Effect of Workshop Education on the Ethical Insight and Safety Principles of Working with Cadaver among the freshmen Medical Students

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**Background**:

Cadaver belongs to an individual who donated his/her body for enhancement of medicine education and training the future physicians. The aim of this study is to hold a workshop to improve the ethics and safety of working with a cadaver.

This interventional study was conducted on 37 freshmen medicine students in a form of a workshop on the ethics and safety principles of working with a cadaver. After designing a questionnaire on the ethical insight and safety principles of working with cadaver, a 3-hour workshop was held by a medical ethics expert. Scenario and question-answer methods were used in this workshop. 2 weeks later, before entering to the dissection hall, the questionnaires were again distributed among the participants. The data were analyzed by paired-T test using SPSS 21 software.

According to the results, the ethical insight mean score increased from 56.947.5 (before workshop) to 82.55.79 (after workshop) (P=0.001). The insight on the safety of working with cadaver changed from 21.272.36 to 21.411.76 which did not show a significant variation (P=0.767).

**Discussion and conclusion:**

Regarding the effectiveness of the workshop training in enhancement of the students’ believes to ethic points of working with a cadaver, it is recommended to hold a workshop to teach the ethical points of working with the cadaver before the students’ entrance to the dissection hall.

**Introduction**

Anatomy refers to the knowledge on the different parts of the body and their structural relationships. Understanding on the human diseases requires a comprehensive knowledge of his body. Cadaver has been the oldest and most basic source of morphological details of human anatomy for a long time1,2 . Despite the computer-aided methods to train the MDs and surgeons3, cadavers have remained the best educational method4 . Establishment of values such as respect, responsibility and appreciation can never be achieved by use of computer-based tools to teach the human anatomy5 . The human cadavers should be respected as the first patients of the medicine students. Kindness is one of the most important parts of the professional commitment which can be learnt by cadavers. Professional commitment should remind the student that the cadaver belongs to an individual who donated his/her body to improve the medical science and train the future physicians. Therefore, the students must appreciate such a generosity and consider these cadavers as their silent teachers6 . Despite the religious principles on the human body dignity in Islam, a limited number of studies have addressed this issue. It seems that this topic has been neglected in Iranian medical education and we sometimes observe some challenges in this field. For example, if it is required to conduct an invasive act on the cadaver, the students must know that these cadavers are their silent teachers who were one day alive and the love of somebodies; therefore, they should be treated with respect the same as an alive patient7. Cadaver autopsy helps the students to develop ethical insights, kindness and care for human beings which are all among the perquisites of being a professional doctor. Therefore, the students’ sense of kindness toward the cadavers should be excited by simple techniques through patient-oriented approaches and educating the humanitarian values. In this regard, the present study is aimed to determine the effect of education on ethical insight and safety principles of working with cadavers among the medicine students of Arak University of Medical sciences

**Method**:

This before-after interventional study was conducted on 37 freshmen students in the form of a workshop on ethics and safety principles of working with cadavers. After obtaining the approval of ethics council of Arak University of Medical Sciences (ethics code: IR.ARAKMU.REC.1397.85), the initial version of the questionnaire on the ethics and safety principles of working with cadaver was edited by a team composed on anatomy and ethics experts. First, 30 questions were prepared, then, they were decreased to 27 questions designed in Likert scale from completely agreed to completely disagreed in 2 sections: safety (7 questions) and ethics (20 questions). After confirming the reliability and validity of the questionnaire content by the experts, its internal correlation was evaluated by Cronbach's alpha test on 30 medicine students in their second year of study whose coefficient was 0.7 which was acceptable. The questionnaires were filled before the workshop. Then a 3-hour workshop was held on the ethics and safety principles of working with cadavers by a medical ethics expert. First, the concepts such as kindness and respect were explained; then using scenario and question-answer methods, group discussions were made to change the students’ insight. Before entering to the dissection hall and two weeks after the workshop, the questionnaires were again distributed among the participants. The data were analyzed by paired t Test using SPSS 21 software.

**Results**

The mean age of the students was 201.3; 60% of them were male and the remaining 40% were female. The ethical insight increased from 56.947.5 (before workshop) to 82.55.79 (after workshop) (P=0.001). The insight on the safety of working with cadaver is presented in Table 1.

Considering some of the questionnaire on the ethical insight the results showed that the question of “Is imaging for educational purposes, an ethical act?” increased from 63.9 (23) (before the workshop) to 81.6%. Moreover, before the workshop, 28 students (7.8%) considered the cadaver dissection as an entertaining task while 0ne of them (2.8%) agreed with this statement after the intervention. Before the workshop, 21 (58.3%) students agreed that the cadaver should be completely naked during the education while the number of these students declined to 5 (13.9%) after the intervention. Before the intervention, 11 (30.6%) students agreed that the cadaver is like a teacher helping in their education while this statics reached to 15 (41.7%) after the workshop. Before the workshop 12 participants (33.3%) agreed that any displacement of the cadaver should be conducted with respect and dignity protection; while 20 (55.6%) of the students agreed on that after the workshop. Considering the statement “doing amusing acts with the cadaver is against the ethics”, 5.6% agreeing participants before the workshop increased to 75% after that. Concerning the safety points, 6 (16.6%) of the students disagreed that jewelries are not forbidden in dissection hall which reached to 14 (38.8%) after the education. Before the workshop, 3 (8.3%) of them agreed that use of formalin does not prevent from diseases which increased to 5 (13.9%) after the intervention.

**Discussion**:

This study was conducted to determine the effect of workshop education on the ethical and safety insights of working with cadavers among the freshmen medical students. As no study has addressed the effect of the educational intervention about the ethical and safety principals of working with cadavers, only descriptive and review studies can be mentioned in this regard. The results of this study showed that this educational workshop managed to affect the ethical insights of working with a cadaver; but it did not influence the safety issues. This showed that the students were sensitive on their safety even before the intervention and they believed that they should comply with the safety principles for their own safety; however, they need education on the ethical aspects of working with a cadaver.

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Scientific board members of the universities are the role models of the students leading them to positive or negative attitudes. Evidences have shown that the educators learn more professional ethics from their role models and hence these role models can deeply affect the students’ behavior9. The present studies have shown that education can improve the belief of respect to the cadaver. Respect to the cadaver is the same of respecting the passed away individual; therefore, any disrespect to the cadaver is disrespecting his/her relatives. In a study, 82% of the students agreed that the dissected cadaver was a human just like them and 87% of them respected the cadaver2 [9]. From the religious point of view, disrespect to the cadaver not only means improper ethical insight to the passed away person, but it also implies the disrespect to human9. In terms of safety of working with the cadaver, the studies suggested that the students should wear gloves and don’t apply contact lens in the dissection hall, do not bring their bags to the hall and avoid eating and drinking10,11. In the present study, 6 (16.6%) of the students disagreed that jewelries are not forbidden in dissection hall which reached to 14 (38.8%) after the education. Before the workshop, 3 (8.3%) of them agreed that use of formalin does not prevent from diseases which increased to 5 (13.9%) after the intervention.

**Conclusion**

As the workshop training was effective in enhancing the students’ believes to the ethical points of working with the cadaver, the authors recommend that the anatomy professors in cooperation with the ethics experts conduct some educational and awareness intervention to enhance the ethical insight of the students toward working with cadavers. Moreover, some ethical guidelines and standards should be considered in their curriculum regarding working with cadavers. Furthermore, ethical oath before dissection can be helpful in protecting from the dignity of the cadaver.

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**Conflict interest**: There is no conflict of interests.

Ethics

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