

Alcohol Related Harm: Knowledge Assessment of Medical and Nursing Staff in a General Hospital

Sol Jaworowski, MBBS FRANZCP,^{1*} David Raveh-Brawer, MD,² Cornelius Gropp, MD,¹

Paul S. Haber, MBBS, MD, FRACP, FACHAM,³ Jean-Louis Golmard, MD, PhD,⁴ and Joseph Mergui, MD^{1*}

¹ Department of Consultation and Liaison Psychiatry, Shaare Zedek Medical Center, Hebrew University, Jerusalem, Israel

² Unit of Infectious Diseases, Shaare Zedek Medical Center, Hebrew University, Jerusalem, Israel

³ Drug Health Services, Royal Prince Alfred Hospital, Camperdown NSW and University of Sydney, Australia

⁴ Biostatistics Unit Hopital Pitie-Salpetriere AP-HP, Paris, France

ABSTRACT

Background: The prevalence of alcohol related harm (ARH) in Israel has traditionally been low. The lack of familiarity with ARH may derive from the fact that in the past there was limited clinical exposure to these harms. However, ARH is becoming more common in Israel but it is unclear whether the medical and nursing workforce's knowledge is adequate to manage these problems. Our main objective was to assess knowledge regarding ARH among medical and nursing staff (MNS) in an Israeli university affiliated general hospital. We also aimed to compare knowledge of different MNS groups

Methods: One hundred and twenty-seven MNS including consultants (senior physicians), residents, interns and nursing staff completed the Knowledge of Psychiatric Aspects of Alcohol Questionnaire (KPAAQ), a validated measure of knowledge concerning ARH comprised of five categories.

Results: There was no significant difference between the four MNS groups in overall mean KPAAQ scores that varied from 45% (nurses) to 54% (interns). However, direct comparisons indicate that physicians scored higher than nurses ($p=0.02$). overall. The mean score for the KPAAQ category "alcohol withdrawal syndrome" was below 40% for all MNS groups. Physicians scored significantly higher than nursing staff ($p=0.005$). All MNS mean scores were greater than 63% for the category "alcohol in pregnancy." This was the highest category score.

Conclusions: Assessment of knowledge regarding ARH among MNS in a general hospital with a standardized instrument demonstrated no significant difference in knowledge of ARH among nursing staff, interns, residents and consultants apart from knowledge about alcohol withdrawal. However, the overall score of the physicians as a whole was significantly higher than the nursing group. These findings suggest a need to implement educational interventions in MNS to increase knowledge of ARH so as to promote the provision of brief interventions for patients with ARH.

INTRODUCTION

Alcohol related harm (ARH) refers to the wide variety of health and social problems, to the drinker and others, at individual and collective levels, for which alcohol plays a causal role (1).

In 2012, about 3.3 million deaths or 5.9% of all global deaths were attributable to alcohol consumption (2). About one third of these alcohol related deaths resulted from cardiovascular diseases and diabetes; 17.1% were caused by injuries, 16.2% were due to gastrointestinal diseases, particularly liver cirrhosis, and 12.5% were due to cancers.

Alcohol consumption in Israeli society was relatively low by Western standards until 1990, but Israel is no lon-

*The first and the last authors contributed equally to this study

Address for Correspondence: ✉ Sol Jaworowski, MBBS, FRANZCP, Department of Consultation and Liaison Psychiatry, Shaare Zedek Medical Center, POB 3235, Jerusalem 91031, Israel 📧 solj@szmc.org.il

ger immune to the deleterious outcomes of alcohol misuse (3): in the national school survey (grades 7–12) conducted in 2009 by the Israel Drug and Alcohol Authority, about 40% of adolescents reported drinking alcohol in the past month (apart from religious ceremonies), and one third of the adolescent population had become inebriated at least once in the past year (4).

In comparison, 70% of 15-16 year old youth in the United Kingdom (U.K.) and 33% of similarly aged young persons in the U.S. reported drinking alcohol over the past month. Thirty-three percent of U.K. youth reported becoming inebriated over the past month while 18% of U.S. youth reported becoming inebriated over the same time period (5).

Particularly troubling patterns of alcohol consumption were seen among immigrant youth from the Former Soviet Union (6) and Ethiopia (7) for whom the challenges of acculturation and integration into Israeli society, coupled with typical adolescent turmoil, contribute to a greater likelihood of social maladjustment and the development of risk-taking behavior (8). Indeed, evidence from various sources suggests that the proportion of road accidents related to alcohol is growing (9). These findings indicate dangerous drinking patterns common among adolescents (including pre-teens) and adults, in particular when mixing alcohol, drugs and driving.

Prevalence of alcohol related harm (ARH) in Israel has traditionally been low. The lack of familiarity with ARH may derive from the fact that in the past there was limited clinical exposure to these disorders. Although alcohol use in Israel has increased by more than 25% over the last 20 years (10), it is uncertain whether the medical and nursing workforce is adequately prepared to manage the impact of harmful use of alcohol as a result of this increased consumption.

The main objective of our study was to assess the knowledge about ARH among nursing and medical staff of varying levels of seniority (consultants, residents, interns).

METHODS

One hundred and four medical staff: 23 interns, 38 residents, 43 consultants (senior physicians) and 23 nurses were recruited between August 1, 2011 and December 31, 2013 from various departments in a thousand bed general hospital affiliated with the Hebrew University in Jerusalem. The study was approved by the hospital ethics committee as conforming to the Declaration of Helsinki.

Participating departments (Emergency Room, Internal Medicine, Geriatrics, Pediatrics and Surgery)

were selected on the basis of their likelihood of treating patients with ARH. In each department, medical and nursing staff were invited to complete the Knowledge of Psychiatric Aspects of Alcohol Questionnaire (KPAAQ) (11) before a lecture was given by one of the authors (SJ) on the topic of ARH. In all cases, staff anonymously completed the KPAAQ in a paper and pencil format and the data were kept confidential. There was a good level of compliance in completing the questionnaire (80%).

We used the KPAAQ whose reliability and validity were established in a previous study (11) for the assessment of knowledge among medical students in various aspects of alcohol use disorder. This tool is based in part on the Student Alcohol Questionnaire (12, 13). The KPAAQ combines clinical and non-clinical material about alcohol and requires approximately ten minutes to complete. It consists of 50 questions that address six categories: metabolism of alcohol, short-term effect of alcohol, long-term effect of alcohol, alcohol use disorder, alcohol withdrawal and alcohol and pregnancy. The respondent is requested to choose one of three alternatives for each question: true, false or don't know. This format encourages the student to acknowledge areas of deficient knowledge without having to guess as a default option. This is a significant advantage because the deficiencies of any curriculum are best identified when a student is able to indicate that he or she does not know the material. This may direct teaching staff to focus on topics that are poorly understood and perhaps present material in a more effective fashion. Each response to a question of the KPAAQ was assessed as to whether it was correct or not yielding a possible range from 0 to 100 points.

STATISTICAL ANALYSIS

Descriptive statistics of the scores use means and 95% confidence intervals. Since the main objective of the study was to estimate mean scores, the number of subjects was computed for reaching a precision, given by the half-size of the 95% confidence intervals of 10%. Since most of the expected standard deviations of the scores were lower than 25, a number of 23 subjects by group were sufficient to reach a maximum precision of 10%. Comparisons of score means among the four groups of individuals were performed by unbalanced ANOVAs followed by Tukey tests for pair-wise comparisons when the global test was significant. Although the research design favors the use of one-way ANOVA, given that there were some missing data for each score, thereby making the ANOVA “unbalanced,” the unbalanced ANOVAs were chosen as an appropriate tool. Comparisons between the nursing group and the physician group were

assessed by students' t tests. Computations were performed using the SAS V9.3 statistical package (14).

RESULTS

The mean KPAAQ scores and their 95% confidence intervals are displayed in Table 1.

Between-group comparisons results are described in Table 1 and Figure 1. The overall level of knowledge as assessed by KPAAQ scores was below 55% among all groups.

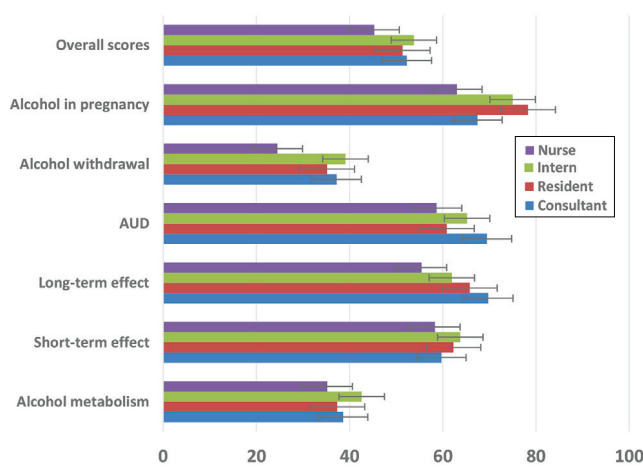
The KPAAQ mean scores for the Alcohol Withdrawal category were below 40% and below 44% for Alcohol Metabolism. All MNS mean scores were greater than 63% for the category "alcohol in pregnancy." This was the highest category score.

When overall KPAAQ scores between consultants, residents, interns and nursing staff were compared, no pair-

Table 1. KPAAQ scores of medical and nursing staff according to category: Means and Confidence Intervals

KPAAQ category	Nurses (n=23)	Interns (n=23)	Residents (n=38)	Consultants (n=43)
Metabolism of alcohol	35 [29-41]	43 [37-49]	37 [32-42]	39 [33-44]
Short-term effect of alcohol	58 [52-65]	64 [58-69]	62 [58-67]	60 [54-65]
Long-term effect of alcohol	55 [46-65]	62 [52-72]	66 [57-75]	70 [62-77]
Alcohol use disorder	59 [52-66]	65 [58-73]	61 [55-67]	70 [64-75]
Alcohol withdrawal	25 [16-33]	39 [32-46]	35 [28-42]	37 [32-42]
Alcohol use in pregnancy	63 [53-73]	75 [70-80]	78 [72-85]	67 [58-77]
Overall scores	45 [40-50]	54 [50-58]	51 [47-56]	52 [47-57]

Figure 1. KPAAQ scores of medical and nursing staff according to category



AUD: alcohol use disorder

wise comparison reached significance with the Tukey tests.

The only significant differences in category scores were in favor of consultants and interns versus nurses for the "alcohol withdrawal" category (p=0.05).

Direct comparisons revealed a significant difference for overall scores in favor of physicians (p=0.02). Furthermore, physicians scored higher than nurses for knowledge on alcohol withdrawal syndrome (p=0.005).

DISCUSSION

Seniority in mental health has been related to the perception of competence and dangerousness of vignettes of persons suffering from depression and schizophrenia (15). Compared with case managers, the program managers, psychiatric nurses and psychiatrists were more likely to perceive that persons described as suffering from depression were competent. Providers with more total years of experience in mental health settings were less likely to perceive that persons with depression were incompetent and dangerous and were less likely to desire social distance from them.

Seniority in emergency room physicians has been related to clinical performance. Compared with emergency room physicians with less than 10 years of work experience, senior emergency room physicians take more time to order prescriptions and patient disposition, use fewer diagnostic investigations, particularly for non-urgent patients, and are associated with a lower emergency department mortality rate (16).

General hospital staff should be sufficiently well informed about the features of ARH in order to screen and diagnose this condition in a patient hospitalized for a medical complication of harmful use of alcohol. However, the findings of our study suggest that the majority of participating MNS regardless of seniority are ill prepared to recognize these alcohol related conditions in practice. The motivation of such a patient to consider reducing his/

Table 2. Comparison of KPAAQ scores of physicians and nurses according to category: Means ± Standard Deviation

KPAAQ category	Physicians n=104	Nurses n=23	P value
Metabolism of alcohol	39±17	35±15	0.32 (NS)
Short-term effect of alcohol	62±16	58±15	0.39 (NS)
Long-term effect of alcohol	67±26	55±23	0.06 (NS)
Alcohol use disorder	65±20	59±17	0.13 (NS)
Alcohol withdrawal	37±18	25±20	0.005
Alcohol use in pregnancy	73±25	63±24	0.08 (NS)
Overall scores	52±13	45±13	0.02

her alcohol use has been related to the degree to which the patient's illness is attributed to alcohol use both by themselves and by their clinicians (17). Alcohol use disorders are commonly under-diagnosed in hospital settings, particularly in the older patients (18), so the clinical team has to be well trained and vigilant. The findings of our study have significant implications for education and training of MNS in Israel regarding ARH.

The general hospital may offer an opportunity for brief interventions for ARH. Their efficacy in the emergency room is reported in the literature (19, 20). Nurses have the closest contact with the hospitalized patient and are therefore well placed to provide brief interventions to change patterns of harmful drinking. The role of medical ward nurses' brief intervention includes screening the patients' weekly alcohol consumption using a drinking diary (21). Patients who reported excessive drinking were referred to a nurse counselor for an intervention based on the change model (22) which assists the patient to progress along the stages of change using tools such as the readiness to change ruler and the agenda setting chart.

The nurse counselor also has a role in developing an alcohol awareness program for nursing staff and medical staff in the general hospital ward that includes increasing the staff understanding of the importance in screening all patients for alcohol problems, recording the weekly consumption of standard drinks, increasing clinical skills in responding to someone with an alcohol related problem and gaining knowledge of available specialist alcohol services.

Provider training in patient centered alcohol counseling for MNS has also been described (23). The program consisted of a two-hour group training session and one to two short individual skill training sessions. Knowledge of problem drinking, self-efficacy assessment and counseling skills were assessed prior to and one month after the completion of the training. A significant improvement in these variables was described.

Although there have been assessments of knowledge of alcohol in general practice settings (24), in primary care nursing staff (25), in residents (26) and medical students (27), to the best of our knowledge there has been no clinically based assessment of knowledge of alcohol in the general hospital setting comparing consultants, residents, interns and nursing staff using a validated questionnaire such as the KPAAQ.

A previous study in a general hospital (28), that assessed medical and nursing staff knowledge of ARH, focused only on knowledge of staff to standard drink measures and recommended drinking limits. That study did not assess

the broader aspects of ARH as reflected in the KPAAQ that may be relevant to identifying harmful use of alcohol in clinical practice.

It is encouraging that the category "alcohol in pregnancy" received scores over 63 % by all the MNS given the past reported deficiency of knowledge of this topic among MNS in Israel (29). However, of concern is the level of knowledge of alcohol withdrawal syndrome among all the MNS who participated in the study. In a busy general hospital one would expect MNS to be aware of this disorder in order to diagnose this sometimes life-threatening condition among inpatients. Similar difficulties in diagnosing this syndrome have been described in the literature (30).

The overall level of knowledge of consultants together with the lack of significant difference of knowledge between them and all other groups raise a concern that consultants were not sufficiently familiar with ARH in order to teach and provide leadership to more junior staff in their medical ward for screening and providing brief interventions for ARH. The lack of a positive mentor role in treating these patients may negatively affect the willingness of medical and nursing staff to learn about ARH or provide these patients with brief interventions. The important mentor role of hospital consultants in motivating other MNS to take on the role of treating alcohol and substance abuse has been described (31). In our study, one explanation about the lack of significant difference between consultants and other physicians may be that the junior physicians were more likely to have been educated in ARH during their undergraduate training.

Minimizing deficits in alcohol related knowledge amongst MNS have been described among physicians and nursing staff (24), but motivating MNS to routinely screen and provide brief interventions for their patients remains an ongoing challenge.

Perhaps the role of "learning by doing" implementation studies where primary care staff agree to perform screening and brief intervention after a training session (32) offers an opportunity to foster a community of practice (33) and therapeutic commitment (34) which have been identified to be associated with changes in attitudes, knowledge, skills and behavior among MNS. In this way, theoretical knowledge of ARH by MNS becomes incorporated into best clinical practice.

LIMITATIONS OF THE STUDY

Data from a single medical institution were used, therefore limiting the generalization of the findings. There is a

relatively small sample size of MNS assessed in the study so these results should be seen as preliminary.

CONCLUSIONS

Use of standardized outcome measures of the critical educational domains of knowledge has been recommended (35) for enhancing the evidence base in alcohol and substance abuse focused medical education. In our study, KPAAQ scores indicated that overall knowledge regarding ARH was low across different MNS groups. Though further research is needed to determine whether these knowledge deficits exist in other hospitals, applying appropriate educational measures seems imminent. This should include theoretical knowledge of ARH which may lead to the acquisition of practical skills for MNS to screen, diagnose and offer brief interventions to their patients suffering from harmful drinking.

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