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Research Article

Medical and licit drug use in an urban/rural study population with a refugee background, 7-8 years into resettlement

Einnahme von Medikamenten und legalen Drogen in einer städtisch-ländlichen Population mit Flüchtlings-Hintergrund sieben bis acht Jahre nach Übersiedlung

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Abstract

Objective: Research into medical and licit drug use in resettled refugee populations is scarce, despite the fact that mental health status often has been found to be poorer than in general populations. Hence the aim of this study was to estimate the prevalence of self-rated use of medicine and licit drugs among adults who came to Sweden from Bosnia-Herzegovina (1993/94) and who in 2001 were living in either an urban (low employment context) or a rural (high employment context) region (n=4185).
Methods: Prevalence was estimated from a cross-sectional questionnaire distributed to a representative sample (n=650) in 2001 (63.5% response rate).
Results: The study population estimates of usage of sedatives (26.5%), sleeping tablets (26.2%) and antidepressants (22.3%) did not differ by gender but did so by region, with a higher urban prevalence. The consumption of alcohol (5.1%) and cigarettes (41.0%) did not differ by region but men reported higher alcohol consumption than women.
Conclusion: The high consumption of medicine (compared with general populations) raises the question of treatment efficiency and the need for public health attention and evaluation many years after resettlement. Factors to consider for further research with analytic prerequisites concern indications that regional differences may be influenced, not only by urban employment being lower but also by urban/rural differences in prescription rates and/or access to health care; moreover, there might have been a selection to the urban region of older people, with a more vulnerable family situation, and/or poorer mental health. Finally, the overall alcohol (low) and cigarettes (high) consumption in the study population followed prevalence patterns found in Bosnia-Herzegovina rather than in Sweden.

Keywords: mental health, refugees, urban, gender, Bosnia-Herzegovina, prevalence

Zusammenfassung

Fragestellung: Über die Einnahme von Medikamenten und legalen Drogen in umgesiedelten Flüchtlingspopulationen liegen erst wenige Forschungsergebnisse vor, obwohl ihr allgemeiner Gesundheitszustand oft schlechter ist als derjenige der Allgemeinbevölkerung. Es sollte daher die Prävalenz selbst berichteter Einnahme von Medikamenten und legalen Drogen bei n=4185 Erwachsenen untersucht werden, die 1993–94 aus Bosnien-Herzegovina nach Schweden kamen und im Jahr 2001 entweder in einer städtischen Region (mit geringer Beschäftigungsrate) oder in einer ländlichen Region (mit hoher Beschäftigungsrate) lebten.

Methode: Die Prävalenz wurde 2001 im Querschnitt mittels Fragebogenerhebung an einer repräsentativen Stichprobe (n=650; 63,5% Beantwortungsquote) geschätzt.
Ergebnisse: Die Populations-Schätzwerte für Einnahme von Sedativa (26,5%), Schlaftabletten (26,2%) und Antidepressiva (22,3%) unterschieden sich nicht zwischen den Geschlechtern, wohl aber zwischen den Regionen mit höheren Raten bei Stadtbewohnern. Der Konsum von Alkohol (5,1%) und Zigaretten (41,0%) unterschied sich nicht zwischen den Regionen, aber Männer berichteten mehr Alkoholkonsum als Frauen.
Schlussfolgerung: Der hohe Medikamentenkonsum im Vergleich zur Allgemeinbevölkerung wirft die Frage nach der Behandlungseffizienz und der Notwendigkeit verstärkter Beachtung durch das öffentliche Gesundheitssystem noch Jahre nach der Übersiedlung auf. Die zukünftige Forschung sollte mit entsprechender Methodik Anzeichen dafür nachgehen, dass die regionalen Unterschiede nicht nur durch die niedrigen städtischen Beschäftigungsraten sondern auch durch Stadt-Land-Gefälle in Verschreibungsraten und/oder Zugang zur Gesundheitsversorgung bedingt sein könnten. Zudem könnte ein Selektionseffekt vorliegen, indem ältere Flüchtlinge mit vulnerablerer familiärer Situation und/oder schlechterer psychischer Gesundheit bevorzugt in städtischen Regionen leben. Schließlich folgt der allgemeine (niedrige) Alkohol- und (hohe) Zigarettenkonsum der Studienpopulation eher bosnischen als schwedischen Prävalenzraten.

Schlüsselwörter: psychische Gesundheit, Flüchtlinge, Bosnien-Herzegovina, Stadt-Land-Effekte, Geschlecht, Prävalenz

Introduction

Epidemiological evidence often indicates poor mental health among people who have sought refuge in Western countries [1]; in Europe, the most commonly diagnosed conditions appear to be posttraumatic stress disorder and mood disorders [2]. Factors influencing mental health partly relate to issues of refugee/forced migration (such as experience of war, conflict or persecution) and the migratory journey. Post-migration factors in the surrounding environment (such as social support, length of asylum period, access to jobs, health care and other social services and discrimination) in the country of resettlement have also been shown to play a vital role for mental health [3], [4], [5], [6], [7] but still need more attention [8].

Medication and substance use in refugee populations

Symptoms of poor mental health, illness and/or disorder are commonly addressed through medication. The World Health Organization names medication (or pharmacotherapy) as one of three fundamental ingredients in the management of mental and behavioural disorders [9]. Nevertheless, published (peer-reviewed) scientific articles on the use of psychotropic medication amongst refugees/forced migrants are extremely scarce [10], almost non-existent. A small study in Sweden indicates a high rate for the use of medicines (such as sedatives) among people, especially women, living as asylum seekers and with experience of living in hiding [11]. Psychotropic use has also been found to vary with ethnicity/racial background (e.g. [12], [13]), country of birth and gender (e.g. [14], [15]). Studies of licit drugs (alcohol and cigarettes) in traumatized civilian populations are more numerous and have generally shown an increased use; these drugs are considered to have tension-reducing effects and are used as such for coping with trauma (i.e. as “self-medication”) [16], [17], [18]. In some of these studies, however, alcohol use was not increased [17].

Resettlement environment and mental health

Focusing on the resettlement environment, un/employment (post-displacement) is associated with mental health outcomes [19], [20]. Employment opportunities may, however, vary depending in part on the place of living in the country of resettlement [21]. Nonetheless, research into the relationship between the place of living (urban/rural) and mental health in Western general populations (let alone refugee populations) is still scarce and so far inconclusive; some studies show higher levels of poor mental health in urban areas, some in rural, and others with no difference between the two [22], [23], [24]. The ESEMeD survey of psychotropic drug utilization in Europe found no differences in psychotropic prevalence between rural, medium-sized and large urban settings [25]. Growing social epidemiologic evidence does, however, suggest that area characteristics (such as neighbour-

hood deprivation) are associated with an increased risk of alcohol and cigarette use [26].

Study objective

In 2001, a cross-sectional survey was conducted on the mental health–employment relationship in an urban (low employment context) versus a rural (high employment context) community sample of adults who had come from Bosnia-Herzegovina to Sweden in 1993/94 due to the war (i.e. refugees). In a previous article [27] we used binary regression to explore associations of self-rated poor mental health, region of living and employment level. In the present article we focus on estimating prevalences of self-rated medication (sedatives, sleeping tablets, and anti-depressants) and licit drug use (alcohol and cigarettes) derived from the survey, and identify regional and gender differences in self-rated consumption. We have opted for a descriptive approach because current research knowledge of variations in medical and licit drug use in resettled refugee populations is still very scarce and we believe prevalence estimations would be sufficient 1) to indicate directions for further analytic research (both for general research focusing on populations in resettlement and for research specifically focusing on this population), and 2) to contribute to the wider knowledge of variations in mental health. Finally, we expected the urban environment, with its low employment context, to present higher prevalence estimates than the rural.

Methods

The study has been subject to ethical review by the Regional Ethical Research Committee at the Karolinska Institutet, Sweden (KI Dnr 01-241).

Stratification and study population

About one million people were displaced due to the war in Bosnia-Herzegovina. In the 1990s, former inhabitants of Bosnia-Herzegovina constituted the largest refugee immigrant population in Sweden. The Centre of Labour Market Policy Research (CAFO) at Växjö University, Sweden, built up a register that included the approximately 48,000 persons who came from Bosnia-Herzegovina to Sweden in 1993/1994 [28]. The study population (n=4185) was stratified from this target population (target population size in 2001 was approximately 45,000) in terms of region and employment activity. The regional strata were urban region (Region I, the city of Malmö) and rural region (Region II, the municipalities of Gnosjö, Vaggeryd, Gislaved and Värnamo). The employment activity (EA) strata refer to an individual's participation (activity) in the labour market and were categorised by Statistics Sweden through the identification of individuals who: 1) were registered in RAMS (register-based labour market statistics) as being in "gainful employment" (during 1993–99) for at least 1 hour in November each year, and 2) had an income from work (i.e. wages and income from a business enterprise) equivalent to at least one index-linked base amount for 1999. Statistics Sweden created four groups of EA strata through a process of weighting. The weighting was expressed in points, with a maximum of 17 points for the years 1993–99 and the highest points assigned to more recent years. Stratum 1 consisted of persons with the least employment activity (EA) points, i.e. <4 EA points, Stratum 2 those with 4–7 EA points, Stratum 3 those with 8–12 EA points and Stratum 4, finally, those with the most EA points, i.e. >12 EA points. Stratum 3 was then divided into two groups: individuals in employment and individuals not in employment in 1999. For a more detailed description about the stratification and weighting process (illustrated with a table) please see our previous publication [27]. Further criteria for inclusion in the study population were that a person had immigrated to Sweden by 31st December 1993 and/or during 1994, was still registered as living in Sweden at the time of the study (in 2001), had been born in and/or held citizenship of Bosnia-Herzegovina and was 18–60 years of age at the time of immigration (i.e. in 1993/94). Thus, individuals over 65 years of age at the time of the study were excluded.

Sample and survey information

A total of 650 people were randomly selected from the study population, using simple random sampling within stratum. In collaboration with Statistics Sweden, the survey instrument was translated/back-translated and tested [29], [27] before being posted (in Bosnian and Swedish) to the selected study participants (n=650) in October 2001 – January 2002. Participation was voluntary and consent given by returning the survey questionnaire. Anonymity and confidentiality were ensured through the use of identification numbers. The final sample was 413 people (response rate = 63.5%).

Variables

Demographic variables

Demographic variables were derived from the "Immigration Survey Questionnaire 1996" (Inv-ULF 96) [30] and included: gender, age (both continuous and categorised: 25–49 and 50–65 years of age), number of years of education and employment in Bosnia-Herzegovina. Moreover, family situation was explored through the number of children and the current living situation (categories: "living alone", "together with wife/husband/partner", and "together with family/relatives" with response alternatives "Yes/No"). Type-of-residence categories were "Swedish citizenship", "permanent residence", and "temporary residence" (response alternatives "Yes/No"); temporary residence was available [27] but was excluded from the analysis because only one person stated this option. Geographical mobility covered three items, revised from the Living Conditions Survey Questionnaire, ULF-

1996 [31], concerning municipal mobility and change of accommodation. Responses to these items were summed and coded: 0 = no change of municipality (since arrival), 1 = changed municipality once or more to work, 2 = changed municipality once or more to be close to family/friends, and 3 = changed municipality for other reasons. The item concerning occupational status was derived from a questionnaire used by Statistic Sweden (for further information, please contact the first author of this article) that contained 8 categories for responses to the question: "Which alternative fits your current occupation the best?" The responses were then re-categorised into 1) a "working only" group, consisting of respondents who only chose the response alternative "working", 2) an "unemployed" group, those who opted for the "unemployed" alternative only or in combination with "other occupation", and 3) an "other occupation" group, comprising those in other occupations (i.e. response alternatives: employed but not currently working, taking part in an activity/programme, studying, housewife, retired/illness benefit, and other).

Medication

Variables regarding use of medication were derived from the ULF questionnaire [31] and originally comprised a multi-response item with 17 different types of pharmaceuticals (non-prescribed and prescribed, including e.g. laxatives, cardiac medication, etc.) followed by a question on frequency of use during the past month, with a response scale from 0 = Never, to 4 = Almost every day. Of the 17 types of pharmaceuticals, three items: usage of sedatives, sleeping tablets, and antidepressants, were selected as they specifically concern mental health. The original response scale was dichotomised for analysis: 0 = Never and 1 = A few times a month to almost every day.

Licit drug use

Licit drug use was assessed with four questions covering alcohol consumption and tobacco use. The first two items in the Alcohol Use Disorder Identification Test, "AUDIT" [32], were used to measure weekly alcohol consumption. Calculation and cut-off followed previously used procedures [33], [34]. For analysis, alcohol use was coded: 0 = Abstainers and no/low risk consumption, i.e. <110 grams/week for males and <80 grams/week for females, and 1 = some to considerable risk, i.e. ≥110 gram per week for males and ≥80 grams per week for females. The question on cigarette use was developed from the ULF questionnaire [31] and formulated as: Do you use tobacco in the form of cigarettes/cigarillos or pipe tobacco? There were three response options: "No", "Yes, every day" followed by how many and "Yes, every week" followed by how many. For analysis, this response scale was dichotomised: 0 = "No" plus "Yes, every week", and 1 = "Yes, every day".

Statistical analysis

The first and second authors of this article undertook the statistical analysis. Prevalence estimates in the study populations, adjusted for stratification and weighting, are based on the answers of the 413 respondents (although the response per item varied, as shown in Table 1).

Table 1: The proportions of people in the study sample (n=413) responding to each item

Variable	Proportion (%) of item respondents
Sex	100
Age	99.3
Family situation	
Have children	100
Living with child/ren below the age of 15	97.1
Living alone	99.8
Living with husband/wife/partner	99.8
Living with family/relatives	99.8
Type of residency	
Swedish citizen	99.3
Geographical mobility	
Did not move [a]	80.4
Moved to work/get a better job	80.4
Moved to be close to family/relatives or friends	80.4
Moved for other reasons	80.4
Occupational status	
Working only	96.4
Unemployed	96.4
Other occupation	96.4
Medication	
Sedatives	84.8
Sleeping tablets	86.2
Antidepressants	83.3
Licit drug use	
Alcohol consumption*	94.2
Cigarette consumption**	93.2

[a] Did not change municipality since arrival in Sweden
* Some to considerable risk, ** Cigarettes per day

Prevalence estimates, including 95% confidence intervals, were calculated with established methods for stratified sampling [35]. Prevalence estimates concerning categorical variables (but not the continuous variables) were calculated to identify differences by gender. The variance for these prevalence estimates was calculated approximately with the propagation of error formula [36]. All categorical background variables were calculated to identify differences between the regions and gender. To assess statistically significant regional and gender differ-

Table 2: Prevalence differences (pd), z-values (z), and statistical significance (p) in background variables, medical and licit drug use by region (urban/rural) and gender (women/men)

	Urban/rural			Women/men		
Variable	Pd (%)	z	p	Pd (%)	z	p
Sex						
Females	5.1	1.03	0.152	-	-	-
Age						
>50 years old	10.6	2.13	0.016	0.0	0.05	0.964
Family situation						
Have children	7.9	1.71	0.043	4.5	1.13	0.257
Living with child/ren below the age of 15	14.4	2.93	0.002	2.8	0.70	0.481
Living alone	10.1	2.22	0.013	4.8	1.09	0.274
Living with husband/wife/partner	9.6	1.94	0.026	6.9	1.34	0.181
Living with family/relatives	1.0	0.20	0.419	0.0	0.15	0.879
Type of residency						
Swedish citizen	0.7	0.18	0.428	0.0	0.06	0.952
Geographical mobility						
Did not move [a]	0.0	0.19	0.424	13.0	2.52	0.012
Moved to work/get a better job	29.8	5.55	<0.00001	24.5	3.64	0.0003
Moved to be close to family/relatives or friends	7.3	1.36	0.087	0.0	0.24	0.812
Moved for other reasons	21.6	4.12	<0.00001	0.0	0.18	0.859
Occupational status						
Working only	22.0	5.17	<0.00001	11.4	2.31	0.021
Unemployed	26.0	5.11	<0.00001	0.1	1.01	0.314
Other occupation	3.0	0.74	0.229	0.1	1.35	0.178
Medication						
Sedatives	15.2	3.02	0.001	0.1	1.15	0.250
Sleeping tablets	0.08	1.56	0.06	0.1	1.02	0.305
Antidepressants	10.5	1.95	0.026	0.0	0.85	0.393
Licit drug use						
Alcohol consumption*	0.0	0.03	0.488	8.5	1.99	0.05
Cigarette consumption**	0.0	0.12	0.451	0.1	1.33	0.184

[a] Did not change municipality since arrival in Sweden, * Some to considerable risk, ** Cigarettes per day

ences, a normality (z) test was used. Estimated power for detecting a health difference of 10% if Region I (p1) = 250 and Region II (p2) = 250 (total = 500) and H0: p1=p2 (e.g. 20% in p1 minus 10% in p2), was 80% (alpha = 0.05, two-sided). The statistical software SPSS (version 13.0) and STATA (version 8) were used for calculations.

Results

Background variables

The average age in the study population was 36.9 years (standard error of the estimated mean, s.e.=0.55). There was a large, statistically significant regional difference (z=15.26; p<0.00001) in average age, which was about 15 years higher in the urban (mean=42.6; s.e.=0.82) compared with the rural (mean=27.5; s.e.=0.57) region. Years of education in Bosnia-Herzegovina averaged 11.1 years (s.e.=0.19) and years of work experience in Bosnia-Herzegovina averaged 10.4 years (s.e.=0.54). In these two respects there was no statistically significantly difference between the regions (prevalence difference (pd): 0.9%; z=0.78; p=0.217, respectively, pd: 1.24%; z=1.24; p=0.107). Results concerning differences in categorical variables depending on region and gender are presented in Table 2 and Figure 1. These show that compared with the rural region, notably fewer people in the urban region had moved in order to work/obtain a better job, while more had moved for "other" reasons. In agreement with the stratified study design, in the urban region unemployment was higher and fewer people were working only. The urban population appeared to live alone/without family to a higher extent (although the confidence intervals between the regions mostly overlap, see Figure 1). Finally, as seen in Figure 1, only 3 (out of 15) variables differed statistically depending on gender: more men than women had moved in order to work/obtain a better job

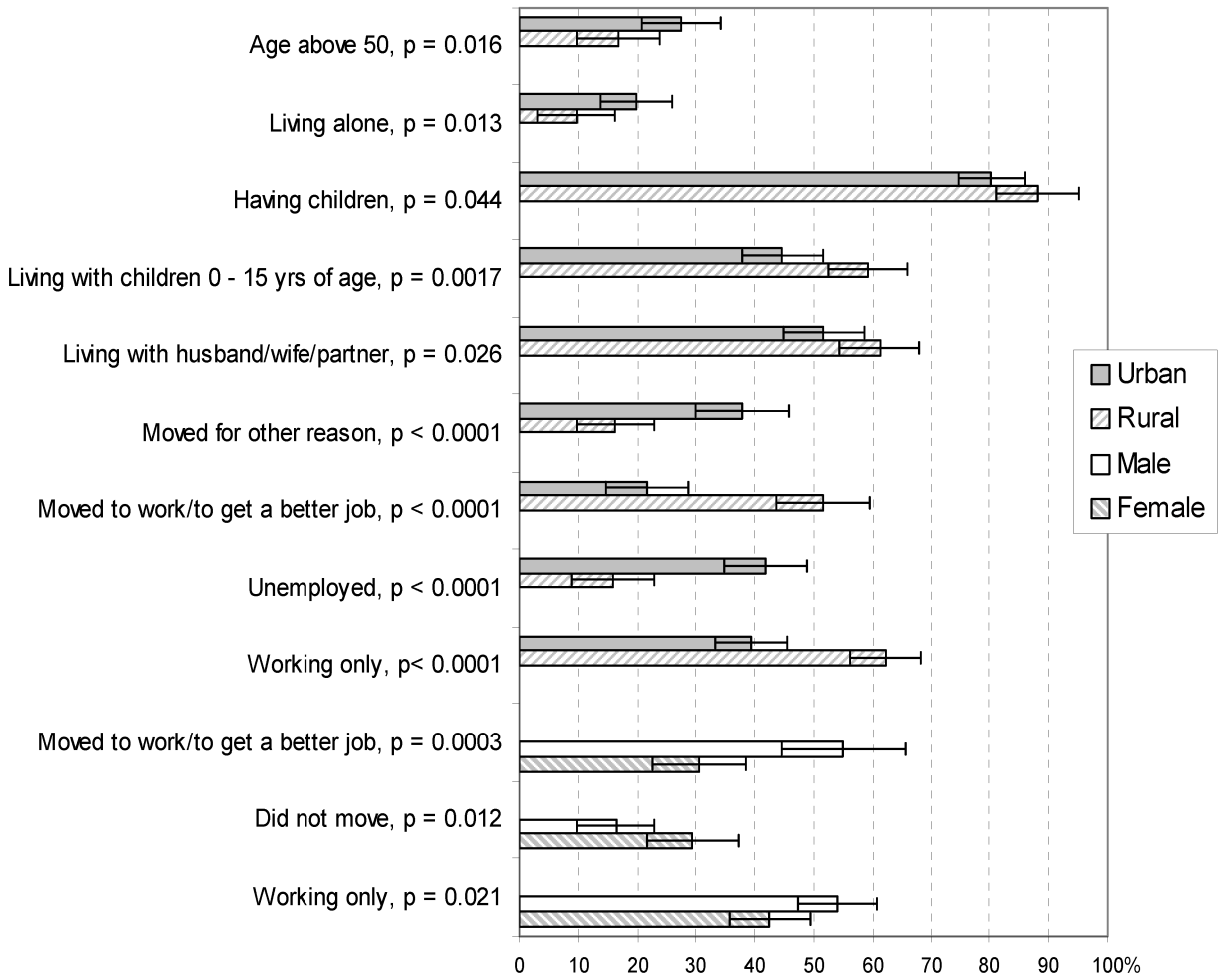

Figure 1: Statistically significant differences in estimated prevalence (%) and approximate 95% confidence intervals (CI) between the urban (n=2592) and the rural (n=1593) region and between men and women

and more men than women were working only, while more women than men had not moved at all (however, for the latter two, the confidence intervals overlap).

Medication and licit drug use

Overall, 30.3% (CI: 25.0–35.7%) had used sedatives, sleeping tablets or antidepressants during the past month. More particularly, 26.5% (CI: 21.5–31.6%) had used sedatives, 26.2% (CI: 21.2–31.3%) had used sleeping tablets, and 22.3% (CI: 17.5–27.2%) had used antidepressants (although confidence intervals overlap). An alcohol consumption entailing some to a considerable risk was present for 5.1 percent (CI: 1.6–8.6%). Of all the men and women, 41 percent (CI: 35.7–46.3%) smoked cigarettes every day.

As with the background variables, the variables on medication and licit drug use were also tested for statistically significant difference depending on region and gender (Table 2). The use of sedatives and of antidepressants was higher in the urban region. However, confidence intervals again overlap (Figure 1). The prevalence of alcohol consumption with some to a considerable risk was higher among men than women, although confidence intervals overlap (Figure 1).

Discussion

The cross-sectional design used in this article is not suitable for detecting cause-effect relationships but can be used for prevalence estimations. The stratified and within strata randomised sample selection enhances generalisability, which is an advantage in that generalisability is often difficult to achieve in refugee migration and health research. The prevalence measures were derived from questionnaires that had previously been tested and validated in populations with different cultural and linguistic backgrounds, i.e. ULF 96 [37], [38] for medical and cigarette use and AUDIT e.g. [32], [39] for alcohol use. Prior to its distribution, the survey instrument in which the prevalence measures were embedded was translated/back-translated and tested [29], [27].

Main findings

The identified prevalence estimates for medication in this study are high compared with prevalence proportions (standardised for sex and age) in the Swedish general population derived from the Living Conditions Survey Questionnaire (ULF) by Statistics Sweden [40]. Their data

from 2004/5 show a self-rated sedative usage of 2.6%, sleeping tablet usage 5.4%, and antidepressant usage 4.2%. A study conducted during September 2001 (Statistics Sweden have no relevant data from that year), in which the mental health status of primary care patients (n=1348) was mapped from physicians' assessments of treatment, found similar estimates (sedatives: 3.2%, sleeping tablets: 3.3%, and antidepressants: 5.5%) [41]. The present prevalence estimates are more similar to proportions identified in an American study of 2958 veterans with bipolar disorder in 2001, of whom 60.4% were prescribed some type of anti-depressant and 24.4% were prescribed benzodiazepines [13].

The study also indicates higher urban prevalences for use of sedatives and antidepressants as well as a minor increase in sleeping-tablet usage (statistical tendency, p-value = 0.06). This was somewhat expected, considering previous findings of generally poorer mental health in the urban region [22] and the fact that the urban region was selected because of its lower employment rate amongst Bosnian men in 1997 [21], [27]. Nevertheless, considering that fewer people had moved to the urban region in order to work/obtain a better job, while more people had moved for "other reasons" (than to be close to work/obtain a better job or to be close to family/relatives or friends), there may have been a selection of people with poorer health to the urban region. The urban population was perhaps also more exposed in terms of family situation, with less social support: more people were living alone, fewer had children of any age, and fewer lived with a husband/wife or partner, or with young children than in the rural region. Furthermore, in the "ESEMeD" study into psychotropic use in Europe, prevalence was not higher in urban regions but the probability of psychotropic drug use increased with age [25]. This is relevant to the current study, since the average mean age in the urban region was 15 years higher than in the rural region. Although binary regression analysis in our previous study did not find that age was associated with a higher level of symptoms [27], the observed age difference is still of interest in that previous research has indicated that particularly older refugees from Bosnia-Herzegovina (during the first year of resettlement) are at greater risk of posttraumatic stress disorder [42].

It is, however, possible that regional differences in estimates reflect differences in prescription rates and/or access to health care rather than the influence of un/employment, poor mental health, and/or family situation. As indicated by available general population data from Statistics Sweden [40], urban prevalence (Malmö) for all three pharmaceuticals was higher in both 1996/97 and 2004/05 compared with the rest of Sweden. Yet another explanation could relate to urban help-seeking behaviour. Dahlberg and colleagues [43] found that the level of symptoms of depression and anxiety was similar in urban and rural samples of the Swedish adult general population but help-seeking behaviour was more common in the urban area. Furthermore, it could be that specialized health care, often situated in urban regions (in this case focusing on treatment for refugees), increases urban medical use.

Regarding gender differences, women in general as well as those with a refugee background tend to experience poorer mental health than men [44], [20]; similarly, psychotropic drug use has been found to be more common in females than in males [25]. Furthermore, we have previously found women (from the same sample) to be associated with higher levels of self-rated symptoms of poor mental health [27]. Thus, some gender-dependent difference in prevalence (either higher or lower) could have been expected. However, no statistically significant difference was found between men and women in the use of medication.

The prevalence estimates for alcohol consumption are low (considering they include some to considerable risk, not just considerable risk) compared with Swedish studies conducted in the late 1990s and early 2000s [45], where amongst four reviewed studies the prevalence of heavy drinking (30–40 grams alcohol or more/day for men, 20 grams for women) ranged from 3.3% (females only) to 8.8% (females and males). However, the observed prevalence is more in line with rates reported in the WHO Global Status Report on Alcohol 2004 for Bosnia-Herzegovina [46]: data from the 2003 World Health Survey showed prevalence rates for heavy or hazardous drinking (40 grams alcohol or more/day for men, 20 grams for women) to be 0.1% overall (n=1026), 0.3% for men and 0.0% for women [46]. The low prevalence estimates are also supported by previous findings of limited alcohol use in a sample of Bosnian war veterans [47]. The observed gender differences in alcohol consumption, with a higher prevalence among men, are in line with previous research in both general and displaced populations [43], [16]. No statistically significant regional difference was observed. The daily cigarette consumption reported in this study is rather high compared with the World Health Organization (WHO) estimate of 18.9% for the Swedish population (aged 15+) in 2001 [48]. It is more in line with the equivalent WHO estimate for Bosnia-Herzegovina, which was 37.6% in 2002 [48]. Contrary to recent European-wide research (including Sweden), showing persistently higher smoking rates in urban compared with rural areas, and particularly among women [49], we found no statistically significant regional or gender differences.

The low consumption of alcohol and high consumption of cigarettes in this study are more akin to prevalence patterns in Bosnia-Herzegovina than in Sweden. This is unlikely to be due to ethnic disparities as available social epidemiological evidence suggests such differences are largely attributable to differences in socioeconomic status or availability of drugs [26]. It is, however, possible that the prevalence patterns are reflecting the impact of religion or culture [17], [50], as in general social epidemiological research social norms (as manifest in families and social networks) have consistently been found to be associated with sustained abstinence from alcohol and cigarettes as well as the likelihood of cessation [26]. With

regards to licit drug use, prevalence may also be influenced by religious and cultural affiliations as such factors may have an effect on, for example, the preferences for different treatment methods [51]. The study presented here does not, however, hold the information necessary to explore these aspects any further.

Limitations

The present study relies on external comparisons of prevalence estimates, as no matching group was included in the design. Hence, differences between the study population and other survey populations (such as general population data from Statistics Sweden and WHO) should be interpreted with some caution. Still, considering the limited research into medical drug use in resettled refugee/forced migrant populations, the findings in this study, such as the indication of an overall high consumption of medicine, are important to report and discuss. Nevertheless, some aspects should be mentioned. Firstly, the descriptive approach limits controlling for confounders. More specifically, employment level and region were not separated; hence level of employment could be a confounding factor for urban prevalence estimates. Similarly, the urban environment per se might contribute to elevated prevalence proportions but the current study cannot shed light on this issue because regional prevalence estimates were not made separately from employment level. Neither was it possible to estimate prevalences separately by age groups because the necessary information about the study population was not accessible.

Secondly, the level of non-response (36.5% of 650) could be due to poor mental health, and may possibly have led to underestimation of prevalences. In a previous report, however, an analysis of the response rates showed that overall responses by strata were similar apart from a lower response among the rural non-employed in 1999 (i.e. those in strata 1), possibly leading to an underestimation of prevalence proportions in the rural region [27]. The only other differences were lower response rates in the younger segment of the population (ages 25–49) and among persons with foreign compared with Swedish citizenship. Prevalence estimates may also be affected by variations in item response/missing: the fewer the observations, the less certain the estimates become, and as the reasons for missing items are not known, the risk of bias increases. Furthermore, identified prevalence differences might have been different if the power of the study had been greater and/or a narrower confidence interval had been used.

Thirdly, the overall prevalence proportions for the three pharmaceuticals are rather similar and the confidence intervals for these proportions overlapped, which means that the proportions might differ to a greater or lesser extent. However, the similar proportions might also reflect combined treatment interventions amongst many individuals in the study population [52] something which was not explored or controlled for in the present study. It is also possible that other factors influenced the estimates, such as those relating to cultural aspects that affect incidences and variations in mood disorders, e.g. pathways to care, explanatory models and identification of symptoms [53].

Fourthly, wartime consumption patterns (onset and use) may differ from those after resettlement [54], and the fact that the current study did not contain any questions about previous medication is a limitation. Moreover, for ethical reasons, the study contained no information on pre-migration trauma [27] or previous history of poor mental health (including licit drug use), which also limits the interpretation of estimated prevalences. Also, as is commonly the case with questionnaire surveys, the retrospective items pose a risk of recall bias.

Finally, the study population consisted of people 7–8 years into resettlement (all holding either Swedish citizenship (79%) or permanent residency) who did not have any legal restrictions with regard to the right to access health care, employment, housing etc. The health, employment, and living situation of refugees in earlier stages of resettlement (e.g. on arrival or during the asylum period) and from other nationalities are vastly different, with many barriers to access to societal services (such as waiting times during asylum, living difficulties and restrictions on health service access and use).

Conclusion

The present study is noteworthy for its focus (particularly on medical use), which seems to be rare in current research on mental health among persons with a refugee/forced migrant background but also because of its randomly selected study population, which tends to be hard to achieve in research involving migrant populations. Despite its limitations, the study highlights some important factors to consider for further research with analytic prerequisites. The overall (self-rated) consumption of antidepressants, sedatives and sleeping-tablets was found to be high compared with general population data. This raises the question of treatment efficiency and highlights the need for public health attention and evaluation many years after resettlement. Within-group differences were also found, with a higher urban consumption of antidepressants and sedatives. The present study is not able to state what actually caused these differences; however, it does indicate that the lower urban employment may be one factor. Other likely factors are urban/rural differences in prescription rates, access to health care and/or treatment efficiency. Alternatively, there may have been a selection to the urban region of older people, with a more vulnerable family situation, and/or poorer mental health. Moreover, contrary to previous research, no regional differences were found in the consumption of alcohol or cigarettes. However, it is interesting that after 7–8 years in resettlement, the overall consumption of alcohol (low) and cigarettes (high) in the study population followed WHO-measured prevalence patterns in Bosnia-Herzego-

vina rather than in Sweden. Moreover, previous research indicates that women often experience poorer mental health than men but no support for this was found, as use of medication did not differ by gender and for alcohol consumption it was rather men who stood out, reporting higher levels (of some to considerable risk) than the women.

Notes

Conflicts of interest

None declared.

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