

Preliminary Results of a Controlled Educational Intervention on Alcohol Related Harm Among Medical Students with a 12-month Follow-up

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ABSTRACT

Background: There are no studies that use validated questionnaires on Alcohol Related Harm (ARH) in order to assess retention of educational programs among medical students. Objective of study to assess retention of an educational inter-vention on ARH among medical students.

Method: Seventeen fifth year medical students were assessed with the Knowledge of Psychiatric Aspects of Alcohol Questionnaire (KPAAQ) 12 months after an educational intervention on ARH and compared with a control group.

Results: Significant retention was found in the study group.

Conclusions: This preliminary research is the first controlled study on medical student retention of an ARH educational intervention using a validated questionnaire.

INTRODUCTION

Alcohol use in Israel has increased by more than 25% over the last 20 years (1). Particularly troubling patterns of alcohol consumption have been seen among immigrant youth from the Former Soviet Union (2) and Ethiopia (3) 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 risk-taking behavior (4).

Alcohol use disorders are overrepresented in primary care and emergency departments so these settings are important sites for screening and offering brief interventions (5- 9).

There is a lack of a standardized teaching program in the field of substance use disorders in the Israeli medical student curriculum (10) with the need for training in addiction medicine throughout all phases of medical school such as the U.K. St. George's project that has promoted standardized Addiction Medicine education in 19 medical schools (11).

The rationale for the educational intervention on ARH used in the study is based on a bio-psycho-social approach to clinical practice (12) which requires an integration of knowledge, attitudes and clinical skills.

In a review of undergraduate medical education in alcohol and substance abuse (13), the authors recommended controlled and replicable studies in order to assess long-term efficacy studies of educational intervention over at least 12 months and the use of standardized instruments.

Various tools for assessing undergraduate medical education about alcohol are described in the literature (14-17), although none of these studies used validated instruments for measuring knowledge about alcohol.

In this study we wanted to determine whether an educational intervention on Alcohol Related Harm (ARH), using a validated questionnaire for fourth year medical students, would be retained after 12 months.

METHODS

This study was conducted in one of Israel's medical centers. Between August 1, 2011-August 1, 2012, 56 fourth year medi-

cal students were recruited during their internal medicine rotation at the medical center to an educational intervention on harmful use of alcohol. Before the educational intervention, the students completed the Knowledge of Psychiatric Aspects of Alcohol Questionnaire (KPAAQ) whose reliability and validity were established in a previous study (18). This tool is based in part on the Student Alcohol Questionnaire (19) which has less emphasis on clinical aspects of ARH, such as withdrawal syndromes. The KPAAQ requires approximately 10 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 intervention, lasting three and half hours, consisted of:

- A power point lecture on Alcohol Use Disorder to groups of 12 students or less.
- Immediately after the lecture an active member of Alcoholics Anonymous spoke to the students about his past Alcohol Use Disorder, wherever possible relating his story to the material in the lecture.
- After two weeks, role play exercises involving the assessment of a female teenager (played by one of the students) who was brought to the primary care physician by her
- parent because of a concern that she was suffering from ARH.

The learning objectives of the role play exercise were:

- To review theoretical subjects discussed in the lecture.
- To practice talking to a young person about his or her alcohol use including the use of the Alcohol Use Disorder Identification Test (20).
- To practice motivational interviewing for harmful use of alcohol as described by the FRAMES model (21). This model consists of the following principles: Feedback, Responsibility, Advice, Menu of Options, Empathy and Self-efficacy.

One year later, 103 fifth year medical students who were starting their psychiatric rotation at the medical center completed the KPAAQ. Seventeen of these 103 students had participated in our educational intervention on ARH 12 months earlier during their fourth year rotation in internal medicine at the hospital. The remaining 86 students who did not participate in the educational intervention served as a control group in the study.

We compared KPAAQ scores of the 17 fourth year students before the intervention and one year later in their fifth year in order to assess retention. We also com-

pared KPAAQ scores of these 17 fifth year students who participated in the intervention with the 86 fifth year control group who did not participate in the intervention. In order to exclude the possibility of a difference between the pre-intervention scores in the study group and the control group, we compared the KPAAQ scores of the control group of 86 students in year five who did not participate in the educational intervention with the pre-intervention scores of the 17 students in year four.

The study was approved by the hospital ethics committee.

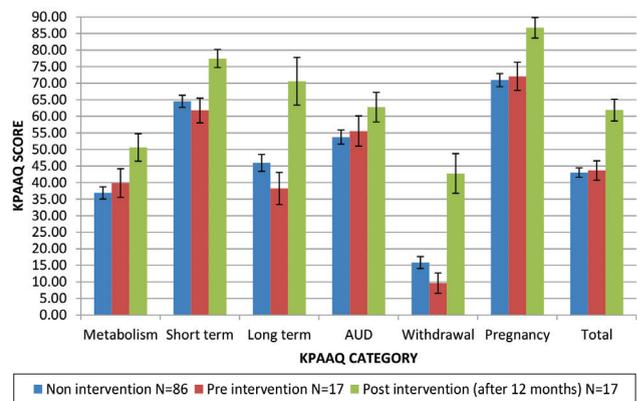
STATISTICAL ANALYSIS

Descriptive statistics used means ± SD. Comparisons of the pre-intervention scores means and the post- intervention scores means were performed by paired student’s t tests. Comparisons of the previous means and the non-intervention group scores means were performed by unpaired student’s t tests. All tests were two-tailed, with a p-value lower than 0.05 considered as significant. Computations were performed by the SAS V9.3 statistical package (22).

RESULTS

There was a significant increase in overall KPAAQ scores for the 17 students (Figure 1) in year five 12 months after they had participated in the educational intervention in year four : 61.9 ± 13.6 compared to 43.6 ± 12.0 (P = 0.0006). This difference was most marked in the KPAAQ category of alcohol withdrawal: 42.7 ± 24.7 for post-intervention compared to 9.6 ± 12.6 for pre-intervention (P < 0.0001).

Figure 1. Comparison of KPAAQ scores between non-intervention, pre-intervention and post-intervention groups of students



KPAAQ: Knowledge of Psychiatric Aspects of Alcohol Questionnaire. Metabolism: metabolism of alcohol; Short-term: short-term effect of alcohol; Long-term: long-term effect of alcohol; AUD: alcohol use disorder; Withdrawal: alcohol withdrawal syndrome; Pregnancy: alcohol and pregnancy; Total: overall score.

The overall KPAAQ scores of the post-intervention group were significantly higher than the scores of the control group ($P < 0.0001$). There was no statistically significant difference between the year four pre-intervention group scores and the year five control group scores in all the categories.

The control year five students did not acquire this knowledge spontaneously, indicating specific teaching was needed for this topic.

DISCUSSION

The efficacy of the educational intervention is suggested by the following results:

1. There was a significant increase in the KPAAQ score among the study group of 17 fifth year students compared to the pre-intervention score of this group of students and this increase was observed 12 months following the intervention. Since the sample size of 17 students is small these results should be seen as preliminary.
2. The KPAAQ score of the study group prior to the intervention was not statistically different from the KPAAQ score of the control group of 86 students. The study group score was significantly higher than the control group score 12 months after the intervention.

CONCLUSIONS

In this preliminary study we suggest that an educational intervention on ARH in fourth year medical students was retained after 12 months using a validated questionnaire (KPAAQ). Moreover, the students in the intervention group scored significantly higher than the students in the control group who did not participate in the educational intervention.

LIMITATIONS

Since the size of the medical students involved in the study is small, the results of this study should be seen as only preliminary. There was no quantitative assessment of the students' attitudes or skills in interviewing persons with ARH.

Future research should use validated tools in order to identify whether an educational intervention regarding alcohol during medical training has an ongoing impact on students' knowledge and clinical skills as doctors working with patients suffering from ARH.

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