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Effects of teaching critical thinking on medical students' skills: results from a three-year longitudinal study

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Background. Integration of critical thinking into medical school programs is crucial in order to ensure that future physicians are able to put their knowledge into practice (1). Research indicates that in most medical curricula there is a lack of emphasis on improving the critical thinking ability (2). The aims of the study was to evaluate the effects of holding a longitudinal critical thinking course on medical students' skills at Tehran University of Medical Sciences in Iran.

Summary of work. A prospective, one-group, longitudinal pretest–posttest design was used with a convenience sample of 103 students; 91 medical students participated two times in completing a questionnaire each March from 2011 to 2014. The valid responses rate was 57%. So, sixty-eight percent of students were excluded because of deciding not to participate in the study or not completing both of the tests. The California Critical Thinking Skill Test (CCTST) was administered as pretest and posttest. Participants were asked to complete the CCTST in the week before their first educational session and posttest data were collected 8 weeks after the program.

Summary of results. Ninety-one medical students with the mean age of 20 ± 2.8 years participated in this study. Forty-three of them were male (%47.3) and 48 others were female (%52.7). The highest score in both pre and post-test was for deductive part. While the lowest mark in both is for analysis. We have positive difference in in all the fields but the difference is not significantly meaningful for inference and deductive part (P-value= 0.287 and 0.421). We found no significant difference between the scores of male and female participants in any of the fields (P=0.77).

Discussion & Conclusion. There was no significant difference between the scores in male and female students. Students performed the best in the deductive part of the questionnaire and their weakest skill was analysis in both pre- and post-tests. A similar study showed the same results, indicating no difference between genders in total scores and a stronger deductive skill among others (3).

Take home message. Teaching clinical thinking to undergraduate medical students could improve their critical thinking skills especially in analysis, inductive and evaluation parts.

References.

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Implementation of transition course to dissecting room: a step towards introducing of "Principles of professional behaviors and respect to cadavers" to fresh medical students

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Background: Despite the importance of cadaveric dissection in teaching medical students, it has always been associated with many challenges, including concerns about incidence of non-professional behaviors in fresh students. The transition course to dissecting room was conducted to facilitate the adaptation of medical students to deal with the cadaver.

Summary of work: The program was designed by conducting several meetings with experts from various fields of anatomy, medical ethics and medical education, as well as reviewing literature. The program began with an initial explanation of the program objectives. After showing the film, points related to principles of ethical and professional behavior related to presence in dissecting room were discussed and analyzed by experts. In order to provide an opportunity to contemplate students' views, some of the experiences and opinions of the students participating in the program was presented and reflected. At the end, a valid and reliable questionnaire ($r=0.89$) was completed.

Summary of results: Of the 193 questionnaires distributed, 129 were filled; mean age 18.15 years, 49.2% female. In general, 93.8% of students believed that the program provided a good opportunity to think and reflect on the principles of professional behavior in cadaveric dissection. 89.9% of students acknowledged that the program had been effective in increasing their motives to respect those who donated their bodies to science. In addition, the results of the survey showed that 92.2% of the students believed that they would use the acquired ethical points of this program in the future.

Discussion & Conclusion: Findings indicate that it is necessary to describe the principles and rules of professional behavior in the dissection sessions for fresh medical students. In other studies it is also pointed that it is important and necessary to hold sessions to prepare students to deal with

the cadaver. Another study showed that the majority of students believed preparation sessions were very effective to overcome psychosocial issues.

Take home message: Transition course to dissecting room could change fresh medical students' attitudes regarding observance ethical and professional behavior related to presence in dissecting rooms.