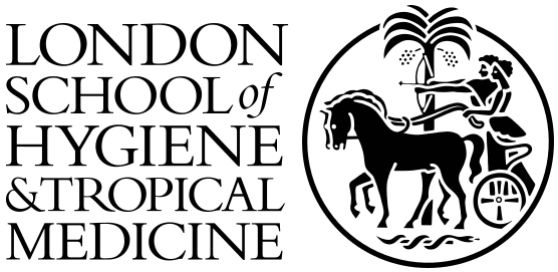

Alcohol use among conflict-affected persons in Ukraine: risk factors, coping, and access to mental health services

REVISION ONE

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ABSTRACT

BACKGROUND: There are approximately 1.5 million internally displaced persons (IDPs) in Ukraine as a result of the conflict in eastern Ukraine. Exposure to violence, forced displacement and increased mental disorders are potential risk-factors for alcohol use disorder (AUD). Our study aim was to estimate the prevalence of and risk factors for AUD among Ukrainian IDPs and investigate the relationship between AUD, mental health service utilisation, and coping behaviours.

METHODS: A nation-wide cross-sectional survey of 2203 IDPs was conducted. Data were collected on AUD (using AUDIT), mental health disorders, utilisation of health services and coping behaviours. Multivariable logistic regression was used to identify risk factors for AUD, and to estimate the odds ratios for the association between alcohol use and utilisation of health services and coping behaviours.

RESULTS: Of 2203 IDPs surveyed, 8.4% of men and 0.7% of women screened positive for AUD (AUDIT >7). Among current drinkers, AUD was present in 14.9% of men and 1.8% of women. Age, cumulative trauma exposure, and anxiety were significantly associated with AUD in multivariable analysis. Alcohol users were 43% less likely to access health services for mental health compared to non-users. AUD was associated with more negative coping behaviours.

CONCLUSIONS: AUD is present within the male Ukrainian IDP population. Alcohol use was significantly associated with lower utilisation of mental health services and more negative coping behaviours. AUD screening and low-intensity treatment services should be expanded for IDPs in Ukraine, particularly if integrated into mental health and psychosocial support programmes.

KEY WORDS: Alcohol, Ukraine, conflict, forced displacement

INTRODUCTION

There are approximately 1.5 million Internally Displaced Persons (IDPs) in Ukraine as a result of the armed conflict there since 2014 between the government and separatist pro-Russian forces focused in the Donetsk and Luhansk regions.(1) These IDPs have endured high levels of trauma, including bombardment, assault, and forced displacement; and they are experiencing high unemployment and limited access to social services.(1) As a result, high-levels of mental disorders have been recorded among IDPs in Ukraine. (2) Trauma exposure, mental disorders, unemployment and social isolation have been associated with alcohol use disorder (AUD) among conflict-affected populations.(3-5) Alcohol use can also affect the likelihood of accessing and adhering to care, with subsequently worse outcomes and higher costs.(4) However, there remains an extremely limited evidence base on AUD among forcibly displaced persons in low- and middle-income countries (where the vast majority reside), particularly on how AUD may influence use of health care services.(3, 5) To the best of our knowledge, no epidemiological studies have examined AUD prevalence and use of services issues among IDPs in Ukraine. The aim of this study was to estimate the prevalence of and risk factors for AUD among Ukrainian IDPs, and investigate the relationship between AUD, mental health service utilisation, and coping behaviours.

METHODS

Study Design

The study population was Ukrainian IDPs, defined as men and women aged 18 years or older forced to flee their homes because of the conflict and currently living away from home. The survey took place in 25 oblasts (regions) across Ukraine between March and May of 2016. Time-location sampling was utilised as a probabilistic method to identify and recruit

participants. Time-location sampling uses a sampling frame of time-location units representing the potential universe of places, days and times in which the target group can be accessed.(6) Locations include IDP hostels, NGOs, government service sites, and locations of humanitarian aid distribution. This involved mapping potential locations in each oblast using sources including local authorities, NGOs, experts, internet, and the regional research teams' previous experience of IDP recruiting. This was continued until new sources gave no new information. The respondent recruitment took place at different times of day and locations to support likelihood of being present during data collection. The number of interviews conducted in each region was proportional to the estimated number of IDPs residing there, with a goal of 2475 completed surveys nationwide. Exclusion criteria included those under the age of 18 years, those with severe mental impairment such that they were unable to answer questions, and those unable to provide informed consent and those deemed to be under the influence of drugs or alcohol at the time of interview.

The survey questionnaire was developed in English with translation into Ukrainian and Russian through best practice procedures to retain validity, reliability, and appropriateness for the study population.(7, 8) Questionnaires were administered by trained enumerators through face-to-face interviews with respondents. Prior to participation, study aims were explained and an information sheet provided and participants provided written or verbal consent (depending on their preference). This project was granted ethical approval by the London School of Hygiene and Tropical Medicine Ethics Committee and the Kiev International Institute for Sociology.

Survey Instrument

Alcohol use was assessed using questions about frequency, type, and volume of alcohol consumed. One drink was defined as 10g ethanol – equivalent to 25ml of a strong spirit, 100ml of wine, or 330 ml of beer. AUD was assessed using the alcohol use disorder

identification test (AUDIT) which is a well validated ten-item screening questionnaire which has been used in a wide-range of settings, including with conflict-affected populations.(3, 7, 9)

Exposure to traumatic events was assessed using the Life Events Checklist (LEC-5).(10) The main mental health outcomes measured were PTSD, depression, and anxiety. PTSD was evaluated with the Posttraumatic Stress Disorder Checklist (PCL-5), depression with the Patient Health Questionnaire (PHQ-9), and anxiety with the Generalized Anxiety Disorder scale (GAD-7).(11-13) Details on the questions on access and use of health care are provided elsewhere.(2)

Coping behaviours were assessed using an adapted version of the Brief COPE Instrument which includes two questions each across seven coping dimensions.(14) Each response was recorded on a four-point scale from “I haven’t been doing this at all” to “I’ve been doing this a lot”. We use the Brief COPE rather than the original longer-version as we felt it to be more feasible in terms of respondent fatigue than the longer-version. As a result, we report on individual coping types shown by the individual items, rather than the coping sub-scales used in the original longer-version of COPE. Questions were adapted to better suit the study population and setting per consultation with Ukrainian collaborators and piloted prior to use.

Data Analysis

The main outcome variable for this analysis was AUD as defined by AUDIT score. Cumulative scores were categorised into four severity levels.(7) Those scoring 0-7 were rated “low risk, no alcohol disorder”; 8-15 was “hazardous use, advice on alcohol suggested”; 16-19 was “harmful use, counselling for alcohol suggested”; and 20 and above was “dependent use, treatment for alcohol suggested”. A binary variable was also created for AUD using the recommended cutoff score of ≥8 for subsequent use in regression

analyses. For individuals missing a single item on the scale, AUDIT scores were calculated with the missing question counted as zero. Those missing two or more items on the scale were excluded from the analysis. Prevalence of AUD was calculated for the entire study population and also for current drinkers. We hypothesized large gender differences in prevalence, and so results were reported for males, females, and total. Other descriptive features of alcohol use were calculated, including type of alcohol consumed, frequency of alcohol use, and prevalence of AUD among those with PTSD, anxiety, and depression. The AUDIT scale demonstrated good reliability with the study population. The Cronbach's alpha was 0.87, while the test-retest using a separate mini-survey (N=110) was an intraclass correlation coefficient of 0.86.

Typologies of alcohol use were also calculated: infrequent light (less than weekly and <5 drinks per session), infrequent heavy (less than weekly, 5 or more drinks per session), frequent light (more than weekly, <5 drinks per session), and frequent heavy (more than weekly, 5 or more drinks per session).(15)

Cumulative number of traumatic events was calculated for each respondent and categorized as 0-4 events, 5-9 events, or 10+ events. Mental health disorders were categorized following instrument recommendations for PTSD (PCL-5 cutoff >32), depression (PHQ-9 cutoff >9), and GAD-7 for anxiety (>9).(11-13) Data on their psychometric properties with the study populations are provided elsewhere.(2)

For the regression analysis on factors associated with AUD, ten variables were selected as potential factors associated with AUD, based upon the existing literature.(3) These included demographic factors (age, education, marital status), trauma exposure (LEC-5 scores), and mental health disorders. Given the small number of women with AUD in our study population (N=10), regression analysis was conducted only among men. Association between each risk factor and AUD was assessed through chi-squared tests and logistic regression. Exposures

with Wald test p-values that were significant at the 95% level were chosen to carry forward in the multivariable analysis. Among variables carried forward, a multivariable logistic regression model was built using a manual backwards stepwise approach with variables not meeting the significance threshold ($P<0.05$) eliminated.

Among those with AUD, patterns of seeking support and accessing treatment for AUD were explored. Among those meeting criteria for AUD, those answering “yes” to having received services for their alcohol use in the past year were considered to have accessed treatment.

We also examined the association between alcohol use and utilization of mental health services. The primary outcome variable in this analysis was likelihood of accessing mental health services among those who needed them. The primary exposure of interest was current alcohol use. Logistic regression was conducted to assess the relationship between alcohol use and appropriately accessing care, with adjustment for age, sex, level of education, household economic situation, and degree of severity of mental illness.

We also hypothesized differences in individual coping typologies between those without and without AUD and examined this using chi-squared testing.(14).. All data were analysed using Stata 14.

RESULTS

The response rate for the survey was 89%, with 2,203 questionnaires completed. The majority of respondents were female (67%), conforming to broader demographics of IDPs in Ukraine.(1) The mean time period of displacement was 18 months, with 85.7% of respondents displaced for over one year. Further respondent characteristics can be found in the Online Supplementary Material Table A.

Alcohol Use Patterns

The patterns of alcohol use are described in Table 1, disaggregated by gender. AUD prevalence was 3.2% overall, and 8.4% for men and 0.7% for women. When restricted to current drinkers (those who reported consuming alcohol in the past 12 months), AUD was present in 14.3% of men and 1.7% of women. The majority of drinkers were categorized as infrequent light (less than weekly, <5 drinks per session, 82.1%), followed by frequent light (more than weekly, <5 drinks/session, 8.5%).

Factors associated with AUD

The findings from the multivariable regression analysis on factors associated with AUD among men are given in Table 2 (unadjusted results are provided in the Online Supplementary Material Table B). They indicate a significant association between younger age and AUD. Cumulative trauma exposure was also significantly associated with AUD. There is also a significant association between anxiety and AUD, with those testing positive for anxiety having over twice the probability of AUD compared to those without anxiety (OR 2.35 [95% CI 1.33-4.16]).

AUD and Treatment

Among the 71 men and women screened at risk of AUD (AUDIT>7), only 14 (19.7%) reported having spoken to someone about their concerns regarding drinking. Even fewer (N=5, 7.0%) reported seeking treatment for their alcohol use. For those who did not speak to someone or access support (N=57), the most common reason expressed was thinking they could improve on their own (20.73%), followed by not being able to afford services (12.22%), not knowing where to get help (7.32%), and feeling embarrassed about seeking help (7.32%).

The treatment gap for mental disorders (defined as the proportion of respondents screened with PTSD, depression, or anxiety but who did not access care in the past year) was higher for respondents who were currently using alcohol (85.6% [95% CI 81.0-87.6]) compared to those for those not currently using alcohol (72.8% [95% CI 70.1-78.6]).

Table 3 presents the associations between alcohol use and accessing mental health care. After adjusting for other potentially influencing factors, there remained a significant association between alcohol use and not accessing treatment for mental health. Current alcohol users with symptoms of PTSD, depression or anxiety were 43% less likely than non-alcohol users to have sought mental health care in the past year (OR 0.57; 95% CI 0.37-0.87).

AUD and Coping Behaviours

The findings on coping behaviours are summarized in Table 4. Among those screened with AUD, 27.1% reported “using alcohol or drugs to cope” either “moderately” or “a lot”. This compares to 4.0% among those not screened with AUD. Other findings on coping variance between those screened with and without AUD include that people screened with AUD were significantly less likely to: do something to think about bad experiences in the past; take action to make the situation better; get emotional support from others; seek help or advice from others; find something good in what is happening; think hard about what steps to take; or learning to live with their situation. People screened with AUD were significantly more likely to express negative feelings, and blame themselves for things that had happened.

DISCUSSION

This study presents the first nationally representative data on alcohol use among IDPs in Ukraine, thereby contributing to the scarce evidence globally on alcohol use among conflict-affected populations.(3) The prevalence of AUD among the study population does not differ

significantly from estimates of the Ukrainian population at large (8.4% vs 9.3% in men, 0.7% vs. 1.1% in women).(16) The strong influence of gender on frequency, quantity, and type of alcohol consumed is also in keeping with studies in Ukraine and elsewhere.(3, 17, 18) Explanations for the gender variance include cultural norms around alcohol use (and reporting of alcohol use), gender bias with regard to reporting drinking behaviours, and differing availability of alcohol between men and women.(19)

AUD prevalence among the study population falls within the range reported in previous studies on alcohol use among IDPs from other countries, although the wide range of definitions for alcohol use employed in studies is important to note.(3) Two prior studies exist of IDPs in Eastern Europe with similar prevalence of AUD. One study included adults from Bosnia-Herzegovina, Croatia, Kosovo, Macedonia and Serbia and found low rates of alcohol misuse (measured using the MINI alcohol dependence tool) between 0.3% and 3%.(20) Another study from Georgia recorded AUD prevalence among current drinkers (defined as AUDIT score of >7) of 28% for men and 1% for women respectively.(17)

While AUD prevalence was moderate overall, among current drinkers it was high for men – with one in six men who use alcohol may be in need of brief advice, counselling, or dependence treatment. The majority of those with AUD fell into the lower risk (hazardous use) category with AUDIT scores between 8 and 15 (87% of men, 89% of women) for whom brief advice on reducing alcohol use is recommended.

The findings showed significant associations between AUD and younger age, cumulative trauma exposure, and anxiety among male IDPs in Ukraine. A number of prior studies demonstrated a relationship between younger age and prevalence of AUD.(3, 5) Data from the Ukraine World Mental Health survey showed a rapid rise in the use of alcohol and prevalence of AUD between the ages of 15 and 25.(18) These results suggest that

screening for AUD in the Ukrainian IDP population may benefit from expansion and focus on younger people.

Cumulative trauma exposure demonstrated a dose-response relationship with AUD which is also reported from other conflict-affected populations.(3, 21) Those who have undergone significant trauma may have fewer economic opportunities, unstable living conditions, experience more social isolation, or suffer from mental illness at higher rates, all of which have been linked to harmful alcohol use.(22-24).

The only mental health disorder that exhibited strong association with AUD after adjustment was anxiety. While anxiety is known to be associated with AUD in non-conflict-affected populations, this has not been demonstrated previously in studies of AUD among IDPs.(3) The mechanisms by which alcohol use and anxiety may be associated are diverse and include worse socioeconomic status, genetic predisposition, and behavioural changes including alcohol as a coping tool.(25-27). Anxiety is strongly linked to relapse into AUD, as alcohol use can reduce anxiety in the immediate term, thereby propagating repeated use and resulting in worsening co-morbidity for both conditions over the longer-term.(27) Of note, PTSD was not found to have an association with AUD in this population. Future studies involving alcohol use in conflict-affected civilian populations may benefit from expanding their explorations of anxiety rather than focusing mainly on PTSD.

The number of individuals with AUD who reported seeking treatment for their alcohol use was extremely low. A common reason for not seeking care was they felt they could treat themselves and studies from non-displaced populations in Ukraine suggest that perceptions of heavy alcohol use as a social norm present a significant challenge to accessing care.(18, 25) Access to treatment may also play a role, as cost, stigma, and lack of awareness were among reasons cited for not seeking care. There are also extremely limited alcohol services available in Ukraine.(28)

The strong effect of alcohol use on the mental health treatment gap for people screened with mental disorders is a concern. Current alcohol users with PTSD, depression or anxiety were 43% less likely to be accessing mental health care than non-alcohol users. While the relationship between alcohol use and treatment for mental illness does not appear to have been researched with forcibly displaced and other conflict-affected civilian populations in low- and middle-income countries), results from stable, high-income settings have demonstrated similar results.(29) Our findings indicate that mental health and psychosocial support services for IDPs should incorporate screening and treatment for alcohol use.

AUD was associated with potentially more negative types of coping behaviour. These differences were particularly evident among dimensions involving relationships or supportive social structures, such as receiving emotional support from others, suggesting a possible relationship between social isolation and AUD among IDPs. This association has been previously demonstrated in a stable high-income setting.(30) Some have suggested that coping mechanisms moderate the effect of traumatic exposure on likelihood of developing AUD.(31) Others suggest an association between AUD and avoidance-related coping mechanisms, a feature also seen in these results.(32) Of note, only 28% of those with AUD endorsed using alcohol as a coping mechanism, suggesting lack of awareness of AUD which has been identified as a barrier to treatment-seeking in non-conflict settings.(4)

Limitations

Giving the cross-sectional design, our results cannot prove causation or determine the causal direction between alcohol, trauma, mental illness, and coping. Variable selection method can also cause biased results, but manual stepwise methods are widely used when carefully selected based on prior knowledge and clear elimination criterion. An inherent limitation of the Time Location Sampling method is that it may omit those not in identified

locations (for example, in the case of our study, those locations providing support to IDPs or known residential and social locations of IDPs). This may potentially exclude those that are less vulnerable (as they are not seeking support) or those that are most vulnerable and not able to access support. However, we tried to mitigate this bias by including a wide range of potential locations. The very small number of women reporting AUD (N=10) precluded meaningful analysis of risk factors or inclusion in the primary regression analysis. The number of individuals seeking treatment for AUD was also very small (N=7) and so limits any meaningful interpretation. Other limitations include the stigma surrounding mental illness and alcohol use, which may limit responses and result in underestimations of prevalence. While the COPE assessment has been used previously in conflict-affected populations, limitations of its use include relatively value-laden assumptions regarding coping behaviours. Those under the influence of alcohol at the time of the interview were excluded (after attempts to re-visit), and those with severe AUD may be less likely to frequent locations from which participants were recruited. Both could result in fewer people with AUD participating in the study, with a subsequent underestimation of AUD prevalence. Another potential source of bias may be the age cut-off of 18 years. Prior studies of AUD in Ukraine used a younger age cut-off of 15 whereas our study only captured for those aged over 17 years and alcohol use ay have been higher among those aged 15-17.(18)

CONCLUSIONS

The study findings demonstrate that AUD is present among male IDPs in Ukraine and is significantly associated with anxiety and cumulative trauma exposure. Use of care for those with AUD appears extremely low, and alcohol use has a negative association with accessing care for people with mental disorders and the types of coping behaviours used. The majority of those with AUD were in lower-risk categories which may benefit from lower intensity and lower resource interventions which may be feasible to implement in conflict-affected settings.

KEY POINTS:

- AUD is present among male IDPs in Ukraine and is associated with trauma exposure, anxiety and younger age.
- AUD associated with reduced care seeking for mental disorders.
- AUD is associated with more coping behaviours.

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Table 1: Frequency, Typology, and Severity of Alcohol Use Disorder (N=2203)

	Male		Female		Total		p-value*
	N	**%**	**N**	**%**	**N**	**%**	
Frequency of Alcohol use (in past year)							
Never	294	40.78	858	58.89	1,152	52.89	<0.001
Monthly or less	219	30.37	465	31.91	684	31.4	
2-4 times per month	133	18.45	106	7.28	239	10.97	
2-3 times per week	57	7.91	15	1.03	72	3.31	
4+ times per week	18	2.50	13	0.89	31	1.42	
missing	9	1.23	16	1.09	25	1.13	
Type of alcohol use (among current drinkers)							
Wine	89	41.00	363	78.06	452	66.08	<0.001
Beer	134	61.19	180	38.71	314	45.91	
Spirits	137	62.56	116	24.95	253	36.99	
Typology of alcohol use (among current drinkers)**							
Infrequent light	298	68.35	544	90.82	842	82.07	<0.001
Infrequent heavy	45	10.32	17	2.84	62	6.04	
Frequent light	59	13.53	28	4.67	87	8.48	
Frequent heavy	25	5.73	0	0.00	25	2.44	
Alcohol Use Disorder (AUDIT score)							
0 to 7 (low risk)	669	91.64	1,463	99.30	2,132	96.78	<0.001
8 to 15 (hazardous use)	53	7.26	9	0.61	62	2.81	
16 to 19 (harmful use)	3	0.41	0	0.00	3	0.14	
>20 (dependence)	5	0.68	1	0.07	6	0.27	
Alcohol Use Disorder among current drinkers (AUDIT score)							
0 to 7 (no alcohol disorder)	366	85.71	589	98.33	955	93.08	<0.001
8 to 15 (advice suggested)	53	12.41	9	1.50	62	6.04	
16 to 19 (counselling suggested)	3	0.70	0	0.00	3	0.29	
>20 (treatment suggested)	5	1.17	1	0.17	6	0.58	

*Difference between men and women, calculated from chi-squared testing

** infrequent light: less than weekly and <5 drinks per session
infrequent heavy: less than weekly, 5+ drinks per session
frequent light: more than weekly, <5 drinks per session
frequent heavy: more than weekly, 5+ drinks per session

***Columns adding to less than 100% reflect small amounts of missing data

Table 2: Adjusted odds ratios for association with AUD from a multivariable logistic regression model, among men (N=730)

Variable	Number with AUD* (%)	Adjusted OR for AUD	[95% CI]
Age group			
18 to 30	25 (13.09)	Ref	
31 to 45	21 (8.20)	0.50	[0.26; 0.97]
46 to 59	8 (4.85)	0.20	[0.07; 0.50]
60+	7 (5.93)	0.32	[0.13; 0.80]
Cumulative trauma exposure**			
0-4 events	24 (5.38)	Ref	
5-9 events	31(12.35)	2.68	[1.47; 4.92]
10+ events	6 (18.18)	5.24	[1.81; 11.13]
Anxiety***			
No	27 (6.24)	Ref	
Yes	30 (13.70)	2.35	[1.33; 4.16]

Table 3: Association between current alcohol use and utilization of mental health services among IDPs with anxiety, PTSD or depression, from a multivariate regression model (N=634)

	Adjusted OR	[95% CI]	
Anxiety, PTSD, or depression symptoms**			
Non-user	Ref		
Current alcohol user	0.57	[0.37;	0.88]
Anxiety only symptoms**			
Non-user	Ref		
Current alcohol user	0.52	[0.32;	0.85]
PTSD only symptoms**			
Non-user	Ref		
Current alcohol user	0.62	[0.40;	0.98]
Depression only symptoms**			
Non-user	Ref		
Current alcohol user	0.85	[0.52;	1.37]

Ref = reference group
Adjusted for: age, sex, education, household economic situation, severity of PTSD, depression and anxiety
PTSD=Post-traumatic stress disorder
*calculated from the Wald test
** Anxiety screened as GAD7 score ≥10; PTSD screened as PCL-5 score ≥33; depression screened as PHQ-9 score ≥10.

Table 4: Coping behaviours among those with and without AUD (N=2203)

Coping Behaviour *	Non-AUD **		AUD **		p-value (chi-squared)
	N	%	N	%	
Doing something to think about it less					
a little/not at all	432	21.85	23	32.86	0.03
Moderately/a lot	1545	78.15	47	67.14	
Taking action to make situation better					
a little/not at all	437	22.71	24	34.78	0.019
Moderately/a lot	1487	77.29	45	65.22	
Refusing to believe that it has happened					
Little/not at all	1015	58.37	52	78.79	0.001
Moderately/a lot	724	41.63	14	21.21	
Use of alcohol or drugs to cope					
Little/not at all	1980	96.02	51	72.86	<0.001
Moderately/a lot	82	3.98	19	27.14	
Getting emotional support from others					
Little/not at all	706	35.07	43	61.43	<0.001
Moderately/a lot	1307	64.93	27	38.57	
Giving up trying to cope and deal with it					
Little/not at all	1427	77.85	50	79.37	0.77
Moderately/a lot	406	22.15	13	20.63	
Expressing negative feelings					
Little/not at all	1600	81.97	48	67.61	0.024
Moderately/a lot	352	18.03	23	32.29	
Getting help and advice from other people					
Little/not at all	749	36.97	37	52.11	0.002
Moderately/a lot	1277	63.03	34	47.89	
Looking for something good in what is happening					
Little/not at all	933	47.55	42	60.00	0.011
Moderately/a lot	1029	52.45	28	38.00	
Thinking hard about what steps to take					
Little/not at all	462	23.85	24	34.29	0.04
Moderately/a lot	1475	76.15	46	65.71	
Using humor					
Little/not at all	1152	59.26	37	53.62	0.35
Moderately/a lot	792	40.74	32	46.38	
Learning to live with it/getting used to it					
Little/not at all	842	44.81	42	61.76	0.006
Moderately/a lot	1037	55.19	26	38.24	
Comfort in religion or spiritual beliefs					
Little/not at all	1326	67.07	59	84.29	0.001
Moderately/a lot	651	32.92	11	15.71	
Blaming myself for things that happened					
Little/not at all	1820	90.41	55	79.71	0.003
Moderately/a lot	193	9.59	14	20.29	

* Coping based on adapted version of the Brief COPE Instrument
** AUD screened as AUDIT score ≥8