

Hazardous Substance use among People with Psychiatric Disabilities Visiting Day Centers

Mona Eklund^{1*} and Agneta Öjehagen²

¹Department of Health Sciences, Lund University, Lund, Sweden

²Department of Clinical Sciences, Lund University, Lund, Sweden

*Corresponding author: Mona Eklund, Department of Health Sciences, Occupational Therapy and Occupational Science, Lund University, Box 157, SE 221 00 Lund, Sweden, Tel: +46462221957; Fax: +46462221959; E-mail: mona eklund@med.lu.se

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Abstract

Objective: People who suffer from psychiatric illness have a more than doubled lifetime risk of acquiring an alcohol or drug use disorder. Furthermore, hazardous substance use impairs treatment outcomes and protracts the duration of illness among people with mental disorders. The aim of this study was to investigate substance use among people with psychiatric disabilities receiving municipality-based mental health services, any associations to socio-demographic and well-being variables, to diagnosis or to level of functioning, and any changes at a 15-month follow-up.

Methods: One-hundred-and-twenty-three persons with psychiatric disabilities but no diagnosed substance use disorder participated and completed the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Use Disorders Identification Test (DUDIT) at baseline and the follow-up. Self-report questionnaires were employed to estimate different aspects of well-being in terms of quality of life and self-rated health. Level of functioning and severity of psychiatric symptoms were assessed by the Global Assessment of Functioning (GAF) scale.

Results: Nineteen percent of participants had hazardous use of alcohol (14%) or drugs (5%) at baseline, while 23% did not use alcohol and 89% did not use drugs. Since only few participants reported drug use, inferential analyses concentrated on alcohol use. Participants with a foreign origin and lower education were less likely to exhibit alcohol use, including hazardous alcohol use. Sex and age were unrelated to alcohol use, as were the well-being variables, level of functioning, symptom severity and self-reported diagnosis. Alcohol and drug use patterns were stable at the follow-up.

Conclusion: The findings contribute with knowledge about hazardous substance use among people with psychiatric disabilities and indicate that preventive measures are warranted within the municipality-based mental health services. Staff in the municipality-based mental health services must stay alert on this issue and screening for hazardous use of alcohol and drugs should be considered.

Keywords: Alcohol use; Drug use; Substance use; Mental health; Well-being; Immigrants; Follow-up

Introduction

People with mental illnesses are a vulnerable group in several respects. They are at risk of social exclusion [1,2] and of perceiving their everyday life as being stagnant and non-satisfactory [3]. Many of their needs for support are not met [4]. It is also well-known that people who suffer from psychiatric illness have a more than doubled lifetime risk of acquiring an alcohol or drug use disorder [5-7]. A concomitant alcohol use disorder in this group impairs treatment outcomes and protracts the duration of the psychiatric illness [8]. In line with that, previous research has shown that identifying mental health patients' hazardous alcohol habits and intervening to reduce the alcohol consumption could reduce a negative influence on the psychiatric disorder and the development of alcohol and drug use disorders in this group [9,10]. Thus, it is important to address alcohol and drug use patterns, particularly hazardous use, among people with mental illness.

A psychiatric disorder may lead to a psychiatric disability, defined as having a mental illness that prevents the person from participating in society and leading a satisfactory and independent everyday life and that the condition has lasted for a considerable time (>2 years) [11]. Open-market employment is very rare in this group [12] and it is a responsibility of the municipalities in Sweden to organize community-based psychiatric services so that people with psychiatric disabilities can receive the support they need in terms of meaningful daily activities. Day centres that provide such services are not only found in Sweden [13], but also in other parts of Europe [14,15], in the United States [16], in Canada [17] and in Australia [18]. So far studies looking at the influence of hazardous use on treatment effects on psychiatric disorders concern depression and anxiety, and the results are inconsistent [9,19,20]. Research addressing hazardous use among people with psychiatric disabilities receiving municipality-based mental health services seems absent. Such knowledge would be important for optimizing support and services to that group [21], however, which was the rationale for the current study.

Overall, there is a lack of knowledge about which factors are associated with alcohol and drug use patterns among people with

psychiatric disabilities. Studies on the background population are also scarce, but one project addressing women's health suggest alcohol usage could be related to country of birth, as women with East European and non-European origins have been shown to consume less alcohol than those with a Swedish origin [22]. Lower educational level [23] and higher age [24,25] have also been associated with less consumption. Knowing about how socio-demographic characteristics are related with hazardous substance use among people with psychiatric disabilities might help identify persons that are particularly vulnerable in this respect.

Hazardous alcohol and/or drug use may also be related to well-being, but research is scarce in this area as well. A relationship between a high level of substance use and low well-being has been shown among adults who are HIV positive [26], but no such associations were found in studies addressing healthy populations [27,28]. This relationship does not appear to have been investigated among people with mental disorders, which warrants further exploration in that group.

The first aim of this study was to describe alcohol and drug use, with a specific focus on the occurrence of hazardous use, among people with psychiatric disabilities receiving municipality-based mental health services and who do not have a substance use disorder. A second aim was to investigate how substance use was associated with certain socio-demographic variables and different aspects of well-being and functioning. Finally, with the intention to detect any changes during a period of support from municipality-based mental health services, the study aimed to explore any alterations in substance use between a baseline measurement and a 15-month follow-up.

Methods

This study was part of a combined cross-sectional and longitudinal project investigating day centers providing daily activities for people with psychiatric disabilities during the course of a local mental health free-choice reform within municipality-based mental health services [29,30]. It included a baseline measurement and a follow-up after 15 months. The occurrence of hazardous alcohol and drug use among the day center attendees was analyzed in the present study, which was based on voluntariness, informed consent and confidential treatment of data. The regional ethical review board at Lund University approved the study, Reg. No. 2009/625.

Study context

The study took place in community-based day centers for people with psychiatric disabilities in a larger city in Sweden with great variation between different city districts regarding socio-economic conditions among inhabitants and built environments. A thorough description of the study context can be found in related studies [29,31]. Four geographical areas were selected to represent different socio-economic conditions regarding incomes, education and proportion of immigrants. These areas also represented both inner-city districts and sub-urban areas and included six day centers, which all agreed to participate. The day center attendees could either follow a schedule and participate in productive activities, such as catering, carpentry or assembly work, or visit the center on a drop-in basis and have coffee, play games or instruments, or engage in handicrafts for enjoyment and leisure. Persons with a diagnosis of a substance use disorder only, or concomitant with another psychiatric disorder, were not included in the study.

Selection of participants

The prospective participants were informed orally and in writing about the project at information meetings at each day center. Those who agreed to take part in the study gave their written informed consent. A staff member at each day center served as a link between the day center attendees and the research team, and this person made a list of those who agreed to participate.

By this procedure, 98 participants were included, and also invited to a follow-up approximately 15 months after the baseline measurement. Fifty-nine of these (60%) took part in the follow-up. The 39 persons who did not participate could not be reached, declined to take part, or did not turn up for an interview despite three scheduled meetings. The non-participants did not differ from follow-up participants regarding their use of alcohol ($p=0.391$) or drugs ($p=0.521$) at the baseline measurement. At the follow-up, another 25 participants were invited to increase the baseline sample. After that data collection was closed. A total of 123 attendees thus agreed to participate in the baseline measurement. It was not possible to know exactly how many that had been invited due to the drop-in character of some of the day centers and the general principle of voluntary attendance. The precise participation rate is therefore not known, but it was estimated that 50-60% of those who had been informed and invited chose to participate, which is similar to previous studies of people with psychiatric disabilities [13,32].

The participants' characteristics are shown in Table 1.

Characteristics	Number (valid %)
Sex; number of men ¹⁾	56 (46%)
Married/cohabiting	14 (12%)
Foreign origin	30 (24%)
Education ²⁾	
Incomplete compulsory education	8 (7%)
Completed compulsory education	28 (25%)
Completed high school	52 (46%)
Completed college/ university degree	24 (21%)
Self-reported diagnosis ³⁾	
Schizophrenia or other psychosis	29 (28%)
Depression/anxiety	53 (52%)
Other (personality disorder, Asperger etc)	21 (20%)
	Mean (SD)
Age	51.4 (10.3)
Quality of life	47.8 (1.4)
Self-rated health	3.3 (1)
GAF	51.6 (13.6)

Table 1: Characteristics of the participants (N=123). ¹⁾Missing data for 1 participant; ²⁾Missing data for 11 participants; ³⁾Missing data for 20 participants.

Among the 30 participants who had a foreign origin, 8 were born in Finland, 10 in a Middle-eastern country, while the others originated from other European countries, South America or Africa.

Data collection

A background questionnaire was devised to gather socio-demographic data and self-reported diagnoses. The diagnoses were later classified by a specialized psychiatrist using the ICD-10 classification [33]. The ICD-10 diagnoses were subsequently grouped into three sets, which were used for the analyses of this study: Schizophrenia or other psychosis, Depression/anxiety and Other diagnoses (mainly personality disorder and Asperger's syndrome). Reliability of self-reported diagnoses among people with psychiatric disabilities was indicated in a previous study by comparing diagnostic groups according to psychiatric symptoms rated by a professional and obtaining a logical pattern of associations [34]. In addition to the questionnaire, the following instruments were used.

Use of alcohol and drugs

Saunders and colleagues developed the Alcohol Use Disorders Identification Test (AUDIT) in cooperation with the World Health Organization [35]. It is a screening instrument for hazardous and harmful use of alcohol and possible dependence [36]. The AUDIT, which has 10 items, uses a scoring system with 0-4 points, thus rendering a maximum score of 40. The recommended cut-off scores for hazardous or harmful alcohol use, and probable dependency, are 6 for women and 8 for men [37,38]. These cut-offs were used in this study. The AUDIT addresses both experiences of alcohol use in the past year (questions 1-8) and lifetime experiences (questions 9-10). It has shown good sensitivity (0.76) and specificity (0.79) [39]. It has been translated into Swedish and its psychometric properties have been verified by Bergman and Källmén [37].

Building on a similar format, Berman, Bergman, Palmstierna and Schlyter [40] constructed the Drug Use Disorder Identification Test (DUDIT), which has 11 questions that correspond to the AUDIT items and use a similar 4-point response scale. To clarify what is included in the term 'drugs' there is a list on the back page of the DUDIT form, specifying frequently used illicit drugs and commonly abused psychotropic drugs and analgesics. These may be found at http://www.emcdda.europa.eu/attachements.cfm?att_10455_EN_DUDIT.pdf. A study based on the Swedish background population preliminarily recommended a cut-off score of >2 for women as an indicator of hazardous drug use and >6 for men [40].

Well-being

Three aspects of well-being were addressed: quality of life, self-rated health and psychosocial functioning.

Quality of life was addressed by using the Manchester Short Assessment of Quality of Life (MANSA), where the respondent is asked to rate his or her satisfaction with 11 life domains [41]. Some examples of these domains, which together form a composite estimate of quality of life, are finances, work, living situation, social relations, and both physical and psychological health. Each of these domains is assessed by one item. The MANSA also includes one item targeting general quality of life. All items are rated according to a scale that may range from 1 (=worst possible situation) to 7 (best possible situation). Good construct validity and internal consistency have been shown for the Swedish version [42]. For the present study, both the composite

score and the one-item estimate reflecting general quality of life were used.

Self-rated health was assessed by a single item, namely item number one in the SF-36 [43]. The item wording is: "In general, would you say your health is:" followed by five alternatives from excellent (=1) to poor (=5). It is recognized as a trustworthy alternative when appreciating self-rated health by only one item [44,45].

Psychosocial functioning was focused by using the Global Assessment of Functioning (GAF) scale [46]. A researcher or a staff member working in mental health services rates an individual according to psychosocial functioning and uses a scale that ranges from 0-100, while considering both symptom severity/psychological functioning and social/occupational functioning. Separate ratings or a composite rating may be made, and separate scores were used in the current study. GAF has repeatedly shown good between-rater agreement after only brief rater training [47].

Data analyses

The proposed cut-offs for alcohol and drug use were used to create three groups – hazardous use, non-hazardous use and no use. The chi² test was used to assess how these groups differed on categorical variables such as sex, marital status, and education level, whereas Fisher's exact test was used when less than five observations in each cell were expected. When aiming at discerning which indicator variable was most strongly associated with a criterion variable we used logistic regression analysis, forward conditional model. One-way ANOVA was employed to analyze whether the groups based on substance use differed with respect to age. Differences in well-being between the three groups based on alcohol and drug use, respectively, were analyzed by the Wilcoxon test and subsequent Mann-Whitney analyses with Bonferroni corrections. The Mann-Whitney test was also used for analyzing differences between the participants and non-participants at follow-up regarding use of alcohol and drugs. Stability in alcohol and drug use from baseline to follow-up was assessed by the McNemar test. Means and standard deviations were used for descriptive statistics. A p-value <0.05 was considered statistically significant, but all p-values <0.10 were reported. The software used was IBM SPSS, version 23.0.

Results

Baseline alcohol and drug use

The mean value (SD) at baseline was 3.3 (4.4) on AUDIT and 0.5 (1.8) on DUDIT. Table 2 presents baseline hazardous use, consumption below hazardous use, and no use of alcohol and drugs, respectively.

	Hazardous use	Non-hazardous use	No use
Alcohol use 1)	17 (14%)	76 (63%)	27 (23%)
Drug use 2)	6 (5%)	7 (6%)	108 (89%)

Table 2: The participants' use of alcohol and drugs at baseline. ¹⁾Three missing responses; ²⁾Two missing responses.

A total of 22 persons (19%) reported hazardous use of alcohol, drugs, or both (16 of alcohol only; 5 of drugs only; 1 of both). The variable concerning hazardous use of drugs was not analyzed further

in relation to socio-demographics and well-being due to few persons in those groups.

Alcohol use in relation to socio-demographic variables

As shown in Table 3, hazardous use of alcohol was more common, and no use less common, among the Swedish-born compared to those with a foreign origin. When analyzing education level in relation to alcohol use, it was obvious that the group with incomplete compulsory education exhibited a pattern of use that deviated from the three other educational groups presented in Table 1, whereas none of these three showed any substantial between-group differences. This made us collapse these three groups into one labeled “completed compulsory school”. According to this procedure, there was a significant difference in that those who had completed at least nine-year compulsory education were more likely to have a hazardous use of alcohol than participants who had not completed compulsory education. Since country of origin and education level might be associated factors we analyzed this association and found that uncompleted nine-year compulsory school was more common among those with a foreign origin ($\chi^2=16.4$; $p=0.001$). Subsequent logistic regression analysis indicated that being foreign-born (OR=0.91; $p=0.035$) reduced the risk of hazardous use and increased the probability of no use, whereas education level did not become significant in that analysis ($p=0.395$). Table 3 shows more details regarding the statistically significant associations, which concerned groups based on country of origin and education level on the one hand and alcohol use on the other.

Groups based on alcohol use			
	Hazardous use (HU) n=17	Non-hazardous use (NHU) n=76	No use (NU) n=27
Country of origin¹⁾			
Born in Sweden, n=76	18%	67%	14%
Foreign-born, n=30	3%	60%	37%
Education level²⁾			
Incomplete compulsory education, n=8	0%	25%	75%
Compulsory education or higher, n=101	12%	69%	19%

Table 3: Country of origin and education level in relation to groups based on alcohol use. ¹⁾ $\chi^2=8.73$ (2 df), $p=0.013$; ²⁾HU vs. NHU, $p=0.003$; HU vs. NU, $p=0.149$; NHU vs. NU, $p=1$.

Note: Findings regarding country of origin are based on the χ^2 test, whereas those regarding education level are based on Fisher’s exact test. Numbers vary between tables due to missing data.

Not shown in Table 3, none of the other investigated socio-demographic variables (age, sex, marital status) were associated with alcohol consumption group; p-values varied between 0.128 and 0.499.

Alcohol use in relation to health-related variables and self-reported diagnosis

The three groupings formed on the basis of alcohol use did not differ significantly on any of the health-related variables (self-rated health, general quality of life, composite quality of life, GAF symptoms, GAF functioning) or diagnosis ($p=0.306$). The p-values varied between 0.058 (GAF functioning) and 0.995.

Changes in alcohol and drug use over time

The participants’ mean scores (SD) were 3.1 (4.2) on AUDIT and 0.2 (1.4) on DUDIT at follow-up. Based on the groupings generated from the cut-off scores, both alcohol use ($p=0.261$) and drug use ($p=0.368$) were stable from baseline to follow-up.

Discussion

The main result of this study is that nearly one fifth of the participants had a hazardous use of alcohol and/or drugs. The frequency of hazardous alcohol use, 14%, is lower than in two Swedish samples from the psychiatric field: 18% in a psychosis sample [48], and 29% in a sample from general psychiatry [49]. The frequency is also lower in comparison to 22% among patients in primary care seeking treatment for depression [50]. However, one should bear in mind that the current study focused on people without a substance use disorder, which means that these comparisons are not entirely fair but underestimate the the rate of hazardous use in the present sample. Comparable studies on samples without a substance use disorder seem to lack.

In line with the above referenced studies, we found no sex differences. The corresponding figure for hazardous alcohol use in the Swedish population is 15% in both women and men [51]. Hazardous use was not associated with age in our sample, which is in agreement with the Swedish patient populations above [48,49], although our sample was older.

The proportion of people with hazardous drug use in this sample, 5%, is somewhat lower than in the aforementioned Swedish psychosis sample, 9% [48], but similar to a general psychiatry sample, 6% [25]. However, the fact that use of drugs is a breach of the law in Sweden, and thus may influence willingness to admit any use, indicates that the findings presented here should be interpreted with some caution. Because of that, and due to the very small number of people with drug use and hazardous drug use in the present study, we refrain from further discussion of findings regarding drug use.

The frequency of not using alcohol, 23%, was somewhat lower than in a Swedish patient psychosis sample, 30% [48], while higher than in two Swedish patient samples collected in general psychiatry, where the corresponding proportions were 14% [25] and 16% [49], respectively, and also higher than in a primary care sample of patients with depression, 10% [50]. The frequency of not using alcohol in the general Swedish population is 14.6% [50]. Again, the current study cannot be directly compared to these studies, since it was based on people who did not have a substance use disorder. Had that group been included, the proportion of non-users would of course have been lower.

No use of alcohol was associated with country of origin in the current study, and those who were born outside of Sweden more often reported no use of alcohol and less often hazardous use. Since the Middle Eastern region was one of the most common places of origin for the foreign-born, no use of alcohol might be related to the religious

principles of Islam. In Finland, on the other hand, which was another common country of origin, drinking is common among people with mental health disorders [52]. Possibly, the day center context might have served as social control. Huhtanen and Raitasalo [53] identified three ways of regulating alcohol consumption, one of which was social control while the other two were self-control and external control.

Alcohol use was not related to any of the assessed aspects of well-being. Research is scarce on relationships between alcohol and/or drug use and well-being, as mentioned in the introduction to this paper, and findings are inconclusive [26,27], which calls for further research.

This study produced new knowledge since it is the first study of people with psychiatric disabilities receiving support in the municipal context. Although further studies are warranted, including larger samples that could also provide reliable estimations of drug use, our findings indicate that municipality-based psychiatry needs to take preventive measures to counteract the development of alcohol use disorders. Both alcohol and drug use were stable over time, which is similar to the findings obtained by Cruce and Öjehagen [54] when following up a group of patients with psychosis regarding alcohol and drug use. The fact that no reduction in hazardous use of alcohol and drugs was seen at the follow-up indicates that the regular support provided in day centers was not sufficient in that respect. A study by Eberhard and colleagues showed that hazardous use of alcohol was reduced by a short telephone intervention among psychiatric outpatients [55]. No similar intervention appears to have been implemented in the day center context, or among people considered as having psychiatric disabilities, but would be worth trying for day center attendees.

Methodological limitations

A drawback of this study was that of the 98 persons invited to a follow-up, only 60% participated. In the study by Cruce and Öjehagen [54], 78% were reached. The samples differed in some respects, however, and the present one consisted of people assessed as having psychiatric disabilities as a consequence of their present or former psychiatric disease. Many expressed they were too tired or unmotivated to take part in the follow-up. The study context differed as well compared to the aforementioned study, and the community-based services that run the targeted type of day centers do not keep registers of the attendees. This makes it difficult to reach attendees who have stopped coming or moved. Although there are explanations for the low participation rate at follow-up, it lowers the internal and external validity of the study.

No diagnoses determined by professionals were available, which is another limitation of the study although self-reported diagnoses have been found to be reasonably reliable [34]. The study did also not include collateral interviews or biological markers of alcohol and drug use to verify self-reported substance use data. Furthermore, the study was based on a fairly small sample and the findings may be afflicted by Type II errors. Further research is needed in the day center context, partly to see if the findings can be replicated and partly to refine the research questions. The findings from the present study may serve as a basis in that endeavor.

Conclusion

The results regarding the frequency of hazardous alcohol and/or drug use among the participants in this study, which appeared to be higher among Swedish born, indicate that mental health care staff

should pay attention to hazardous alcohol and drug use among people with psychiatric disabilities, even if a substance use disorder is not present. Screening for hazardous use of alcohol and drugs may need to be considered. Particular interventions, possibly in line with the one mentioned above, may be warranted to prevent further deterioration in mental health, including the development of an alcohol and drug use disorder. More studies on this population and their use of alcohol and drugs are needed, but the current findings suggest the municipality-based mental health services must stay alert on this issue.

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