associated with better HRQOL. To effect this there is a need to strengthen multisectoral collaborations, integrated and comprehensive MAT services within the clinic and other related areas with all relevant stakeholders so as to improve health related quality of life among PWIDS.

Background

The burden of drug use is growing rapidly in LMIC with access to coastlines and other major cities, Tanzania is not exception. Geographical locations and regions with a growing burden of drug use in Tanzania include regions of Zanzibar, Dar es salaam, Tanga, and Arusha (1). Opioid addiction, especially heroin is a major drug problem in Zanzibar. This is due to the fact that, for many years Zanzibar has been an important sea route of the heroin smuggled from Asia to Europe and North America. As a result, it is

available in streets at a very low price (around 1\$ TZS2,300/=) per unit, a lower price and easily accessed compared to alcohol, owing to religious and traditional beliefs in Zanzibar (2–5). Such easy access has led to an increasing number of PWIDS in Zanzibar i.e. about 3200 in 2019, resulting to high burden of drug related problems including blood borne infections such as HIV (11.3%) and Viral Hepatitis(HCV – 25% and HBV – 5.9) compared to the general population [(blood transfusion donors up to 2.4% for HBV) and those enrolling to armed forces and therefore tested up to 3.4% in HBV]] in Zanzibar. (4, 6, 7).

Strada *et al.*; 2019 reported substantially lower HRQOL in OST patients, especially in their mental HRQOL. MAT services can support further improvement, particularly with regard to mental health services among PWIDS. Clinicians may consider the use of patient-reported outcome measures to identify patients' subjective physical and psychological needs. It has also recommended that further research is needed to determine if employment is a cause or consequence of improved HRQOL (8). Moreover, Fiona *et al.*; (2018) reports lower QOL in the physical health and psychological domains among clients in Hong Kong (9)

In addition, intravenous drug use (IDU) reported to increase the risk of HIV and Hepatitis infections through a number of high risk practices and behaviors. These include needle sharing, blood contamination and sharing, and other risky sexual behaviours (10, 11) which are among the important drivers of such epidemics and increasing among PWIDS globally. The World Health Organization (WHO) recommended the use of methadone for the purpose of reducing incidence of HIV and co-infections associated with HIV such as Hepatitis, Tuberculosis, and other blood born infections (4, 6, 7, 12), with proven effects on both physical and mental health (4). To address the growing burden of drug use and the effects thereof, Tanzania introduced Methadone Assisted Therapy (MAT) as a harm reduction strategy in 2011. This has been proven effective in reducing the prevalence of opioid addiction (4, 13). Similar efforts have been reciprocated in Zanzibar in February 2015 whereby the first MAT clinic was established at Kidongo Chekundu.

The coverage of HIV and HCV prevention, treatment and care services against drug use for PWIDS remain low in Zanzibar which create a demand to improve these services (10). Owing to socio-demographic disadvantages, and addiction challenges, PWIDS are often involved in crime and other illegal behaviours (14). All these put Health Related Quality of Life (HRQOL) at jeopardy and therefore, impair the effectiveness of any intervention in their health. There is limited data on HRQOL among PWIDS who are on MAT services in Zanzibar. This study aimed at examining HRQOL and its associated factors among PWIDS who attend MAT clinic in Zanzibar, Tanzania.

Methods

Study setting and design

This was a cross-sectional study conducted from 5th July to 2nd August 2019 at Kidongo Chekundu MAT Clinic in the Urban district of Unguja Island in Zanzibar. This is the only clinic which currently provides comprehensive MAT services to PWIDS in Zanzibar. More than 500 PWIDS attend and receive

care every day in this facility. While there are about 3,200 documented PWIDS in Zanzibar the prevalence of HIV and HCV is high (11.3% and 25% respectively) (15, 16). The study uses the WHO's Quality of Life (WHOQoL) tool to respond to the study objectives (17, 18).

Study population and enrollment procedures

This study included PWIDS who are receiving methadone services for at least 6 months at Kidongo Chekundu MAT clinic in Unguja. At least 98.7% (376/381) of the estimated PWIDS attending MAT clinic were randomly selected from the clinic register on a daily basis. We recruited all clients who attend MAT clinic during the study period. About 30 clients were randomly selected each day for 15 days until the required sample was reached.

Variables and outcome measures

The main outcome variable in this study was the HRQOL. This was measured using the WHOQoL questionnaire. This 26-items instrument has two main questions assessing the overall HRQOL and the four domains assessing different individual aspects of HRQOL. These domains were physical health, psychological health, Social relationship and environmental health. The overall HRQOL was measured by looking at an individual's overall satisfaction with life and a general sense of personal well-being. The tool is crucial for use in diverse cultural settings (17, 18).

Independent variables included socio-demographic and economic characteristics, feeding and dietary intake, adherence to MAT, methadone dosage, duration in MAT treatment. We measured socio demographic characteristics (age, sex, marital status, education, etc) using the Tanzania Demographic and Health Survey (TDHS) individual questionnaires. Educational level was categorised into primary, no education, primary level, secondary level and more than secondary level. Age (in years) were divided into four categories i.e < 25, 25–34, 35–44 and 45+.

The weighted wealth index was used to consider the household assets ownership, housing characteristics, fuel for lighting and cooking, type of toilet, source of water, and feeding characteristics. The variables were dichotomized and we used the Principal Component Analysis (PCA) to reduce 31 items to 14 in components one to three loaded before the hinge of the scree plot. Their factor loadings were used as item weights and totalled to yield the total wealth index for each household. This was then divided into quintiles designating lowest, low, middle, high, and highest quintiles of the wealth index (19, 20).

The employment status was measured based on participants self-reported type of job. Employed participants included those who reported currently being under formal or informal employment, self-employed included street workers, and daladala driver. Those who reported not involved in any income generating activities were coded as unemployed.

The dietary intake was assessed based on the Individual Dietary Diversity Score (IDDS) which measure varieties of food items consumed by individuals a previous day and night. Dietary Diversity Scores were

calculated by taking the sum of foods group consumed in the day that preceded the interview. Dietary diversity scores below three were considered low dietary intake, otherwise high (21, 22). This tool is a useful proxy indicator of nutrient adequacy of marginalized populations including rural elderly people in Sri Lanka as indeed, the performance of the indicators is improved when considering the quantities of food consumed (23).

Data analysis

Data were checked for completeness and consistency, cleaned and analysed using STATA software version 15 (Stata Corp. LP, College Station, United States of America). Respective descriptive analysis was used to summarize both categorical and numerical data. Logistic Regression analyses were used to determine factors associated with quality of life among PWIDS attending MAT clinic. The binary associations in the logistic regression model that reached $p < 0.2$ were subjected to a multiple logistic regression model.

Results

Socio-demographic characteristics of the participants

In total, 376 out of 381 PWIDS were enrolled in this study, yielding a 98.7% response rate. Most of them were males (92.6%). The mean age (\pm standard deviation (SD)) of participants at enrollment was 39 (± 8.9) years. Of the 376 participants, 45.5% were single, 56.4% had secondary education, 82.7% were employed, and 34% with above low wealth index. Table 1 shows these results.

Table 1
Socio-demographic characteristics of the study
participants (N = 376).

Characteristics	Frequency (n)	Percent (%)
Age group (years)		
<25	9	2.4
25–34	124	33.0
35–44	145	38.6
45+	98	26.1
<i>Mean age ± SD, years</i>	<i>38.7 ± 8.9</i>	
Marital status		
Single	171	45.5
Married	124	33.0
Divorced	59	15.7
Widowed	2	0.5
Chabiting	20	5.3
Education level		
No education	3	0.8
Primary	159	42.3
Secondary	212	56.4
Post-secondary	2	0.5
Employment status		
Employed	311	82.7
Unemployed	65	17.3
District of residence		
Mjini	141	37.5
Magharibi A	66	17.6
Magharibi B	158	42.0
Kaskazini A	2	0.5
Kusini Unguja	6	1.6

Characteristics	Frequency (n)	Percent (%)
Kati	3	0.8
Wealth index		
Highest	43	20.19
High	43	20.19
Middle	42	19.72
Low	43	20.19
Lowest	42	19.72

Clinical characteristics of the study participants

Table 2 shows the clinical characteristics of the study participants. More than half of the respondents (51.1%) were receiving between 50–99 mg dose of methadone per day. Duration on MAT ranged from 6 to 37 months. Most of them (70.2%) were on MAT services for more than one year, Vast majority (98.7%) had good dietary intake Adherence to MAT services among the respondents was high (79%). Nearly half of participants (48.7%) reported experiencing side effects due to methadone intake. The commonest side effect mentioned were constipation (75.8%) followed by loss of appetite (10.5%).

Table 2

Clinical characteristics of the study participants (N=376)

Characteristics	Frequency (n)	Percent (%)
<i>Current dose of methadone</i>		
<49 mg	50	13.3
50 – 99 mg	192	51.1
100 – 149 mg	96	25.5
150 – 199 mg	31	8.2
>199	7	1.9
<i>Median dose</i>	80.0	
<i>Adherence to methadone drug</i>		
High	297	79.0
Moderately	31	8.2
Low	48	12.3
<i>Mean ± SD</i>	1.34 ± 0.69	
<i>Duration in MAT treatment</i>		
6 – 12 months	112	29.8
13 – 24 months	103	27.4
25 – 36 months	84	22.3
37 months or above	77	20.5
Median	23.1	
<i>Experienced side effects</i>		
Yes	153	40.7
No	223	59.3
<i>Type of side effects (N=185)</i>		
Constipation	116	64.9
Loss of appetite	16	14.1
Difficult in sleeping	12	5.9
Too much night sweating	6	7.6
Others	3	7.6

<i>Dietary Diversity Score</i>		
<3	1	0.3
3+	375	99.7

Health-related quality of life among study participants

Table 3 shows the distribution of participants according to overall HRQOL. Most (81.6%) of PWIDS who were receiving MAT services had normal health related quality of life. In addition, most employed PWIDS (84.0%) had normal overall HRQOL compared to unemployed (16.0%). Only 23.16% of PWIDS who were in the middle quintile had normal HRQOL compared to those in the poor quintile (16.95%). Self reported normal HRQOL was increasing with age, education and adherence to Methadone.

Table 3
 Distribution of PWIDS according to HRQOL in Unguja (N = 376)

Variables	HRQOL		Total n (%)	p-value
	Low n (%)	Normal n (%)		
Age				0.968
< 25	2 (2.9)	7 (2.3)	9 (2.4)	
25–34	24 (34.8)	100 (32.6)	124 (33.0)	
35–44	26 (37.7)	119 (38.8)	145 (38.6)	
45+	17 (24.6)	81 (26.4)	98 (26.1)	
Sex				
Male	63 (91.3)	285 (92.8)	348 (92.6)	0.662
Female	6 (8.7)	22 (7.2)	28 (7.4)	
Marital status				0.708
Single	33 (47.8)	138 (45.0)	171 (45.5)	
Married/cohabiting	20 (29.0)	104 (33.9)	124 (33.0)	
Divorced	12 (17.4)	47 (15.3)	59 (15.7)	
Widowed	1 (1.4)	1 (0.3)	2 (0.5)	
Live with partners	3 (4.3)	17 (5.5)	20 (5.3)	
Education				0.452
No education	1 (1.4)	2 (0.7)	3 (0.8)	
Primary	34 (49.3)	125 (40.7)	159 (42.3)	
Secondary	34 (49.3)	178 (58.0)	212 (56.4)	
Post-Secondary	0 (0.0)	2 (0.7)	2 (0.5)	
District of residence				0.747
Mjini	30 (43.5)	111 (36.2)	141 (37.5)	
Magharibi A	13 (18.8)	53 (17.3)	66 (17.6)	
Magharibi B	25 (36.2)	133 (43.3)	158 (42.0)	
Kaskazini A	0 (0.0)	2 (0.7)	2 (0.5)	
Kusini Unguja	1 (1.4)	5 (1.6)	6 (1.6)	

Variables	HRQOL		Total n (%)	p-value
	Low n (%)	Normal n (%)		
Kati	0 (0.0)	3 (1.0)	3 (0.8)	
Employment status				0.011
Employed	53 (76.8)	258 (84.0)	311 (82.7)	
Unemployed	16 (23.2)	49 (16.0)	65 (17.3)	
Wealth index quintiles				0.006
Highest	13 (36.11)	30 (16.95)	43(20.19)	
High	9 (25.00)	34 (19.21)	43(20.19)	
Middle	1 (2.78)	41 (23.16)	42(19.72)	
Low	9 (25.00)	34 (19.21)	43(20.19)	
Lowest	4 (11.11)	38 (21.47)	42(19.72)	
Current dose of methadone				0.705
< 49 mg	10 (14.5)	40 (13.0)	50 (13.3)	
50–99 mg	36 (52.2)	156 (50.8)	192 (51.1)	
100–149 mg	18 (26.1)	78 (25.4)	96 (25.5)	
150–199 mg	3 (4.3)	28 (9.1)	31 (8.2)	
> 199 mg	2 (2.9)	5 (1.6)	7 (1.9)	
Dietary intake				0.924
< 3	0 (0.0)	1 (0.3)	1 (0.3)	
3 and above	69 (100.0)	306 (99.7)	375 (99.7)	
Adherence to Methadone				0.174
Strong	49 (71.0)	248 (80.8)	297 (79.0)	
Moderately	7 (10.1)	24 (7.8)	31 (8.2)	
Weak	13 (18.8)	35 (11.4)	48 (12.3)	
Duration in MAT treatment				0.4317
6–12 months	19 (27.5)	93 (30.3)	112 (29.8)	
13–24 months	14 (20.3)	89 (29.0)	103 (27.4)	

Variables	HRQOL		Total n (%)	<i>p</i> -value
	Low n (%)	Normal n (%)		
25–36 months	18 (26.1)	66 (21.5)	84 (22.3)	
> 36 months	18 (26.1)	59 (19.2)	77 (20.5)	
Experienced side effects				0.770
Yes	27 (39.1)	126 (41.0)	153 (40.7)	
No	42 (60.9)	181 (59.0)	223 (59.3)	

Factors associated with HRQOL among study participants

Table 4 below shows Factors associated with HRQOL among PWIDS at KCMAT Clinic. Only employment and wealth index were independently associated with better HRQOL. PWIDS who were employed had high odds of normal HRQOL compared to unemployed (95% CI 1.51–19.04, $p = 0.009$). Those with lowest wealth index was also associated with better HRQOL compared to middle quantile, although the effect size ranged in a wide confidence interval (95% CI 2.01–290.30, $p = 0.012$). Other variables were not significantly associated with normal HRQOL ($p > 0.05$).

Table 4
Factors associated with HRQOL among study participants (N = 376)

Factors	N (%)	Univariate			Multivariate		
		OR	95% CI	p-value	AOR	95% CI	p-value
Age							
< 25	7 (77.8)	1					
25–34	100 (80.6)	1.19	0.23–6.10	0.834			
35–44	119 (82.1)	1.31	0.26–6.66	0.747			
45+	81 (82.7)	1.36	0.26–7.13	0.715			
Sex							
Male	285 (81.9)	1					
Female	22 (78.6)	1.23	0.48–3.17	0.662			
Marital status							
Single	138 (80.7)	1					
Married/cohabiting	104 (83.9)	1.24	0.68–2.29	0.485			
Divorced	47 (79.7)	0.94	0.45–1.96	0.862			
Widowed	1 (50.0)	0.24	0.15–3.92	0.316			
Live with partners	17 (85.0)	1.36	0.37–4.90	0.643			
Education							
No education	2 (66.7)	1					
Primary	125 (78.6)	1.84	0.16–20.88	0.662			
Secondary	178 (84.0)	2.61	0.23–29.68	0.437			
Post-Secondary	2 (100.0)	NC*					
District of residence							
Mjini	111 (78.7)	1					

Factors	N (%)	Univariate			Multivariate		
		OR	95% CI	p-value	AOR	95% CI	p-value
Magharibi A	53 (80.3)	1.10	0.53–2.28	0.794			
Magharibi B	133 (84.2)	1.44	0.80–2.59	0.226			
Kaskazini A	2 (100.0)	NC*					
Kusini Unguja	5 (83.3)	1.35	0.15–12.01	0.787			
Kati	3 (100.0)	NC*					
Employment status							
Employed	258 (84.0)	1			1		
Unemployed	49 (16.0)	0.25	0.09–0.73	0.011	5.36	1.51–19.04	0.009
Wealth index quintiles							
Highest	30 (16.95)	1			1		
High	34 (19.21)	1.64	0.61–4.37	0.325	1.88	0.39–9.16	0.432
Middle	41 (23.16)	17.77	2.20–143.32	0.007	24.15	2.01–290.30	0.012
Low	34 (19.21)	1.64	0.61–4.37	0.325	2.01	0.38–10.56	0.409
Lowest	38 (21.47)	4.12	1.22–13.92	0.023	5.56	0.89–34.74	0.066
Current dose of methadone							
< 50 mg	40 (80.0)	1					
50–99 mg	156 (81.3)	1.08	0.50–2.37	0.841			
100–149 mg	78 (81.3)	1.08	0.46–2.56	0.856			
150–199 mg	28 (90.3)	2.33	0.58–9.25	0.228			
≥200 mg	5 (71.4)	0.63	0.11–3.71	0.605			
Adherence to Methadone							

Factors	N (%)	Univariate			Multivariate		
		OR	95% CI	p-value	AOR	95% CI	p-value
Strong	248 (83.5)	1					
Moderately	24 (77.4)	0.68	0.28–1.66	0.394			
Weak	35 (72.9)	0.53	0.26–1.08	0.080			
Duration in MAT treatment							
6–12 months	93 (83.0)	1			1		
13–24 months	89 (86.4)	1.30	0.61–2.75	0.494	0.68	0.22–2.13	0.505
25–36 months	66 (78.6)	0.75	0.37–1.38	0.430	1.38	0.44–4.29	0.583
≥37 months	59 (76.6)	0.67	0.33–1.38	0.277	1.80	0.30-10.87	0.519
Experienced side effects							
No	126 (82.4)	1					
Yes	181 (81.2)	1.08	0.63–1.85	0.770			

NC* = Not calculated due to small sample size

Discussion

Summary of findings

Overall, PWIDS who are on MAT services in Zanzibar had normal HRQOL. Only employment and wealth index are among the factors that independently associated with better HRQOL among PWIDS in Zanzibar (8, 24–28). This is supported by a study conducted at Muhimbili which shows greater improvements in Physical Health Composite Scores (PCS) than Mental Health Composite Score (MCS) and suggesting that methadone may have more immediate effects on physical health (28).

Level of HRQoL

We measured four domains of Quality of life using a standardized tool (18). These include physical health status, Psychological health, Social life and Personal relationships. Evidence from this study shows that more than 80% of PWIDS reported above-average good physical health status. This may be explained by the fact that MAT services are helpful to render PWIDS able to perform their duties and feel able to work (8, 24). Majority of PWIDS do have the capacity for work but also able to perform daily living

activities compared to the time where they were on heroin dependence (25, 28). This achievement might be due to good quality and timely psychosocial support provided to PWIDS.

The majority (73%) of participants reported above-average good psychological health (very much and an extremely). However, in many of the related studies MAT patients performed significantly worse than matched controls with no history of opioid use on measures of psychological situations (26–28). Nevertheless, it is unclear if the observed differences are because of MAT or because of long-term use of opioids in general. The findings from a study on effects of MAT for opioid use disorder on functional outcomes revealed that, although healthy controls are usually matched to patients on demographics and other characteristics, these individuals clearly differ in substance abuse history and may differ in unreported psychological, psychiatric, and family history characteristics that contribute to poor function. Quality of evidence for most outcomes was low or very low (26).

In the social relationship domain, except for sexual activities; a vast majority (80.6%) of PWIDS reported above-average satisfaction with the sexual activities and their personal relationship and social support. In addition, most of them do satisfy with social support from their friend but also, they do satisfy with their personal relationship which is different from the time of their heroin dependence. These situations are supported by the study conducted on HRQoL in individual Transferred from a NEP and starting OST conducted in Sweden which state that Despite having a high degree of problems due to using of illicit substances, signs of severe psychiatric symptomatology, and social problems, patients were retained in treatment to a high degree at 12-month follow-up (29). These might be due to different social and recreational services and support provided from NGOs where they enrol before referred to comprehensive MAT services.

More than two thirds of participants reported above-average good satisfaction with environmental health. About 18% of participants reported good environmental health status (opportunities for recreation/leisure and do not have enough money to meet their need) above average level (good and very good). Being in MAT service provide an opportunity for the client to access reliable health-related information and skills, but also have freedom, physical safety and security (30, 31). It was observed and evident that the level of trust worth among PWIDS who were on MAT services is increasing over time (32). This has been noticed as many of the family members report to meet with social workers and psychologist at the clinic for the purpose of discussing the best way as they want to offer capital for the business to their loved clients so as to help them in raising income to support their daily life.

Factors associated with HRQoL

Employment and wealth indexes were the only factors that were independently associated with normal HRQoL among PWIDS at KCMAT clinic. PWIDS who were unemployed were more likely to be associated with low HRQoL compared to employed PWIDS. Being unemployed increases chances of PWIDS to low HRQoL. Similar findings are reported for the association between poverty and quality of life among PWIDS (17). Employed individuals have a chance to plan for their daily life and can be able to buy or borrow property with high security in repaid back compared to those who are not in employment. Unemployment

and the financial problems resulted from the addicts' lack of role in the family and society which reduces the quality of life in the addicts (17, 33). Evidence generated from this study is consistent with the one conducted in Muhimbili MAT clinic which assessed HRQOL among clients (28).

PWIDS in the wealthier quintiles were more likely to have better HRQOL compared to those in the poorest quintile in this study. Economic status is the one among the most important factors in a day to day life of any person (17). PWIDS are not exempted and have high demand as other population in the world. Better economic situation improves the life of an individual. This will facilitate the improvement of getting necessary services that can also improve the overall health. This includes safe water, food, health services, and education. Owning some important properties is an indicator of how wealthier a person can be and can also facilitate and improve the quality of life thereof (22, 33, 34).

Limitations

This study included only participants who inject drugs (heroin injectors) who were on MAT services for atleast six months and exclude non injectors who were in the services.

Conclusions

High proportion of PWIDS treated with Methadone Assisted Therapy in Kidongo Chekundu Clinic have better health related quality of life. This was noted across all four HRQOL's domains. Employment and wealth index status were associated with the HRQOL among PWIDS who are receiving Methadone services in Zanzibar, Tanzania. None of the clinical factors were associated with better health related quality of life among PWIDS receiving MAT services in Zanzibar, Tanzania. To effect these there is a need to strengthen multisectoral collaborations, integrated and comprehensive MAT services within the clinic and other related areas with all relevant stakeholders so as to improve health related quality of life among PWIDS.

Abbreviations

AIDS: Acquire Immunodeficiency Syndrome; DDS: Dietary Diversity Scale; EuroQol: European Quality of Life; HBV: Viral Hepatitis B; HCV: Viral Hepatitis C; HFIAS: Household food insecurity Access Scale; HIV: Human Immunodeficiency Virus; MAT: Methadone Assisted Therapy /Medical Assisted Treatment; PCF: Change in Physical Factors; PWIDS: People Who Inject Drugs; STI: Sexual Transmitted Infections, WHOQoL: World Health Organization Quality of Life and ZIHHTLP: Zanzibar Integrated HIV, Hepatitis, Tuberculosis and Leprosy Programme.

Declarations

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Authors' contributions

SHH and BFS designed the study. SHH, NR,OM, BFS,DJD,AUK, and FJK participated in data collection. SHH, DJD, CM and BFS, analysed the data and drafted the manuscript. All authors contributed in the final draft of manuscript and gave final approval to the manuscript.

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Availability of data and materials

Due to ongoing analyses, the supporting data are available from the corresponding author on a reasonable request.

Ethics approval and consent to participants

The study tools and the proposal were approved by the Independent Review Board (IRB) of the Muhimbili University of Health and Allied Sciences through reference number DA.287/298/01A and Zanzibar Health Research Committee (ZAHREC) through reference number ZAHREC/02/July/2019/49. In addition, participants provided with the informed consent form to read and understand and final were requested to sign to ensure their readiness in participating in the study. An opportunity to withdraw from the study at any given time without any ramification in their care are provided to them. Moreover, respondents were assured that the information provided to this study was confidential. The findings will be used for decision-making and academic purposes and no individual information be published along with the results.

Consent for publication

Not applicable

Competing Interests

The authors declare that they have no competing interests.

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