

SOCIOECONOMIC CHARACTERISTICS, HEALTH RISK FACTORS AND ALCOHOL CONSUMPTION AMONG THE HOMELESS IN NORTH-EASTERN PART OF POLAND

Jerzy Romaszko¹, Robert Kuchta², Cezary Opalach³, Anna Bertrand-Bucińska⁴, Anna Maria Romaszko⁵, Beata Giergielewicz-Januszko¹, Adam Buciński⁶

¹Family Medicine Unit, University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

²Faculty of Theology, University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

³Municipal Social Welfare Centre, Olsztyn, Poland

⁴Department of Foreign Language Studies, University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

⁵Department of Pulmonary Medicine and Infectious Diseases, University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

⁶Department of Biopharmacy, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń, Bydgoszcz, Poland

SUMMARY

Background: Homelessness is a form of social pathology, which is for various reasons undesirable and as far as possible limited by efforts such as programmes that assist in transitioning out of homelessness. Because, as time passes, the homeless population undergoes both quantitative and qualitative changes, the process of developing these programmes requires up-to-date information on the extent and profile of this phenomenon that takes into account the characteristics of a given country.

Methods: A 12-month study of homeless individuals (ETHOS categories 1.1, 2.1 and 3.1) was conducted between December 2013 and November 2014 in Olsztyn, Poland. Demographic, sociological, psychological, and medical data were collected.

Results: The study population comprised 98 homeless individuals. The average homeless individual in our study population was a single (93.88%), most commonly divorced (59.18%), alcohol-dependent (78.57%), smoking (84.69%), middle-aged (54.33 years, SD 9.70) male (92.86%) with a low level of education (10.19 years of completed education, SD 3.09). The individual was most commonly an unemployed person suffering profound privation, living off various types of benefits, and spending a significant proportion of his income on alcohol and cigarettes. The person often resigned from social welfare due to his alcohol dependence. Almost a third of the study population (32.65%) declared that they occasionally went hungry. The principal source of food were meals provided by welfare services (89.80%).

Conclusions: Our results indicate that the design of the social welfare system for homeless people should always take into account issues related to alcohol dependence, and each homeless person should be evaluated for possible alcohol dependence. Institutionalised material support provided to homeless individuals should be organised in such a way as to minimise the risk of promoting alcohol and nicotine dependence.

Key words: homelessness, alcohol dependence, demographic analysis, injuries, cardiovascular disease

Address for correspondence: J. Romaszko, University of Warmia and Mazury in Olsztyn, Family Medicine Unit, Warszawska 30, 10-082 Olsztyn, Poland. E-mail: jerzy.romaszko@uwm.edu.pl

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INTRODUCTION

In Poland, as in many other European countries, one of the goals of the government social policy is to reduce homelessness. The process of developing programmes that support transitioning out of homelessness requires information on the extent and profile of this phenomenon. In Poland, quantitative data on homelessness are primarily collected by the Ministry of Labour and Social Policy. These data are collected taking into consideration the seasonal nature of the phenomenon resulting from the climate. The census of the homeless population is taken in the winter, at a prespecified point in time (e.g. in the night of 7th February 2013)

on the entire territory of Poland (which allows to minimise the error of counting the same person more than once, given the frequent migration of the homeless) and involves enumeration of homeless individuals who are staying at night shelters and those who are staying at so-called places unsuitable for habitation (outside night shelters, e.g. in various types of encampments). Thanks to this methodology data on the size of the homeless population and the basic demographic details can be obtained. Due to the ambiguity of the term “homelessness” the European Federation of National Organisations Working with the Homeless (FEANTSA) has developed the European Typology on Homelessness and Housing Exclusion (ETHOS), which is commonly implemented in the

classification of homeless people for research purposes (1). According to this classification, homeless individuals counted during the censuses taken in Poland fall within categories 1.1, 2.1 and 3.1. According to the census taken in December 2012, there were 1,423 homeless individuals on the territory of the Warminsko-Mazurskie Province (a north-eastern region of Poland with the population of 1,446,915). This number is generally stable with an increase of about 50 individuals per year (2). Despite quite precise quantitative data, little is known about who the homeless people are, why they have become homeless, how long they have been homeless, what their needs are, and which of these needs are not being met by the social security system. One must also remember that the homeless population does not only undergo quantitative but also qualitative changes over time (3).

MATERIALS AND METHODS

This study is part of a research project carried out by the Department of Family Medicine, University of Warmia and Mazury in Olsztyn, Poland. The project was entitled “An evaluation of the health status of the homeless population”, and involved a 12-month study (performed between December 2013 and November 2014) of homeless individuals who, during that period, checked in for the night or appeared for another reason at the Sabina Kuszczak Memorial Shelter for Homeless People in Olsztyn, Poland. Olsztyn has a population of approximately 175,000 that, according to the 2014 data published by the Regional Centre for Social Policy, includes 153 homeless people. In terms of the ETHOS typology, these individuals represented three of the 13 operational categories of homelessness with two categories (1.1 and 2.1) comprising the conceptual category of rooflessness and one (3.1) being included in the conceptual category of houselessness. Demographic, sociological, psychological, and medical data were collected from each subject. The study questionnaire was completed personally by project team members and any questions that were unclear to the respondents were explained to them individually. The occupational group was determined according to the International Standard Classification of Occupations (ISCO) developed by the International Labour Organization (ILO) (4). Alcohol dependence was assessed using the Michigan Alcoholism Screening Test (MAST) and a quantitative analysis of alcohol consumption by type of alcoholic drink (beer, wine, liquor, non-beverage alcohol) was performed. The resulting values were converted to the WHO units of alcohol (1 unit = 10 g of pure ethanol), and consumption was expressed in weekly amounts. A total score of five in the MAST test was adopted as the threshold score (5). Hazardous drinking was defined as daily consumption of more than 40 g of pure alcohol for women and 60 g for men (6).

Participation in the study was entirely voluntary. Individuals who were likely to be under the influence of alcohol or other psychoactive substances at the moment of conducting the study assessments were excluded from the study (these individuals were re-invited to attend at a later date). The study protocol was approved by the Bioethics Committee. Each subject was first provided with detailed information on the purpose of the study and then provided written consent to participate in the study. Visually impaired and/or illiterate subjects were read the patient information by the investigator.

Statistical analysis was performed using STATISTICA, version 12 (2014) (StatSoft, Inc.). The mean and the standard deviation were calculated for each study variable. Parametric tests were used for variables meeting the assumptions of normality and homogeneity of variance. The assumption of normality was tested with the Shapiro-Wilk test, and the assumption of homogeneity of variance with the Brown-Forsythe test. Two means were compared with the t-Student test, and three or more means by analysis of variance (ANOVA). Significance between the group means in ANOVA was tested with Fisher's least significant difference (LSD) test. If the assumptions were not met, non-parametric tests were used (the Mann-Whitney test or the Kruskal-Wallis test, and multiple mean rank comparisons for all the groups).

RESULTS

Socioeconomic Characteristics and Health Risk Factors

The study population comprised 98 homeless individuals. The mean age of the study subjects was 54.33 (SD 9.70) years and 92.86% were male. Table 1 provides detailed demographic results.

The average homeless person in our material has completed 10.19 (SD 3.09) year levels of school education and attended school for 10.56 (SD 2.37) years. 22.45% (22/98) of the subjects repeated a grade at least once and 9.47% (9/95) at least twice. The assessment of living conditions, such as monthly income, sources of income and sources of food, is summarised in Table 2.

As many as 58 subjects (59.18%) declared willingness to work for pay. Subjects who declared willingness to work for pay had, on average, completed more years of school education than those who were not willing to work ($p < 0.001$).

Table 1. Demographic results (N=98)

	n	%
Gender		
Male	91	92.86
Female	7	7.14
Marital status		
Divorced	58	59.18
Never married	31	31.63
Married	6	6.12
Widowed	3	3.06
Major group of jobs according to ISCO		
0 (Armed forces occupations)	1	1.02
1 (Managers)	0	0.00
2 (Professionals)	5	5.10
3 (Technicians and associate professionals)	7	7.14
4 (Clerical support workers)	0	0.00
5 (Service and sales workers)	3	3.06
6 (Skilled agricultural, forestry and fishery workers)	1	1.02
7 (Craft and related trades workers)	46	46.94
8 (Plant and machine operators, and assemblers)	4	4.08
9 (Elementary occupations)	31	31.63

Table 2. Living conditions

	n	%
Sources of income		
Social welfare benefits	43	43.88
Waste picking (scrap metal, bottles, tins)	22	22.45
Pension/disability benefit	19	19.39
Casual works	12	12.24
No income	10	10.20
Beggary	5	5.10
Unemployment benefits	3	3.06
Other	2	2.04
Permanent employment	1	1.02
Alimony	1	1.02
Monthly income		
500–1000 PLN	41	41.84
100–500 PLN	28	28.57
< 100 PLN	14	14.29
> 1000 PLN	5	5.10
Source of food		
Paid for with own money	71	72.45
Shelter for homeless people	63	64.29
Charities (e.g. Caritas)	25	25.51
Hard to say	9	9.18
None	5	5.10
Beggary	4	4.08
Waste containers	4	4.08
Proportion of income spent on food		
Most of the income	50	51.02
Half the income	29	29.59
Small part of the income	9	9.18
Don't know	5	5.10
Number of meals a day		
Three	59	60.20
Two	24	24.49
Four or more	11	11.22
One	4	4.08
Do you get enough food?		
Yes	66	67.35
No	18	18.37
Sometimes I do	7	7.14
Sometimes I don't	7	7.14

The percentage value is given in relation to the entire database. Its sum may be less than 100 if the respondent refused to answer, or greater than 100 if multiple answers were provided.

66.33% of the subjects made use of overnight shelters (ETHOS operational category 2.1), 27.00% stayed at homeless hostels (ETHOS operational category 3.1), and 6.12% lived in public spaces (ETHOS operational category 1.1). It should, however, be noted that these categories are not mutually exclusive and an overwhelming majority of night shelter users can periodically become

Table 3. Type and duration of homelessness

	n	%
Place of overnight stay (ETHOS)		
Night shelter (2.1)	65	66.33
Homeless hostel (3.1)	27	27.55
Random places (1.1)	6	6.12
Duration of homelessness		
Up to 3 months	27	27.55
3 months to 1 year	13	13.27
1 to 3 years	15	15.31
3 to 5 years	11	11.22
5 to 10 years	16	16.33
More than 10 years	12	12.24

The percentage value is given in relation to the entire database. Its sum may be less than 100 if the respondent refused to answer the question.

roofless. According to our data, this was the case with 57.14% (56/98) of the subjects. The mean BMI was 23.68 (SD 3.47) kg/m². Smokers accounted for 84.69% of the subjects with the mean exposure of 27.79 (SD 17.16) packet-years. 81.69% (80/98) of the subjects had medical treatment cover (paid by the social security services) and access to a general practitioner (GP).

Table 4. Distribution of BMI categories in the study population

BMI category	kg/m ²	n	%
Normal weight	18.50–24.99	66	68.04
Overweight	≥ 25.00	23	23.71
Underweight	< 18.50	4	4.12
Obesity	≥ 30.00	4	4.12

Table 5. Selected medical conditions and past injuries in the study population

Health issues identified in medical history (n > 2)	n	%
Alcohol dependency managed in a treatment programme	38	39.58
Self-harm	32	32.65
Head injury with loss of consciousness	21	20.41
Epilepsy	19	19.39
Myocardial infarction	10	10.2
Stroke	6	6.12
Tuberculosis	5	5.10
Hypertension	3	3.06

The percentage value is given in relation to the entire database (N=98). The answers were often multiple.

Alcohol

The mean weekly alcohol consumption was 28.39 (SD 53.09) units (the WHO units of alcohol; 1 unit = 10 g of pure ethanol). In terms of specific types of alcoholic drink, the subjects consumed a weekly average of 11.74 (SD 28.98) units of beer, 4.84 (SD 15.12) units of wine and 12.48 (SD 39.73) units of liquor.

Occasional consumption of non-beverage alcohol was declared by 15.53% (17/97) of the subjects. There was a statistically significant correlation between alcohol consumption and age with lower total alcohol consumption ($p=0.004$), lower proportion of beer in the total consumption ($p=0.001$), and less frequent consumption of non-beverage alcohol ($p=0.046$) in the older subjects compared to the younger ones. Subjects considered to be heavy drinkers had no preference for the type of alcoholic drink and showed increased values of consumption for all three types of drink (beer, wine and liquor; $p<0.001$ for each). The MAST criterion of alcohol dependency (a total score of 5 or more) was met in 78.57% (77/98) of the subjects with a further 7.14% (7/98) of the subjects being considered as possibly dependent (a total score of 4). Only 14.29% (14/98) of the subjects did not meet the dependency criterion (a total score of 3 or less). The mean MAST score in the study population was 37.26 (SD 58.11) and as much as 46.97 (SD 62.34) in the subgroup of subjects with a total score of 5 or more. The total MAST score depended for the most part on the response to the final question in the questionnaire about having been arrested in relation to drunk behaviour (coefficient of correlation 0.9666, $p<0.001$). This item, in some of the cases, gave scores exceeding 100. However, even if this question were excluded from the analysis, neither the subjects falling within the MAST category of alcohol dependency nor those considered possibly dependent would have to be re-classified.

Hazardous drinking was declared by 26 subjects but only 27 subjects denied it (they declared never drinking more than 5–6 units of alcohol), while 26 subjects said they drank more than 60 g of alcohol at least once a week. Hazardous drinking was found to be correlated with an increased frequency of self-harm ($p=0.026$).

Our study did not corroborate the hypothesised relationship between episodic consumption of non-beverage alcohol and the MAST score or the weekly alcohol consumption.

38.78% (38/98) of the subjects had a history of participation in a dependency treatment programme at least twice. Of note is the fact that in the subgroup of subjects previously treated for alcohol dependency, the individual total MAST score was invariably 5 or more, while only 50% of the subjects with a total score of 5 or more had a history of dependency treatment. A history of dependency treatment was more common in the younger subjects ($p<0.001$) and subjects considered heavy drinkers based on the total alcohol consumption ($p=0.028$).

Subjects periodically living in the public spaces (ETHOS operational category 1.1) were significantly younger (mean age 52.18 vs. 59.95 years; $p=0.015$) and consumed significantly more alcohol (38.55 vs. 14.94 units per week; $p=0.033$), particularly wine ($p=0.013$), with the term “wine” referring to the cheapest products of the lowest quality.

DISCUSSION

Socioeconomic Characteristics and Health Risk Factors

The average homeless individual in our study population was a single (most commonly divorced), 55-year-old male with alcohol dependency who has completed primary or vocational education. He was typically unemployed, fell within the ISCO major groups of jobs 7 and 9 (craft and related trades workers, and elementary

occupations, respectively) and his source of income consisted of social welfare benefits, so his monthly income was low or very low. Almost 42.86% of the subjects lived below the existential minimum, and more than 84.69% had income levels below the social minimum, 9.18% (9/98) of the subjects were unable to estimate their income at all and only 5.10% (5/98) had a monthly income exceeding 1,000 PLN (about 200 EUR). At the same time, as many as 58 subjects (59.18%) declared willingness to work for pay. This finding suggests that programmes that support transitioning out of homelessness should focus on helping the homeless to find jobs, which can be a good way of their return to society.

Almost a third of the study population (32.65%) declared that they occasionally went hungry. Interestingly, the prevalence of this phenomenon increased with age and did not depend on their income or on completed level of education. As most of the subjects were below the social minimum irrespectively of income, it is very likely that most of their food comes from sources other than shopping. While the principal source of food in our study population were meals provided by welfare services in the broad sense (89.80%), as many as 80.61% (79/98) of the subjects declared that they spent more than half of their income on food and 84.69% (83/98) said they ate at least two meals a day. The inadequate food consumption reported by the subjects was not, however, reflected in the objective assessment of nutritional status. Of the 97 subjects whose weight and height were determined only 4 (4.12%) had a BMI below 18.5 kg/m² and as many as 27 (27.84%) had a BMI of 25 kg/m² or more.

These findings are quite interesting in the context of the high alcohol consumption and large proportion of smokers in the study population, as it prompts the question about the sources of these products. We therefore estimated whether the study findings were economically realistic. The mean alcohol consumption of 28.39 units per week converted into the volume of liquor per month gave a value of 3,400 ml. The cheapest vodka in Poland costs about 30 PLN per litre. This would give a total of about 100 PLN (1 PLN=4.06 EUR) per month, which is quite realistic. Cigarettes appeared to be a larger financial burden. At the level of cigarette consumption estimated in our study at about 0.7 packets daily, the estimated monthly cost would be about 280 PLN. These apparently irrelevant calculations may be important for the planning of the social care model. According to the results of our study, a considerable proportion of funds provided to homeless people is spent on alcohol and cigarettes. It seems that in-kind (food, clothing, medicines) rather than financial is more important for satisfying the fundamental needs of the homeless. On the other hand, lack of any income has been reported to promote chronic homelessness and criminal behaviour (7).

In our study, chronic homelessness, defined as remaining continuously homeless for more than one year, was declared by 57.45% of the subjects who provided response to this question (54/94). This figure is much higher than figures reported by US authors (17.9%) and higher than figures reported in European countries (42% in the Czech Republic, 34% in Hungary, 44% in Finland, 42% in France, and 50% in the Netherlands) (8, 9). A simple comparison of statistics should not, however, obscure the differences stemming from the local context. Veterans account for 19% of the homeless in the United States but were represented by only 1% in our study population. But these are not the only differences. While the authors unanimously emphasised the

considerable predominance of males in the homeless population, which in this respect was similar to ours, there were no ethnic minorities in our study population as opposed to the population investigated in the American study (10, 11). A further difference was the lack of illicit drug users and HIV-positive individuals in our study population. This issue has been analysed and reported previously (12). However, considering the duration of homelessness, we are most likely dealing with an over-representation of chronically homeless individuals, who have “learned” to take advantage of social care services (13).

Four major problems emerge from the data on medical history in our study, namely: injuries, cardiovascular disease, tuberculosis, and psychiatric disorders with alcohol dependency being the predominant issue.

Injuries

A total of 47 subjects had a history of head injury. In 20 subjects (20.41%) the head injury had been accompanied by loss of consciousness. Although this figure largely exceeds that obtained in population studies (8%), it is lower than the figures (40–50%) reported by other authors analysing this particular group of people (14, 15). The rates alone may not be as important as the observation that the mean age of subjects with a history of head injury was significantly lower compared to subjects without a history of head injury (49.14 vs. 56.53 years, $p < 0.001$). These findings appear to contradict the typical epidemiological pattern of traumatic injuries but only until we spot the already reported correlation between the age of the homeless person and alcohol dependence or until we notice that head injury was more prevalent among subjects meeting the criterion of alcohol dependence ($p = 0.035$). The differences become even more striking for head injury accompanied by loss of consciousness, which was much more prevalent in the younger subjects ($p < 0.001$) and more prevalent among the subjects dependent on alcohol ($p = 0.023$). In our study 100% (20/20) of the subjects with a history of head injury accompanied by loss of consciousness met the criterion of alcohol dependency. These subjects more frequently consumed non-beverage alcohol ($p = 0.033$). The association between alcohol consumption and various types of injury is obvious. However, while bearing in mind the tendency to dissimulate the drink problem, the association between the history of head injury with loss of consciousness in this group of subjects and alcohol dependence may be an important factor to be taken into account when developing various social and research questionnaires (16).

Cardiovascular Disease and Hypertension

The two large Polish population studies, WOBASZ and NATPOL 2011, revealed hypertension in more than a third of the adult population (17, 18). The NATPOL PLUS study showed that 57% of the subjects were aware of having hypertension and 46% received antihypertensive treatment (19). In our study, only 3.06% of the subjects were aware of the disease. This figure is five times lower than the population estimate. On the other hand, Lee demonstrated that approximately 15% of homeless patients in Toronto, Canada, had a history of cardiovascular diseases (at almost the same exposure to smoking as subjects in our study (78% vs. 85%), 3% had a history of stroke and 9% had a history of myocardial infarction (20). Hypertension was shown in 35% of the subjects with less than a third of the subjects being aware of the condi-

tion and a fifth receiving treatment for it. In our study, 10.20% of the subjects had a history of myocardial infarction and 6.12% of stroke. It seems that there is a certain logical correspondence between these figures. While antihypertensive treatment requires some awareness, having a heart attack or stroke is not something patients ever forget. The higher prevalence of stroke is most likely a result of non-adherence to antihypertensive treatment, which in our study was twice as prevalent (21). A history of myocardial infarction was more prevalent in subjects with higher BMI values ($p = 0.015$), while no such association was found for a history of stroke. No correlation was found between the number of cigarettes smoked and cardiovascular disease, which may have been due to the very low percentage of non-smokers in the study population.

Tuberculosis

Tuberculosis among the homeless individuals in Poland is a serious epidemiological problem given their considerable migration and staying in crowded places, such as night shelters, especially in winter. Their attitude towards hygiene, hampered access to health services and the reluctance to undergo treatment are further factors of significance (22). We observed a significant correlation between BMI and tuberculosis with subjects with lower BMI values being more likely to receive treatment for tuberculosis ($p = 0.037$). The high incidence of tuberculosis in the homeless population has been reported in numerous papers (23, 24). So we will merely accentuate this serious issue.

Alcohol

The issue of alcohol dependence among the homeless has been addressed in multiple papers and the values reported by other authors were similar to ours (25–27). What interested us the most was not, however, the fact that 78.57% of the homeless individuals in our study were dependent on alcohol, but the correlation between demographic and social factors and alcohol dependence. We considered noteworthy that the younger subjects drank more alcohol and therefore more commonly suffered from the consequences of alcoholism (e.g. epilepsy: $p < 0.001$ in our study). Our results strongly suggest that the need to consume alcohol may be the reason why these subjects periodically move from homeless hostels and overnight shelters to live outdoors (drinking alcohol is officially forbidden on the premises of the hostels and shelters). The mean alcohol consumption in the subgroup of subjects who periodically lived in public spaces was three times higher compared to the residents of the homeless hostel ($p = 0.033$) and their mean age was significantly lower (56.95 vs. 52.18 years, $p = 0.015$). This finding is important for the organisation of social care, as the risk of mortality in the homeless population is 3.5–4.4 fold higher compared to the general population (28). As alcohol is also known to “induce” deaths, especially injury-related deaths (e.g. secondary to hypothermia), it may be hypothesised that some of the consequences of alcoholism could be avoided if appropriate training was provided to overnight shelter staff (29, 30).

CONCLUSIONS

Based on our results the average Polish homeless person can be characterised as follows: a divorced male smoker with alcohol dependence, low educational background, suffering profound

privation and spending a significant proportion of his income on alcohol and cigarettes. Homeless individuals who are dependent on alcohol are more likely to refuse support from welfare institutions and to become roofless. Evaluation for alcohol dependence should be carried out in all homeless persons, particularly in those with a history of head injury accompanied by loss of consciousness. The prevalence of cardiovascular disease with hypertension in particular seems underestimated in this group and further research is necessary to reveal the real magnitude of the problem. Our study has shown that tuberculosis continues to be a serious health problem in this group of people, who are more reluctant than others to receive treatment. Notably, as many as 59% declared willingness to work for pay. Including efforts to help the homeless find employment into programmes that support transitioning out of homelessness may be of benefit not only to the homeless but to the society as a whole, as it might suppress the negative consequences of homelessness, especially chronic homelessness.

The results of our study indicate that the design of the social welfare system for homeless people should always take into account issues related to alcohol dependence. Each homeless person should therefore be evaluated for possible alcohol dependence and institutionalised material support provided to homeless individuals should be organised in such a way to minimise the risk of promoting alcohol and nicotine dependence.

Conflict of Interests

None declared

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