Prevalence and Predictors of Alcohol Consumption among the Squatter of Kathmandu Valley

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ABSTRACT

Background: Alcohol consumption has grown up sharply over the past decades in Nepal. Conversely, little is known about this phenomenon among the urban poor. We assessed pattern, frequency, context, and type of alcohol consumption among the urban poor of Nepal.

Methods: We executed a cross-sectional study, taking 422 households from four squatter settlements of Kathmandu Valley. Modified Nepalese version standard questionnaire was used for data collection. Data was objectively analyzed in SPSS full version 19.

Results: The study reported 39.81% (95% CI: 32.41-47.21) current drinkers, with male (65.99%, 95% CI: 57.85-74.13) outnumbering female (16.89%, 95% CI: 4.98-28.80). One out of ten drinkers drank daily (male: 13.08%, female: 13.16%). A third (30.36%) of all current drinkers acknowledged drinking more than one type of alcohol (male: 28.46%, female: 36.84%). Nearly half (47.60%) of the drinkers drank in social gathering (male: 47.90%, female: 47.60%). Home was the place of drinking for nearly one-fifth (18.60%) of the drinkers. Males most commonly drank alcohol with their friends (34.60%), whereas female drank with family members (25.60%). Nearly half of the drinkers drank during evening hour (45.24%). Multivariable analysis detected likelihood of drinking 5.86 times (95% CI: 2.50-13.72) in male and 3.16 times (95% CI: 1.39-7.13) in those with family history of alcohol.

Conclusions: We found high prevalence of alcohol consumption than the national average among the urban poor with a marked gender difference by pattern. Gender sensitive alcohol prevention and control programs need a greater start.

Keywords: Alcohol consumption; kathmandu valley; nepal; predictors; urban poor.

INTRODUCTION

The World Health Organization (WHO) approximates that two billion people worldwide consume alcohol.[1] One of the four major risk factors of Non Communicable Diseases (NCDs),[2] it is accountable to 5.9% of all deaths across the globe.[3]

Particularly urban population living in squatter carry more vulnerability towards alcohol consumption, chiefly due to stressful situations they come across their lives.[4] Special groups like urban poor face severe health and social consequences due to less range of social buffer to act as a shield against harm of alcohol consumption.[5]

Very little information is available on urban poor's alcohol consumption pattern, frequency, type, and context in Nepal. As the country has already stepped in addressing health needs of the marginalized population, having researched alcohol consumption among the urban poor can aid significantly to behavior change communication activities to address

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alcohol among these at-risk population. We thus aimed to determine alcohol consumption pattern, frequency, type, and context among the urban poor of Nepal.

METHODS

A descriptive, cross-sectional study using quantitative method was carried out in squatter settlements of Kathmandu Valley. Altogether 40 squatter settlements exist in Kathmandu Valley, holding 12,726 people with an average per capita income below $1 per day.[6]

An independent Ethical Review Board (ERB) of Nepal Health Research Council (NHRC) granted ethical approval. Before proceeding interview, we informed respondents about study objectives, procedure, and their role in the study. Assuring confidentiality and voluntary participation, we took written consent from every respondent before collecting data in the presence of third person as a family member.

Applying formula $N= Z^2 PQ / d^2$, (50% assumed for conservative sample size estimates, with a 5% allowable error, 95% confidence level, and adding 10% non-response rate), we calculated sample size of 422. We did a multistage random sampling. The primary sampling unit included squatter settlements of Kathmandu Valley. Four out of forty squatter settlements were chosen randomly, namely Shankamul, Ramhiti Improved, Manohara Bhaktapur, and Radhakrishna Chowk. Secondary sampling unit consisted of 422 households. Likewise, tertiary sampling unit comprised of household member, aged 18 years and above. Due to lack of households list in the sampled squatter settlements, we did purposive sampling of households. In a household with two or more members, aged 18 years and above, we used folded pieces of paper to select one by chance.

We took Gender, Alcohol, and Culture: an International Study (GENACIS) questionnaire[7] as a reference for the study. Then after, GENACIS questionnaire was modified to meet our study objective. The questionnaire contained list of questions on drinking pattern, frequency, context, and type of alcohol consumed, together with pertinent socio-demographic characteristics related questions. Three enumerators (two staff nurse and one health assistant) trained by principal investigator underwent a face-to-face interview with the selected samples. Various issues covered during training of enumerators were accordingly: techniques of conducting interview, taking control of the interview, and behaving with the sensitive parts of the questionnaire like frequency, time, etc of alcohol consumption as alcohol consumption is very often not culturally accepted, especially for females.

Interviewers were also supervised throughout the data collection by principal investigator.

The study defined alcohol consumption as consumption of any alcohol products by the respondent at any time in 12 months period prior to the survey.[1]

Similarly, operational definitions of pattern of alcohol consumption included:

Lifetime abstainer: Those respondents who never consumed alcohol in their life time were defined as life time abstainer.[1]
Former drinker: Those respondents who previously consumed alcohol but not in the previous 12 months were defined as former drinkers.[1]
Current drinker: Those respondents consuming alcoholic drink in the last 12 months were defined as current drinker.[1]

Categorization for frequency of alcohol consumption was: daily, three or four times a week, once or twice a week, four to seven times a month, and one to three times a month.[7] Context of alcohol consumption was desegregated based on occasion, place, companion, and time for alcohol consumption.[8] Classification of types of alcohol consumption comprised of: Jad/ Chhyang (local beer), Beer, Home-made raksi (spirit), Local raksi available at market, Distillery products (brandy, rum, vodka, whiskey), Foreign made liquors (wine, brandy, gin, whiskey etc.), and combination (more than one type of alcohol).[9]

Univariate, bivariate, and multivariable analyses were done in SPSS full version 19. For each gender group, we computed percentage distribution of socio-demographic characteristics. In univariate analysis, pattern, frequency, context, and type of alcohol consumption stratified by gender were presented. Further, drinking pattern was analyzed by gender and socio-demographic characteristics. Association between alcohol consumption and socio-demographic characteristics were assessed in bivariate analysis through Chi-square test. Variables that were significantly associated in bivariate analysis were considered in multivariable analysis to compute the adjusted odds ratio. Logistic regression model was considered for multivariable analysis.

RESULT

Of the 422 samples, 197 (46.70%) were male (age 18 to 64, mean age± SD=38.53 ± 13.70) and 225 (53.30%)

were female (age 18 to 64, mean age±SD=37.82 ± 13.78). The majority were 25-44 years of age (male: 43.15%, female: 42.22%), dalit and disadvantaged janajati (male: 71.57%, female: 78.67%), and Hindu (male: 74.11%, female: 62.22%). Fewer respondents completed higher secondary and above education (male: 17.77%, female: 15.11%). Figure of unemployment was notable (male: 73.10%, female: 56.44%) (Table 1).

We analyzed frequency, type, context, and age at initiation of drinking among current drinkers (n=168). The study found that 39.81% (95% CI: 32.41-47.21) were current drinkers. More male were drinking than the female did (male: 65.99%, female: 16.89%). It was 50.95% (95% CI: 44.27-57.63) respondents who were life time abstainers, while 9.24% were former drinkers. Relatively, more female were lifetime abstainers than their male counterparts. On an average, male initiated drinking two years earlier than the female (male: 16.78±3.20 years, female: 18.92±3.53 years, p=0.001).

One-third (35.12%) drinkers drank once or twice a week (male: 33.08%, female: 42.10%), although it was not statistically significant (p=0.198). Figure of drinkers who consumed more than one type of alcohol was 30.36%, with 28.46% male and 36.84% female (Table 2).

Concerning occasion, 47.60% consumed alcohol during social gatherings (male: 47.90%, female: 46.70%, p=0.377), nevertheless that was not statistically significant. Place of alcohol consumption reported by current drinkers were: home (18.60%) followed by relative's house (14.40%), and a friend's house (14.40%). Males most commonly drank alcohol with their friends (35.00%), whereas female drank with family members (25.00%). Nearly half of the drinkers drank during evening hour (45.24%) (Table 3).

An analysis of gender and age group uncovered the fact of more male drinkers from 25-44 years and 45-65 years, and more female drinkers from 45-64 years age

Table 1. Distribution of socio-demographic characteristics by gender			
Characteristics	Male (n=197)	Female (n=225)	p*
	N (%)	N (%)	
Age in years			
18-24	40(20.30)	55(24.45)	0.509
25-44	85(43.15)	95(42.22)	
45-64	72(36.55)	75(33.33)	
Mean ±Standard deviation	38.53 ± 13.70	37.82 ± 13.78	
Ethnicity			
Dalit and disadvantaged Janajati	141(71.57)	177(78.67)	0.092
Upper caste (Brahmin and Chhetri)	56(28.43)	48(21.33)	
Religion			
Hindu	146(74.11)	140(62.22)	0.009
Non-Hindu (Muslim, Buddhist, Christian)	51(25.89)	85(37.78)	
Highest education			
Up to secondary	162(82.23)	191(84.89)	0.462
Higher secondary and above	35(17.77)	34(15.11)	
Occupational status			
Employed	53(26.90)	98(43.56)	0.000
Unemployed	144(73.10)	127(56.44)	
Marital status			
Married	130(65.99)	136(60.44)	0.239
Unmarried and others	67(34.01)	89(39.56)	

Table 2. Pattern, frequency, and type of alcohol consumption by gender.

Alcohol consumption	Male	Female	Total	
	N (%)	N (%)	N (%) (95% CI)	%
Pattern	(n=197)	(n=225)	(n=422)	
Life time abstainer	52(26.400)	163(72.44)	215(50.95)	44.27-57.63
Former drinker	15(7.61)	24(10.67)	39(9.24)	0.15-18.33
Current drinker	130(65.99)	38(16.89)	168(39.81)	32.41-47.21
Age at first initiation of drinking (Mean ± Standard deviation)	16.78±3.20	18.92± 3.53	17.26± 3.39	
Frequency	(n=130)	(n=38)	(n=168)	
Daily	17(13.08)	5(13.16)	22(13.10)	0.00-27.19
Three or four times a week	24(18.46)	7(18.42)	31(18.45)	4.80-32.10
Once or twice a week	43(33.08)	16(42.10)	59(35.12)	22.94-47.30
Four to seven times a month	25(19.23)	4(10.53)	29(17.26)	3.51-31.01
One to three times a month	21(16.15)	6(15.79)	27(16.07)	2.22-29.92
Types	(n=130)	(n=38)	(n=168)	
Jaad/Chyang	17(13.08)	4(10.53)	21(12.50)	0.00-26.64
Beer	18(13.85)	5(13.16)	23(13.69)	0.00-27.74
Home-made raksi	19(14.61)	4(10.53)	23(13.69)	0.00-27.74
Local raksi available at market	27(20.77)	8(21.05)	35(20.83)	7.38-34.28
Distillery products (Brandy, Rum, Vodka)	12(9.23)	3(7.89)	15(8.93)	0.00-23.36
Combination (more than one type)	37(28.46)	14(36.84)	51(30.36)	17.74-42.98

Table 3. Contexts of alcohol consumption by gender.

Contexts of alcohol consumption	Male	Female	Total	
	N (Column %)	N (column %)	N (Column %)	% (95% CI)
Occasion of consumption	n=188	n=60	n=248	
Traditional and cultural celebration	57(30.30)	19(31.70)	76(30.60)	20.24-40.96
Social gathering	90(47.90)	28(46.70)	118(47.60)	38.59-56.61
Anytime (no special occasion)	41(21.80)	13(21.70)	54(21.80)	10.79-32.81
Place of consumption	n=289	n=115	n=404	
Home	58(20.10)	17(14.80)	75(18.60)	9.79-27.41
Bar/restaurant/hotel	17(5.90)	7(6.10)	24(5.90)	0.00-15.33
Neighbor's house	25(8.70)	21(18.30)	46(11.40)	2.22-20.58
Relative's house	43(14.90)	15(13.00)	58(14.40)	5.36-23.44
Friend's house	40(13.80)	18(15.70)	58(14.40)	5.36-23.44

Workplace	28(9.70)	11(9.60)	39(9.70)	1.00-18.99
Party	33(11.40)	14(12.20)	47(11.60)	2.44-20.75
Local shop	45(15.60)	12(10.40)	57(14.10)	5.07-23.13
Companion for consumption	n=231	n=96	n=327	
Alone	8(3.50)	17(17.70)	25(7.60)	0.00-17.99
With family	59(25.50)	24(25.00)	83(25.40)	16.04-34.76
With friend's	80(34.60)	20(20.80)	100(30.60)	21.57-39.63
With spouse	25(10.80)	12(12.50)	37(11.30)	1.10-21.50
With co-workers	33(14.30)	9(9.40)	42(12.80)	2.70-22.90
With relatives	26(11.30)	14(14.60)	40(12.20)	2.06-22.34/
Time for consumption	n=130	n=38	n=168	
Morning	6(4.62)	4(10.53)	10(5.95)	0.00-20.61
Afternoon	8(6.15)	6(15.79)	14(8.33)	0.00-22.80
Evening	61(46.92)	15(39.47)	76(45.24)	34.05-56.43
At meal time with meal	25(19.23)	8(21.05)	33(19.64)	6.09-33.19
Anytime	30(23.08)	5(13.16)	35(20.84)	7.38-34.30

Table 4. Patterns of alcohol consumption by gender and socio-demographic characteristics.

	Male			Female		
	Life-time	Former	Current	Life-time	Former	Current
Demographics	abstainer	drinker	drinker	Abstainer	drinker	Drinker
	(n=52)	(n=15)	(n=130)	(n=163)	(n=24)	(n=38)
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Age in years						
18-24 years	11(21.15)	3(20.00)	26(20.00)	40(24.54)	8(33.33)	7(18.42)
25-44 years	24(46.16)	9(60.00)	52(40.00)	72(44.17)	10(41.67)	13(34.21)
45-64 years	17(32.69)	3(20.00)	52(40.00)	51(31.29)	6(25.00)	18(47.37)
Ethnicity						
Dalit and	35(67.31)	12(80.00)	94(72.31)	129(79.14)	18(75.00)	30(78.95)
disadvantaged						
Janajati						
Upper caste	17(32.69)	3(20.00)	36(27.69)	34(20.86)	6(25.00)	8(21.05)
Religion						
Hindu	41(78.85)	13(86.67)	92(70.77)	102(62.58)	15(62.50)	23(60.53)
Non-Hindu	11(21.15)	2(13.33)	38(29.23)	61(37.42)	9(37.50)	15(39.47)
Highest education						
Up to secondary	45(86.54)	8(53.33)	109(83.85)	137(84.05)	22(91.67)	32(84.21)

Above secondary	7(13.46)	7(46.47)	21(16.15)	26(15.95)	2(8.33)	6(15.79)
Occupation						
Employed	21(40.38)	8(53.33)	24(18.46)	69(42.33)	12(50.00)	17(44.74)
Unemployed	31(59.62)	7(46.47)	106(81.52)	94(57.67)	12(50.00)	21(55.26)
Marital status						
Married	36(69.23)	9(60.00)	85(65.38)	99(60.74)	15(62.50)	22(57.89)
Unmarried and	16(30.77)	6(40.00)	45(34.62)	64(39.26)	9(37.50)	16(42.11)
Others						

Table 5. Predictors of alcohol consumption.		
Characteristics	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Sex		
Female		
Male	5.47(3.45-10.43)	5.86 (2.50-13.72)
Ethnicity		
Other ethnic groups		
Upper caste (Brahmin and Chhettri)	0.84(0.49-1.23)	0.82 (0.31-2.17)
Religion		
Hindu		
Non-Hindu	1.70(0.48-2.71)	1.45 (0.58-3.57)
Highest education		
Higher secondary and above		
Up to secondary	1.56(0.79-3.18)	1.58 (0.56-4.47)
Occupational status		
Employed		
Unemployed	3.26(0.65-3.90)	1.91 (0.83-4.39)
Marital status		
Married		
Unmarried and others	1.09(0.18-1.59)	1.19 (0.48-2.95)
Family history of alcohol		
No		
Yes	3.23(2.09-5.32)	3.16 (1.39-7.13)
Age in years		
18-24		
25-44	1.03(0.40-4.67)	2.63 (0.99-6.98)
45-64	2.35(1.89-6.99)	2.81 (0.88-9.02)

group. A number of drinkers rose with rise in age in female drinkers. Viewing from ethnic angle, numeral of female drinkers from dalit and disadvantaged janajati were four times ahead than the upper caste female drinkers. Figure suggests education has some role in alcohol consumption, showing more drinkers from lower education group and the condition was applied for both sexes. Statistics of drinkers dropped with an increase

in education in both the gender. Greater proportion of both, male (81.52%) and female (55.26%) drinkers were unemployed. Similarly, majority of both, male and female drinkers were married (Table 4).

On running multivariable logistic regression, gender and family history of alcohol were traced out as significant correlates of alcohol consumption. Male were 5.86 times (95% CI: 2.50-13.72) more likely to indulge in drinking habit, compared to female. Family history of alcohol raised odds of drinking by 3.16 times (95% CI: 1.39-7.13). Other correlates like ethnicity, religion, education, occupation, age, and marital status remained insignificant (Table 5).

DISCUSSION

The study came up with high prevalence of alcohol consumption, twice that of the national average.[10] This scenario warrants the attention of government, concerned stakeholders, and general public towards fostering an environment by taking measures that reduce the alcohol consumption among the urban poor. Our finding is consistent with a study conducted in a Sinamangal slum in Kathmandu, which reported 38.50% current drinkers.[11] Yet, our reported figure is higher than that of slums of Indian cities such as Mumbai (31.20%),[12] Faridabad (26.00%),[13] Kerala(23.10%),[14] and Patna(9.14%).[15] Nonetheless, picture of studies from slum of Chandigarh, India (93.08%)[16] and Kenya[17] are still higher. Variation in prevalence might be due to cultural differences, different level of accessibility and availability of alcohol products, methodological differences, difference in timing of studies, and nature of sample.

Moving forward, a higher proportion of male drinkers came from, dalit and disadvantaged Janajati, married, jobless, lower education group (up to secondary), and 25-44 and 45-64 years. Picture was similar among female drinkers except for age group, where greater number represented 45-64 years. Involvement of economically active population like 25-44 and 45-64 age groups in drinking pose a significant threat to socioeconomic development. Equally, dalit and disadvantaged janajati, due to low socioeconomic status and lack of resources, are often less able to avoid adverse health and social consequences of alcohol consumption.[18]. The highest figure of drinkers from unwaged is of serious concern. Unemployment together with alcohol consumption may fuel social problems like violence,[19] especially among male. Also, significant numbers of drinkers were married. Family drinking is considered as a precursor for alcohol use among young people. [9]Possibility of children from

family with current drinkers of initiating drinking habits, .and even problem drinking is also there.[20] A list of social problems like family violence,[21] child abuse[9] comes along with family environment of drinking.

Few females reported drinking. Female drinking not being culturally acceptable in Nepal, we cannot ignore possibility of underreporting by female. However, drinking by female exceeded than women from slums of Indian cities such as Patna (3.35%), [15]Kerala (1.00%),[14] and Faridabad (0%),[13] and lower than slum of Nairobi(56.80%).[17] Study in Nepal by Oli et al., showed higher prevalence of drinking among male (58.00%) and female (24.90%) than reported in our study.[11]

One-third drinkers (35.12%) admitted drinking once or twice a week. Oli et al., reported more daily drinkers in their study.[11] Likely reasons might be different sampling design, study site, and sample characteristics. Three out of ten (30.36%) reported drinking more than one type of alcohol. This can be explained in the light of the fact that several varieties of liquors are easily available and accessible in Kathmandu Valley. Home-made beverages like local raksi available at market (20.83%), home-made raksi (13.69%), and jaad/chyang (12.50%) were some of the liquors common among the respondents. Literature has suggested home-made beverages as potential causes of health problems.[22] Drinking in home, drinking with friends, and drinking during social gathering was frequent. Alcohol consumption is prevalent in Nepal and in many ethnic groups, a common social activity.

Being male and living in family with drinker's left significant impact on alcohol consumption (Table 5). Nepal, being predominantly a patriarchal nation favors male drinking. Also, a large-scale study from Nepal identified family drinking as a reason for alcohol initiation.[9]

This study falls among very few studies to report pattern, frequency, context, and type of alcohol consumption among the urban poor in Nepal. As the country is seeing the rise of NCDs, a study as such might be helpful for policy makers and program planners in the context of ongoing efforts to take legal measures for reducing alcohol consumption in Nepal. Harmful consumption of alcohol is a major hurdle to health and development, increasing chances of NCDs, [23, 24] infectious diseases[25] to injuries,[26] risk of unsafe sex,[27] and many negative social consequences.[28]

Urban poor who hardly manage hand to mouth, may face financial loss and poor health with alcohol consumption, thus making them even poorer.[29] Earlier studies reported alcohol use increased chance of

violence against women in family.[30, 31] For low earning groups like urban poor, heavy drinking may further impoverish the drinker, their family, or a whole community, increasing health or social harm.[32] Thus, it is the matter of high importance to address problem of alcohol consumption among these groups.

Our findings have come up with greater implications for NCDs prevention. The rising prevalence of alcohol indicates greater chances of future NCDs among this group. Development and implementation of culturally appropriate alcoholism prevention program is of need to reduce alcohol consumption and the negative consequences associated with it.

We used questionnaire developed by the WHO used in earlier studies, referred as GENACIS.[7] Representativeness of the study population was ensured by selecting representative number of squatter settlements in Kathmandu valley. Cluster random sampling could have been better design for the study. We however assured that the power of study is enough to make the samples representative, despite simple random sampling.

We admit a number of limitations in the study. Using a cross-sectional design and sampling household purposively might have biased the study results. There is a possibility of conscious under-reporting of alcohol use, especially by females. Further, assessing alcohol consumption in the last 12 months, chances of recall bias are still undeniable as respondents were asked to recall the age at initiation of drinking range from months to years. Taking this study as an example, future research can focus on socioeconomic differences in alcohol consumption in the urban poor.

CONCLUSIONS

We found a higher proportion of current drinkers among the urban poors in comparison to the national average. This markedly differed by gender. Future studies should explore the gender differences in pattern, frequency, type, and context of alcohol consumption among the urban poor. It is imperative to plan and develop gender sensitive and specific alcoholism prevention program among these at-risk population.

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