Health-Related Quality Of Life And Its Determinants Among Recreational Drug Users In A Rural Area In Cameroon: A Cross-Sectional Study

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Abstract

Background

This study was aimed to evaluate the health-related quality of life (HRQoL) and its drivers among recreational drug users, compared to non-users using WHOQOL-BREF.

Methods

A total of 246 recreational drug users and 141 non-recreational drug users were recruited using consecutive sampling of adults in the community. Socio-demographic data, data related to recreational drug use and HRQoL were collected. Data were compared using t-test, analysis of variance and chi-square test. Determinants of HRQoL were obtained using multivariate regression models.

Results

The mean overall quality of life (OQOL) score was significantly higher for non-recreational drug users compared to users (75.89 ± 22.64 vs 61.08 ± 23.94, respectively, $p < 0.001$), non-users as well had significantly higher mean scores across all four domains of WHOQOL-BREF. After multivariable adjustment, use of recreational drugs negatively affected the psychological domain (β=-4.17, 95% CI -8.22 to -0,13) and the environmental domain (β=-4.47, 95% CI -8.48 to -0.45). Years of recreational drug use affected the social relationship domain (β=-0.55, 95% CI -0.88 to -0.22), OQOL (β=-0.57, 95% CI -0.94 to -0.19), and general health satisfaction (β=-0.71, 95% CI -1.08 to -0.35). Number of recreational drugs used contributed to poorer physical health (β=-1.45, 95% CI -2.57 to -0.33), psychological domain (β=-2.04, 95% CI -3.18 to -0.91), social relationship domain (β=-1.87, 95% CI -3.39 to -0.35) as well as overall quality of life (β=-2.13, 95% CI -3.89 to -0.37). Besides recreational drugs, monthly income also affected physical health (β = 5.17, 95% CI 2.96 to 7.38), psychological domain (β = 3.34, 95% CI 1.10 to 5.58), environmental domain (β = 2.64, 95% CI 0.42 to 4.85) and also the OQOL (β = 4.16, 95% CI 0.70 to 7.62).

Conclusions

Our findings suggest that, recreational drugs significantly negatively affect the health-related quality of life of its users. People who use multiple recreational drugs and longer years of recreational drug use had a more widespread effect across the health domains. Higher monthly income could improve the HRQoL of recreational drug users.

Background

Legal and illegal drugs used without medical supervision are referred to as recreational drugs [1]. Alcohol and other substances have for many years been utilized for recreational reasons. Alcohol falls in the category of recreational drugs known as depressants, other categories of recreational drugs includes; analgesics, stimulants and hallucinogens [1,2]. Drug abuse is growing public health problem in both low and high income countries, according world drug report in 2018, the number of deaths linked to drug abuse increased by 60% between the year 2000 and 2018 [3–7].

Cameroon is no different from the rest of the world when it comes to drug abuse. A study in 1996 found a diverse use of recreational drugs among males and female of all age groups [8], another study in Cameroon reported the prevalence of recreational drug use to be 1.64% among medical and nursing students in 2018 [9].

One of the important impacts of recreational drug use on the society is the negative effects on the health of its users. Use of alcohol and other recreational drugs have been identified as risk factors for non-communicable diseases, mental health problems, accidents and high risk behaviours. Drug use also inflicts heavy financial burden on individuals and community [10–13].

According to the World Health Organization (WHO), quality of life (QoL) refers to an individual's perception of his or her position in life, in the context of the culture and value systems in which he or she lives, and in relation to his or her goals, expectations, standards and concerns [14,15]. Health-related quality of life (HRQoL) is at times used interchangeably used with QoL, however, some authors consider it to be different or a subset of QoL [16,17]. HRQoL can be defined as an individual's assessment of his/her experiences, and expectations in health-related aspects of his/her life, notably; physical function, psychological well-being, subjective symptoms, social and cognitive

functions. It is also thought to extend to the person's perception of health correlates like health risks, social support, cultural beliefs and economic status [16–18].

Recreational drug use and the health effects of recreational drug use have been shown to affect the HRQoL of individuals [19,20]. In Cameroon, several studies [15,21–24] have been carried out to evaluate the QoL of people living with chronic health conditions. However, no study has been carried out to assess the QoL of recreational drug users in Cameroon. Our study fills this gap by evaluating the HRQoL and factors affecting the HRQoL of recreational drug users compared to non-users of recreational drugs in Cameroon.

Methods

Study design and setting

This was a community-based, observational, cross-sectional study. This study was conducted from March 2021 to May 2021 in Mamfe. Mamfe is a border town in the Southwest Region of Cameroon that is about 74 km away from Nigeria. Mamfe has a population of about 34,225 inhabitants spread over a surface area of 744 square kilometers (population density 46 persons/km^2). Mamfe is one of the areas affected by the ongoing socio-political crisis in Cameroon [25,26].

Sampling technique and study participants

A target sample size of 374 was obtained using a sample size calculator [27]. A margin of error of ± 5%, confidence level of 95% and a 50% response distribution were used. A population of 13,690 people was used since about 40% of the 34,225 inhabitants of Mamfe are adults [26], this study had 387 participants.

Consecutive sampling was used to recruit all individuals aged 18 years and above, that are permanent residents of Mamfe or have lived in Mamfe for at least 12 months and consented to the study. We excluded adults who were sick at the time of the study, those with chronic diseases, did not understand English and those with physical or mental disability.

Definition of terms and variables

Recreational drugs were defined as legal and illegal drugs used without medical supervision [1]. By this definition, alcohol, cigarettes, opioids and other illicit drugs were considered as creational drugs in this study

A recreational drug user was defined as someone who has consumed any recreational drug over the past 12 months [28]. A single question was used to assess this. There is evidence that using a single question for this purpose is valid for screening and evaluation of recreational drugs use [29]. The list of drugs included; alcohol, cigarettes, shisha, cannabis, cocaine, amphetamines, heroin, ecstasy, tramadol, diazepam and sleeping pills, lysergic acid diethylamide (LSD), erection enhancing drugs such as sildenafil. A non-recreational drug user was defined as an individual that has never used drugs for recreational purposes.

Units of alcohol consumed per week was calculated as 5% x volume of beer (in ml) consumed per week/1000 [30]. The average concentration of alcohol in alcoholic beer in Cameroon is 5%.

Physical type of employment generally referred to unskilled jobs such as farming, laborer, and other activities that involves mass lifting of > 20 kg. Non-physical type employment referred to skilled jobs and other employment types with mass lifting of < 20 kg [31].

Study procedures and data collection

Individuals who met the eligibility criteria and consented to the study were interviewed using a pretested structured questionnaire. A door-to-door approach was used to locate participants. To avoid double counting, each individual was asked if they had filled a similar questionnaire prior to recruitment for the study. Literate persons were allowed to fill the questionnaire by themselves after receiving instructions on how to fill the questionnaire. A face-to-face interview was done for illiterate people. Data collected were sociodemographic information, information on the use of recreational drugs and quality of life assessment of participants. Questionnaire was available in English.

The following sociodemographic variables were collected; gender, age, marital status (single, married or widowed), residence (internally displaced, not internally displaced), employment status (employed, housewife, student, unemployed/retired), employment type (physical, non-physical, or combined), level of education (no education, primary, secondary and tertiary education) and average monthly income (<

FCFA50.000, FCFA50.000−FCFA100.000, FCFA100.000−FCFA300000, and > FCFA300 000 FCFA (US$1 = FCFA530)). Information on the use of recreational drugs, types and frequency of drug used were also collected.

The WHOQOL-BREF questionnaire [32] was used to assess the health-related quality of life (HRQoL) of participants. The WHOQOL-BREF tool is a generic self-report HRQoL questionnaire. It was designed to be cross-culturally applicable and has been used in clinical practice and research to assess health outcomes, follow-up progression of a disease and compare health states. Compared to other HRQoL evaluation tools such as Short Form 36, WHOQOL-BREF was found to have good-to-excellent psychometric properties across health states [33,34].

The WHOQOL-BREF questionnaire consists of 26 questions, of which 24 are divided into four domains; physical health domain (PHD), psychological domain (PSD), environmental domain (END) and social relationships domain (SRD). The other two items in the questionnaire evaluates an individual's satisfaction with their state of health (general health score) and individual's self-perceived quality of life (OQoL score) [32]. The WHOQOL-BREF tool was chosen because of its cross-cultural applicability, low administrative burden, sensitivity and availability in English which is the official language of the study population. Each domain consists of several facets and questions are scored in a 5-point Likert response scale. Item scores obtained were transformed into domain scores using the procedure described in WHOQOL-BREF manual [32]. Scores are converted on a scale of 0 to 100 to allow for comparisons to be made across domains with unequal number of items. Scores were organized such that higher scores imply better health-related quality of life [32,35].

Data management and data analysis

Data collected were entered into Microsoft excel 2016, were cleaned, exported and was analyzed using Statistical Package for Social Sciences (SPSS v20). Continuous variables were summarized using mean and standard deviation. Categorical variables were summarized using counts and percentages. Sociodemographic variables were compared between recreational drug users and non-recreational drug users using Pearson's chi-square or Fisher's exact test. Mean quality of life scores across various domains were compared using independent t-test or one-way ANOVA. We used multivariate linear regression models to determine factors independently associated with WHOQOL-BREF scores. Statistical significance was set at $p < 0.05$.

Results

A total of 246 recreational drug users and 141 non-recreational drug users were recruited for this study. The mean age of participants was 34.54 years (SD = 10.96), the male to female ratio was 1.10:1, majority of the study population were single (48.70 %) and employed (55.30%). Details of the sociodemographic features of recreational drug users and non-recreational drug users are shown in Table 1. Higher proportion of males (64.23%) compared to females used recreational drugs, people who were single (48.36%), employed (54.07%), have average monthly income of < 50,000 FCFA (50.0%), attained secondary education (45.93%) and those with physical type of employment (48.78%) had higher proportion of recreational drug use.

Table 1
; Comparison of sociodemographic characteristics of recreational drug users and non-users

Sociodemographic variables	Recreational drug users (n = 246)	Non-recreational drug users (n = 141)	p-value
Age (mean, SD) (years)	36.17 (11.68)	31.70 (8.92)	0.000
Gender (n, %)			
Female	88 (35.77)	96 (68.09)	0.000
Male	158 (64.23)	45 (31.91)	
Residence (n, %)			
Not internally displaced	189 (76.83)	113 (80.14)	0.529
Internally displaced	57 (23.17)	28 (19.86)	
Marital status (n, %)			
Single	118 (48.36)	69 (49.29)	0.742
Married	111 (45.49)	65 (46.43)	
Widowed	15 (6.15)	6 (4.29)	
Employment status (n, %)			
Employed	133 (54.07)	81 (57.45)	0.009
Unemployed	86 (34.96)	40 (28.37)	
Student	17 (6.91)	10 (7.09)	
Housewife	1 (0.41)	8 (5.67)	
Retired	9 (3.66)	2 (1.42)	
Monthly income (FCFA) (n, %)			
< 50000	123 (50.00)	80 (56.74)	0.516
50000−99000	73 (29.67)	39 (27.66)	
100000−299000	43 (17.48)	20 (14.18)	
≥ 300000	7 (2.85)	2 (1.42)	
Level of education (n, %)			
Primary/no formal education	38 (15.45)	18 (12.77)	0.583
Secondary	113 (45.93)	72 (51.06)	
Tertiary	95 (38.62)	51 (36.17)	
Employment type (n, %)			
Non-physical	85 (34.55)	50 (35.46)	0.584
Physical	120 (48.78)	73 (51.77)	
Combined	41 (16.67)	18 (12.77)	

The proportions, frequencies, means and SDs are displayed. Chi-square test (for 2×N tables) and t-test (for continuous variables) were used to compare across the two groups. p-value < 0.05 indicated statistically significant difference

Table 2 shows WHOQOL-BREF mean domain score differences between recreational drug users and non-users. Compared to recreational drug users, non-recreational drug users had significantly better scores across all four domains, as well as significantly better overall quality of life (OQOL) and general health satisfaction (GHS). Among recreational drug users, the highest score was in the psychological domain while the environmental and social relationship domains had the lowest scores.

Table 2

; WHO-BREF domain score differences between recreational and non-recreational drug users

WHO-BREF domain	Recreational drug users mean (SD)	Non-recreational drug users mean (SD)	p-value
Physical health	59.28 (15.37)	66.37 (12.68)	0.000
Psychological	61.28 (16.24)	71.82 (9.72)	0.000
Social relationships	48.83 (19.59)	57.75 (18.01)	0.000
Environmental	46.54 (14.51)	52.16 (13.86)	0.000
Overall quality of life	61.08 (23.94)	75.89 (22.64)	0.000
General health satisfaction	57.52 (23.13)	72.87 (19.71)	0.000
Values are represented in mean and standard deviation (SD). Independent sample t-test was used for comparison, p-value < 0.05 indicated statistically significant difference			

Variations in the mean WHOQOL-BREF domain scores as well as the OQOL and GHS across sociodemographic variables are shown in Table 3. When compared to males, females had significantly better quality of life (QOL) across all domains, the OQOL and GHS scores were also significantly higher for females. People who are not internally displaced had better scores in the environmental domain (END) and OQOL compared to internal displaced persons (p < 0.05). People who are widowed scored higher in the END and social relationship domain (SRD) compared to single and married people (p < 0.005). In terms of employment status, no single demographic characteristic had consistently better scores across all domains, however, retired individuals had significantly worse OQOL and GHS. People with average monthly income ≥ 300,000 FCFA had superior scores across all aspects of WHOQOL-BREF compared to people with lower monthly income, this superiority was statistically significant in all aspects except in psychological domain (PSD) and SRD. People who have attained tertiary education and people who have used recreational drugs for less than 5 years had significantly better scores across most aspects of WHOQOL-BREF. Compared to their counterparts, people using 2 or more recreational drugs and people who consumed more than 14 units of alcohol per week had significantly poor scores across most aspects of WHOQOL-BREF.

Table 3
; Association of sociodemographic variables with WHOQOL-BREF domains

Variable	PHD	PSD	SRD	END	OQOL	GHS
Gender						
Male	60.27 (16.19)	63.35 (16.34)	48.55 (20.91)	46.93 (15.04)	62.07 (26.95)	59.61(25.49)
Female	63.63 (12.98)	67.08 (13.34)	55.98 (17.00)	50.42 (13.71)	71.33 (20.50)	66.98 (19.57)
p-value	0.026	0.015	0.000	0.018	0.000	0.002
Residence						
Not internally displaced	62.10 (14.98)	65.60 (14.62)	51.71 (18.43)	50.83 (13.08)	70.70 (21.23)	63.99 (21.78)
Internally displaced	61.04 (14.32)	63.42 (16.61)	53.40 (22.91)	40.61 (16.51)	51.47 (29.21)	60.00 (27.33)
p-value	0.561	0.240	0.481	0.000	0.000	0.160
Marital status						
Single	63.48 (14.72)	64.89 (15.61)	50.52 (20.29)	46.11 (15.62)	65.24 (25.70)	62.83 (23.67)
Married	60.97 (14.41)	65.48 (15.09)	52.49 (18.67)	50.63 (13.19)	68.75 (22.91)	64.63 (22.89)
Widowed	56.38 (18.15)	66.14 (10.17)	64.62 (14.80)	55.14 (10.08)	65.48 (20.12)	55.95 (19.21)
p-value	0.058	0.896	0.007	0.001	0.372	0.250
Employment status						
Employed	65.72 (13.45)	66.68 (14.68)	51.98 (20.34)	51.61 (12.37)	71.38 (23.01)	67.76 (21.81)
Unemployed	56.98 (14.23)	60.90 (15.80)	51.25 (18.65)	44.30 (17.09)	60.12 (26.11)	55.36 (23.58)
Student	59.78 (19.28)	70.89 (13.89)	57.37 (16.68)	45.26 (14.80)	66.67 (20.80)	73.15 (18.25)
Housewife	62.00 (15.61)	72.89 (7.62)	47.33 (10.01)	44.67 (7.62)	58.33 (12.50)	58.33 (12.50)
Retired	47.73 (9.63)	62.82 (9.68)	54.55 (24.07)	50.27 (11.35)	50.00 (27.39)	40.91 (23.11)
p-value	0.000	0.000	0.571	0.000	0.000	0.000
Monthly income (FCFA)						
< 50,000	58.85 (15.14)	63.74 (15.29)	53.17 (19.50)	45.77 (15.30)	62.32 (26.25)	60.47 (23.69)
50-99000	64.62 (14.69)	65.24 (15.73)	52.28 (20.58)	50.29 (13.49)	68.53 (20.89)	66.96 (21.28)
100-299000	65.06 (11.48)	68.06 (12.48)	48.03 (15.98)	53.51 (12.08)	73.81 (23.08)	62.30 (22.84)
≥ 300000	73.11 (15.81)	74.22 (14.85)	53.44 (26.27)	56.44 (9.50)	83.33 (12.50)	80.56 (24.30)
p-value	0.000	0.060	0.343	0.000	0.000	0.012
Level of education						
Primary/no formal education	55.91 (15.31)	60.89 (14.98)	52.68 (21.37)	47.82 (12.45)	61.61 (26.53)	53.13 (20.26)
Secondary	61.92 (15.09)	65.10 (15.57)	51.86 (18.68)	46.83 (16.79)	63.65 (25.66)	62.84 (23.47)
Tertiary	64.07 (13.75)	66.78 (14.25)	52.14 (19.86)	51.12 (11.56)	71.92 (21.15)	67.29 (22.66)
p-value	0.002	0.045	0.962	0.025	0.003	0.000
Employment type						
Non-physical	61.28 (15.89)	64.50 (15.52)	53.45 (19.17)	49.76 (14.95)	70.19 (21.27)	67.78 (23.03)
Physical	61.92 (14.66)	65.52 (15.39)	49.94 (18.75)	47.63 (14.57)	63.73 (26.75)	59.20 (23.17)
Combined	63.02 (12.90)	65.25 (13.12)	55.95 (21.88)	49.03 (13.26)	66.95 (22.95)	65.25 (21.28)

Proportions were compared using independent sample t-test and one-way ANOVA. p < 0.005 indicated significant difference.

Variable	PHD	PSD	SRD	END	OQOL	GHS
p-value	0.754	0.830	0.070	0.412	0.062	0.003
Years of drug use						
< 5	65.63 (14.19)	69.15 (12.86)	56.85 (18.15)	49.44 (14.48)	71.35 (24.94)	70.81 (20.51)
5–9	59.09 (16.62)	61.33 (17.18)	46.14 (17.64)	43.45 (15.51)	63.46 (20.42)	61.54 (21.95)
≥ 10	57.98 (13.21)	61.51 (15.34)	48.70 (20.86)	50.56 (13.23)	61.09 (24.96)	52.62 (23.39)
p-value	0.000	0.000	0.000	0.002	0.001	0.000
Number of drug use						
0	66.34 (12.63)	73.06 (8.30)	58.41 (17.59)	52.08 (13.54)	78.23 (20.90)	74.80 (18.72)
1	60.12 (16.81)	56.98 (16.50)	44.83 (24.43)	43.95 (15.93)	62.08 (23.69)	52.03 (24.48)
≥ 2	55.48 (12.57)	57.58 (17.510	42.75 (18.29)	45.91 (14.58)	52.47 (22.57)	53.09 (21.79)
p-value	0.000	0.000	0.000	0.000	0.000	0.000
Units of alcohol/week						
≤ 14	64.96 (14.72)	69.35 (11.92)	57.03 (19.01)	51.10 (13.73)	72.22 (22.83)	69.91 (19.52)
> 14	57.99 (14.34)	60.06 (17.04)	45.94 (18.38)	45.55 (14.08)	59.26 (25.06)	53.86 (24.85)
p-value	0.001	0.000	0.000	0.000	0.000	0.000
Proportions were compared using independent sample t-test and one-way ANOVA. p < 0.005 indicated significant difference.						

Table 4 shows the results of multivariate linear regression analysis of factors independently associated with WHOQOL-BREF scores. After adjustments for possible confounding factors, increasing age was associated with better SRD (β = 0.39, p < 0.05) and poorer GHS (β = -0.34, p < 0.05). Using recreational drugs affected the PSD (β = -4.17, p < 0.05) and END (β = -4.47, p < 0.05). The SRD (β = -0.55, p < 0.01), OQOL (β = -0.57, p < 0.01) and GHS (β = -0.71, p < 0.001) were significantly influenced by years of recreational drug use. The use of multiple recreational drugs influenced the PHD (β = -1.45, p < 0.05), PSD (β = -2.04, p < 0.001), SRD (β = -1.87, p < 0.05) and the OQOL (β = -2.13, p < 0.05). Higher pack years of smoking was associated with poorer PSD (β = -0.32, p < 0.05), SRD (β = -0.61, p < 0.01) and OQOL (β = -0.67, p < 0.01). Higher monthly income was associated with significantly better PHD (β = 5.17, p < 0.001), PSD (β = 3.34, p < 0.01), END (β = 2.64, p < 0.05) and OQOL (β = 4.16, p < 0.05).

Table 4
; Multivariate regression model showing factors independently associated with WHOQOL-BREF scores.

Variable	PHD $aR^2 = 0.193$		PSD $aR^2 = 0.199$		SRD $aR^2 = 0.139$		END $aR^2 = 0.150$		OQOL $aR^2 = 0.274$		GHS $aR^2 = 0.230$	
	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Age in years	-0.21	-0.43, 0.01	0.02	-0.20, 0.25	**0.39***	**0.08, 0.69**	0.07	-0.16, 0.29	0.23	-0.12, 0.58	**-0.34***	**-0.68, 0.00**
Gender	-0.83	-4.05, 2.39	2.57	-0.70, 5.83	-0.96	-5.33, 3.41	-1.27	-4.50, 1.97	-1.18	-6.23, 3.87	0.65	-4.26, 5.55
Marital status	-0.50	-3.75, 2.75	0.04	-3.26, 3.33	2.81	-1.61, 7.22	1.98	-1.29, 5.24	-1.01	-6.10, 4.08	**6.12***	**1.17, 11.07**
Level of education	-1.66	-4.16, 0.84	0.12	-2.42, 2.65	0.07	-3.32, 3.46	-0.62	-3.13, 1.89	-0.16	-4.08, 3.76	1.44	-2.37, 5.25
Employment type	1.50	-0.56, 3.56	1.68	-0.40, 3.77	0.84	-1.95, 3.64	0.12	-1.95, 2.18	-1.29	-4.52, 1.93	-2.11	-5.25, 1.02
Use of recreational drugs	-1.20	-5.20, 2.80	**-4.17***	**-8.22, -0.13**	-0.27	-5.70, 5.15	**-4.47***	**-8.48, -0.45**	-3.94	-10.20, 2.32	-4.74	-10.83, 1.35
Years of recreational drug use	-0.12	-0.36, 0.12	-0.09	-0.34, 0.15	**-0.55****	**-0.88, -0.22**	0.07	-0.17, 0.31	**-0.57****	**-0.94, -0.19**	**-0.71*****	**-1.08, -0.35**
Number of drug use	**-1.45***	**-2.57, -0.33**	**-2.04*****	**-3.18, -0.91**	**-1.87***	**-3.39, -0.35**	-0.02	-1.15, 1.10	**-2.13***	**-3.89, -0.37**	-1.28	-2.99, 0.43
Units of alcohol per week	-0.05	-0.14, 0.05	-0.08	-0.17, 0.02	0.05	-0.08, 0.18	-0.056	-0.15, 0.04	0.03	-0.12, 0.18	0.03	-0.11, 0.18
Pack years of smoking	-0.02	-0.33, 0.29	**-0.32***	**-0.63, 0.00**	**-0.61****	**-1.03, -0.19**	-0.24	-0.55, 0.08	**-0.67****	**-1.16, -0.18**	-0.18	-0.66, 0.30
Residence	1.82	-1.66, 5.29	-0.55	-4.08, 2.97	1.78	-2.93, 6.50	**-7.32***	**-10.81, -3.83**	-6.70	-2.15, -1.25	-1.67	-6.97, 3.63
Employment status	-2.13	-3.88, -0.39	1.49	-0.28, 3.26	-0.89	-3.26, 1.48	-1.27	-3.03, 0.48	**-2.93***	**5.67, -0.19**	-2.46	-5.12, 0.198
Monthly income(FCFA)	**5.17*****	**2.96, 7.38**	**3.34****	**1.10, 5.58**	-1.51	0.32, 1.48	**2.64***	**0.42, 4.85**	**4.16***	**0.70, 7.62**	3.28	-0.08, 6.65
β = beta coefficient, CI = confidence interval												
*** Beta coefficient significant at < 0.001												
** Beta coefficient significant at < 0.01												
* Beta coefficient significant at < 0.05												

Discussion

Recreational drug use is a recognized cause of diminished quality of life, the extent of its effect on QOL varies with certain demographic factors such as age, sex and even the type, number and duration of drug use. The aim of this study was to evaluate the HRQoL and its determinants among recreational drug users compared to non-recreational drug users. We found that non-recreational drug users had significantly better scores across all four WHOQOL-BREF domains, as well as significantly better OQOL and GHS when compared to recreational drug users. Other factors such as number and years of recreational drug use, age, gender, marital status and average monthly income also affected the WHOQOL-BREF domain scores. After adjustments, increasing age predicted better PHD but poorer GHS, use of recreational drug was associated with poorer PSD and END. As the years of recreational drug use increased the SRD, OQOL and GHS worsened. Using multiple recreational drugs predicted poorer PHD, PSD, SRD and OQOL. Higher pack years of smoking was associated

with poorer PSD, SRD and OQOL. Being internally displaced predicted poorer END. And higher monthly income positively influenced PHD, PSD, END and OQOL.

Our study demonstrated that non-recreational drug users have significantly better mean scores across WHOQOL-BREF domains compared to non-users, this is in line with other studies [36–38] carried out in western countries. Unlike other studies [36–38] in which the psychological domain was the most impaired among recreational drug users, our study showed that the environmental domain of the WHOQOL-BREF was the most impaired amongst drug users. This could be due to the fact that this study was carried out in an area with an ongoing civil war, people living in war zones will likely assess their living environment to be unsafe and unhealthy [39]. Even among non-recreational drug users in this study, the environmental domain had the least score.

The study by Domingo-Salvany et al [40] as well as other western studies [15,34–36] clearly demonstrated that QOL of drug users is made worse by consumption of multiple recreational drugs, longer years of recreational drug use, older age, low average monthly income and low level of education, our findings in this study are similar to what was reported by these studies. The lower QOL of drug users compared to non-users cannot only be explained by duration, number or amount of drugs use but also by the negative effects of drug use in several areas of their lives with varying severity [38].

In this study, females had superior mean WHOQOL-BREF domain scores when compared to men. This differs from other studies [36,40] where females were reported to have poorer QOL. The difference could be due to the fact that far lower proportion (less than half) of women in this study used recreational drugs compared to the other studies and most (over 75%) of the men in this study were drug users. Hence there were fewer females with the effect of recreational drug use on their health.

After controlling for other factors, number of recreational drugs used was the only factor independently associated with worse physical health score, while monthly income independently predicted better PHD, monthly income was also associated with better PSD, END and OQOL after controlling for other factors. This is similar to findings by Moreira et al in Brazil. According to this study, people with low monthly income were more likely to have poor QOL independent of other factors such as use of recreational drugs [36].

Use of recreational drugs, number of recreational drugs use, years of recreational drug use and pack years of smoking each independently predicted poorer PSD and/or SRD. This finding is similar to other studies in Africa and western countries [15,36–38]. Drug users have been shown to have high prevalence of psychiatric disorders which independently influence their psychological and overall QOL [38].

In this study, apart from average monthly income which positively influence the END, use of recreational drugs and whether an individual is internally displaced or not each independently predicted poor environmental health after controlling for other factors. In another study [36], use of recreational did not affect the END scores. Probable loss of perception of problems related to the environment was suggested as the reason for high END scores among users. In our study being internally displaced and the ongoing sociopolitical crisis in the setting of this study heavily impaired the environmental health of participants.

Our study had some limitations; we used a cross-sectional design which impaired our ability to determine causality which would have been possible with a prospective cohort design. Our findings should be generalized with caution as they likely reflect the situation of a rural area that is affected by civil war. In addition, we did not explicitly assess if there were other ongoing events in the lives of participants that could influenced their responses other than use of recreational drugs. Furthermore, all measures of the WHOQOL-BREF were based on self-reports, the veracity of the responses of individuals cannot be controlled. Finally, there are no population modalities for the use of WHO-BREF in Cameroon. The lack of reference for Cameroon limited our ability to precisely analyse health outcomes.

We however reduced some of the limitations, by choosing a widely validated tool that was developed to be applied across different cultures and allows for comparisons throughout various settings. Future studies to develop a tool that is adapted to assess HRQoL for our environment could go a long way to improve the evaluation of the impact of recreational drug use on the HRQoL of individuals in this environment.

Conclusions

Our findings suggest that, recreational drugs impedes the HRQoL of its users. Number of recreational drugs used, years of drug use, pack years of smoking, age and average monthly income each independently influenced the HRQoL of participants. To the best of our knowledge, this study is the first of its kind in Cameroon to provide evidence of diminished HRQoL among recreational drug users in Cameroon. This could serve as basis for appropriate health promotion and sensitization programs to curb the use of recreational drugs which are proven to be detrimental to the health of its users.

Abbreviations

QOL; Quality of life

HRQoL; Health-related quality of life

WHO; World Health Organization

WHOQOL-BREF; World Health Organization Quality of Life Brief

OQOL; Overall quality of life

GHS; General health satisfaction

SPSS; Statistical Package for Social Sciences

CI; Confidence interval

SD; Standard deviation

Declarations

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Author's contributions

AEN: conception and design of the study, data collection, data interpretation and data analysis, drafting and review of the manuscript. FEJ: conception and design of the study, data collection, review of the manuscript. AEN and NSS data analysis, data interpretation, drafting and review of the manuscript. NDK and SENA data interpretation, SENA drafting and review of the manuscript. All authors revised and approved the final version of the manuscript.

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Availability of data materials

The dataset is available from the corresponding author on reasonable request.

Ethics approval and consent to participate

Ethical approval was obtained from the Institutional Review Board of the Faculty of Health Sciences of the University of Buea. Administrative approvals were obtained from the Southwest Regional Delegation of Public Health and the District Medical Officer for Mamfe. Participants also gave written consent to willingly participate in this study after careful explanation of the study scope and purpose. Data were kept completely anonymous and confidentiality was maintained during processing of questionnaires.

Consent for publication

Not applicable

Competing interests

The authors declare that they have no competing interest.

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