Original Article

Ethics in Pharmacy Curriculum for Undergraduate Pharmacy Students: A Needs Assessment Study

Pooneh Salari BCPS•[1], Mohammad Abdollahi PhD[2,3]

Abstract

Introduction: Recent advances in pharmacy practice have created serious ethical challenges for the pharmacists. Pursuing a new philosophy of practice is required to overcome these challenges and optimize the standard of care. In this regard, the current ethics guideline in the Pharmacy curriculum used in Tehran University of Medical Sciences, does not provide a fully comprehensive understanding of the issue. Therefore, the aim of the present study was to revise the current curriculum based on a needs assessment study.

Methods: In this study, a two-part questionnaire was presented to pharmacists to obtain their views on the importance of topics in their daily routine practice. Part one of the questionnaire consisted of demographic data and part two of 23 topics in pharmacy ethics.

Results: Out of a total of 200 questionnaires, 158 questionnaires were returned. We reached consensus on 24 topics, of which 8 topics gained a score of higher than 4 (the highest score was considered to be 5) and the rest obtained a score of 3 and higher. The highest score pertained to the pharmacists' relationship with patients, awareness of the rules and regulations, and medication error.

Conclusion: Based on the results, a revised curriculum was designed for ethics in pharmacy. It seems that the designed curriculum is context-based and will develop appropriate educational material regarding pharmacists' requirements in daily practice. Consideration of interactive methods for teaching the curriculum is highly recommended.

Keywords: Needs assessment, pharmacy ethics, pharmacy ethics education

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Introduction

As professionals, pharmacists are faced with a wide range of ethical challenges which necessitate ethical decision-making. Because pharmacists have close interactions with patients and are considered as an important group of health care providers, ethics in pharmacy practice seem to be as crucial as medicine. In addition, in the 21st century, pharmacy services have shifted from dispensing drugs to providing pharmaceutical care which aims at pursuing a new philosophy of practice to optimize standard of care. Therefore, the importance of ethics in pharmacy practice has increased. Due to the higher level of responsibility of pharmacists in the present century, pharmacists are facing new and more serious ethical dilemmas which need ethical knowledge and practice.

From another point of view, the profession of pharmacy is a business with high amount of money transfer. In this regard, providing pharmaceutical care may be in conflict with obtaining financial profits which itself creates serious ethical challenges. Pharmacists practice in different settings, including hospital and community pharmacies, drug companies, drug industries, and pharmacy schools. Therefore, they should be able to overcome multidimensional challenges in society, and as a result, they should be familiar with ethical principles and codes, guidelines, and their professional responsibilities, and have critical thinking in order to make ethical decisions to provide patient-oriented pharmaceutical services. Development of ethical knowledge in pharmacists guarantees higher standards of practice and will certainly improve patients' quality of life and wellbeing. The curriculum content and method of teaching affect outreaching scientific thinking and learning skills.[1,2] In Iran, the history of pharmacy and pharmacy education can be traced back to ancient Persia.[3] However, after the commercialization of pharmacy practice and involvement of pharmaceutical industries, teaching pharmacy ethics was abandoned until 7 – 8 years ago when the pharmacy ethics syllabus was introduced to pharmacy students. Now, pharmacy ethics is taught in all faculties of pharmacy in Iran as a single-unit course. The curriculum contains 10 topics which are considered as general subjects in this field and do not meet the pharmacists' needs. Evidently, ethical topics have become intertwined with legal issues. According to the guideline of the Accreditation Council for Pharmacy Education (ACPE), teaching professional behavior principles and ethical issues related to the development, promotion, sales, prescription, and use of drugs, delivering patient-centered care, performing clinical research, teamwork, dealing with ethical dilemmas, and conflict of interest are essential to the development of pharmacists. Nevertheless, these issues were not covered in the former syllabus of pharmacy ethics in our country. Professionalism in pharmacy practice is a combination of professional knowledge, cultural and religious values, public sphere, and virtues of professional and inter-

Authors' affiliations: [1]Medical Ethics and History of Medicine Research Center, Tehran University of Medical Sciences, Tehran, Iran, [2]Department of Toxicology and Pharmacology, Faculty of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran. [3]Toxicology and Diseases Group, Pharmaceutical Sciences Research Center, Tehran University of Medical Sciences, Tehran, Iran.
•Corresponding author and reprints: Pooneh Salari BCPS, Medical Ethics and History of Medicine Research Center, Tehran University of Medical Sciences, #23, 16 Azar Ave., Keshavarz Blvd., Tehran, Iran. Tel: +98-912-1485269, E-mail: poonehsalari@gmail.com.
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professional autonomy.[4] Professionalism varies in its details based on the context in which the pharmacists enter, including academic, industrial, hospital, and community pharmacy, while its basic principles are the same even among all healthcare professionals. Based on our former assessment, pharmacists attention to professionalism is not as it should be. Hence, including professionalism in a teaching course for pharmacy students was highly recommended.[4] Changes in and development of the regulations affect the relationships between pharmacists and physicians, as well as pharmacists and patients. Some pharmacists, as technical managers of pharmacies both in community and hospital settings, are salaried employees of a third party organization, possibly a governmental organization. Therefore, questions are raised regarding pharmacists' responsibility (type and to whom) and the conflict between professional values and organizational requests which are referred to as ethical ambivalence.[5] It is believed that in professions like pharmacy, the duties of which are mostly vague and non-standardized, higher levels of ethical reasoning may be particularly important.[6] Teaching principles of ethics and professionalism to pharmacy students and discussing ethical dilemmas may promote ethical reasoning and help in problem solving.

As one of our missions is teaching medical ethics to health care providers, including physicians, pharmacists, etc., we aimed at revising and/or compiling a medical ethics curriculum for different groups. Accordingly, in 2012, we compiled the "Code of Ethics for National Pharmaceutical System" which was released under the authority of the Ministry of Health, Treatment, and Medical Education.[7] In order to fulfill pharmacists' needs and improve Iranian pharmacists' knowledge of pharmacy ethics, revising the syllabus and curriculum of pharmacy ethics seemed necessary.

Materials and Methods

In this study, we reviewed the current medical ethics curriculum of the Faculty of Medicine and the current pharmacy ethics curriculum of the Faculty of Pharmacy of the Tehran University of Medical Sciences, Tehran, Iran, and pharmacy ethics curricula of several schools of pharmacy in the world. In order to prevent curriculum hypertrophy, the necessity of adding new issues to the current curriculum was assessed, and for this purpose, we used a goal-based model of curriculum planning. Therefore, we first identified objectives and reviewed different pharmacy ethics curriculum of different faculties and universities. Based on the objectives, the review, and a needs assessment study conducted by Asghari, et al.[8] the research team reached consensus on 23 topics in medical ethics which seem to be essential for developing knowledge in pharmacy students. Accordingly, a two-part questionnaire containing 23 topics was generated. The first part included demographic data and the second part collected the score of each topic according to its importance based on a Likert scale (the most important = 5, important = 4, neutral = 3, less important = 2, not important = 1). The face and content validity of the questionnaire was confirmed by four experts in medical ethics. To assess its reliability, the questionnaire was completed by 13 PharmD graduates and 11 specialists who teach medical ethics and pharmacy ethics. Cronbach's alpha was calculated to be 0.95. Then, the questionnaire was distributed among pharmacy graduates (PharmDs) participating in a Continuing Medical Education (CME) program in 13-Aban Pharmacy Complex, Tehran. Participants were not required to mention their names if they were not willing to.

Statistics

All data were analyzed using SPSS software (version 18, SPSS Inc., Chicago, IL, USA). The normal distribution of all data was assessed using the Kolmogorov-Smirnov test. Parametric and non-parametric tests including descriptive statistics, *t*-test, Independent samples *t*-test, and Pearson correlation test were used. All *P*-values below 0.05 were considered significant.

Results

Out of the 200 distributed questionnaires, 158 questionnaires were returned (response rate = 79%). The participants included pharmacy specialists and medical specialists who teach pharmacy ethics and medical ethics, and ethics specialists and PharmD graduates who participated in CME programs. Among the participants, 56 were male and 92 female with a mean age of 43.92 ± 13.60 years and mean work experience of 16.45 ± 11.48 years.

The questionnaire evaluated the views of study participants on 23 topics quantitatively. The new topics versus the current topics are presented in Table 1. The participants were asked to rank the topics based on a Likert scale (the most important = 5, important = 4, neutral = 3, less important = 2, not important = 1).

The mean ± SD score of each item is presented in Figure 1. Our analysis shows that 8 out of 23 topics gained a score of 4 and higher and the rest gained a score of 3 – 4. We observed a positive association between work experience of participants and the score of most of the topics except for bad news, pharmacist's relationship with healthcare team, medication error, and pharmacist's relationship with patients ($P \leq 0.05$). In the questionnaire, we asked all study participants to mention other important topics. A participant, who is presently teaching pharmacy ethics, mentioned the topic of ethics in research on laboratory animals. Therefore, the new topic was added to the curriculum. The syllabus was compiled for each of the new 24 topics (Table 1).

Discussion

Our study provided 24 important topics which should be taught to pharmacy students, while the current curriculum indicates only 10 topics. As healthcare providers, pharmacists should be educated on ethics in order to become sensitive to ethical issues. Ethics education should improve ethical sensitivity as well as a comprehensive insight into ethical instruction of pharmacy and medicine to appropriately manage real cases. For this purpose, pharmacists should have moral insight and good judgment,[9] which can be achieved through teaching ethical principles. Therefore, as the first step in teaching pharmacy ethics, we aimed at teaching ethical principles and the history of pharmacy ethics. Illustrated in various studies, more acceptable ethical reasoning provides a more understandable concept of the moral situation and helps in better decision-making. Hence, ethical principles and ethical reasoning should be taught to provide a framework for ethical decision-making. Studies have indicated ethical reasoning as a potential prognostic factor for clinical proficiency.[10] The Accreditation Council for Pharmacy Education (ACPE) states that empathy and ethical behavior, which help students become

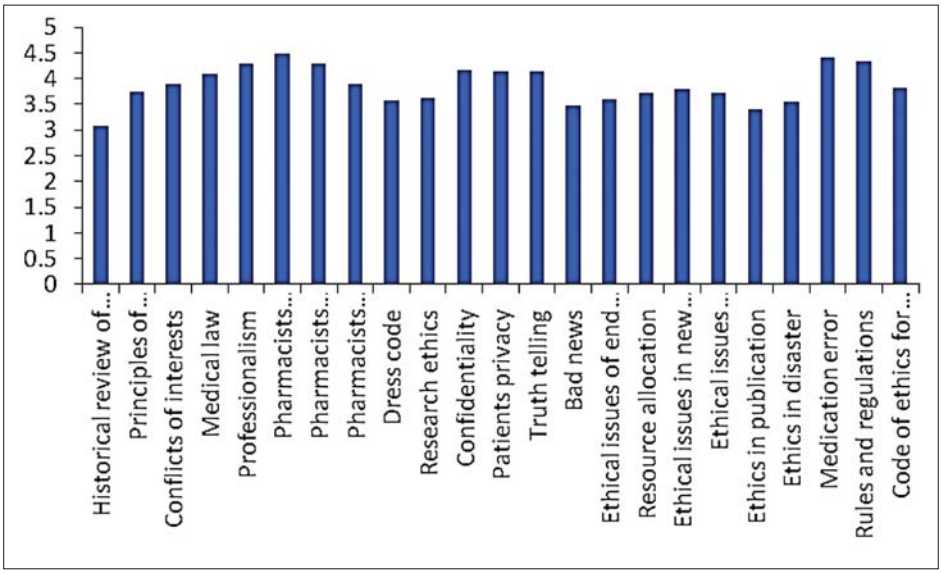

Figure 1. The scores of the pharmacy ethics priorities

Table 1. The topics of the current pharmacy ethics curriculum

	New topics	Current topics
1	General principles and history of pharmacy ethics	Definition of ethics and ethical behavior
2	General principles of medical ethics	Code of ethics
3	Conflicts of interests and its management	Professionalism 1, 2
4	Medical law	Ethical values in organizational management
5	Professionalism	Ethics in clinical research
6	Pharmacists relationship with patients	Bioethics
7	Pharmacists relationship with healthcare team	Ethics in pharmaceutical research
8	Pharmacists relationship with society and family	Ethical and legal issues in medicine and pharmacy-Professional and society interests- Ethical and legal obligations of a pharmacist
9	Dress code	Patient recognition and human dimensions
10	Research ethics	Relationship with patient
11	Confidentiality	- - -
12	Patients privacy	- - -
13	Truth telling	- - -
14	Bad news	- - -
15	Ethical considerations of end of life support	- - -
26	Resource allocation	- - -
17	Ethical considerations in biotechnologies	- - -
18	Ethical considerations in organ transplantations	- - -
19	Publication ethics	- - -
20	Ethics in disaster	- - -
21	Medication error	- - -
22	Guidelines and regulations	- - -
23	Code of ethics for the national pharmaceutical system	- - -
24	Animal ethics	- - -

effective professionals, should be considered as essential scholastic fulfillment for a doctor of pharmacy program.[11]

According to the study participants, the topics of pharmacists' relationship with patients, medication error, and rules and regulations have the highest scores, in decreasing order. Therefore, it seems that, in practice, pharmacists are faced with those challenges more often. From the professionalism point of view, the pharmacist-patient and pharmacist-physician relationships are important and have obtained a high score. A wide range of available data on diseases and their treatment and medications via the internet has increased patients' knowledge about their conditions which affect their relationship with pharmacists and physicians. On the other hand, the overlap between the role of physicians and pharmacists in treatment makes knowledgeable pharmacists more sensitive to their colleagues' mistakes, which affects their relationship in the health care team. Therefore, providing pharmaceutical care essentially needs an unwritten commitment between pharmacists and patients, as well as pharmacists and physicians based on ethical principles. Thus, not only should the pharmacists be aware of their patients' interests, but the patients must also participate actively in the decision-making process.[12]

Medication errors have some unwanted and negative consequences which affect the whole health system and impose

high costs on the society. Pharmacists can play a substantial role in prevention, detection, and resolving of medication errors.[13] Therefore, they need to be aware of ethical considerations in overcoming such challenges. The score of this topic in our study shows the extent of the challenge and the clinical importance of this issue among pharmacists.

In our study, professionalism and its different dimensions were found to be in the next level of importance. Regarding professionalism, 6 topics, out of 23, presented principles of professionalism. Our results show that 4 out of those 6 topics obtained a score of higher than 4 and the rest (dress code and pharmacists' relationship with society and patient's family) obtained a score of 3.5 and higher. Therefore, our results show the importance of teaching principles of professionalism to pharmacy students based on the attitude of PharmDs.

The consideration of the patients' right charter necessitates better familiarization of healthcare providers.[14] According to this charter, confidentiality and patients' privacy are considered as two important dimensions which were included as two topics of the curriculum and obtained a score of higher than 4.

The concept of death and dying, and proportionately, end-of-life care are common issues with different impacts on humans. Health care professionals deal with this concept in their daily work more often than non-professionals; however, there is no universal discussion of this topic among healthcare professionals even in practice.[15,16] The quality of teaching end-of-life care and its underlying subjects, including ethical challenges, varies in different curricula. Studies in the US medical schools show more focus on end-of-life care education; however, little is known about this topic in our country.[16] In a previous survey in 1985, it was reported that death education is taught in 68% of colleges and schools of pharmacy which is profoundly less than medical schools (96%) and nursing schools (95%).[17] A more recent study in 2001 showed that didactic teaching was carried out on the subject of end-of-life care in 62% of colleges and schools of pharmacy, while experiential teaching was carried out in 58% of pharmacy institutions.[15] Although the magnitude of death and dying in pharmacy practice may not be clearly evident, through providing pharmaceutical care, pharmacists will encounter the death of their patients.[17] In this regard, the Accreditation Council for Pharmacy Education (ACPE) standards and guidelines for the professional program in pharmacy leading to a doctor of pharmacy degree and the American Society of Health-System Pharmacists (ASHP) have emphasized the role of pharmacists in end-of-life care by learning communication skills, emotional support, pain killer medications, and providing complete pharmaceutical care.[18]

The pharmacy students' attitudes toward death and end-of-life care after a training course based on ethics in Christianity was assessed in a study and researchers found a favorable impact on students' thoughts. They highlighted the consideration of the topic of end-of-life care in the curricula as a constant topic and the necessity of teaching about pharmacists' role in palliative and end-of-life care.[19]

As pharmacists' role in the healthcare system is changing, the conflict of interest is becoming a serious challenging issue in pharmaceutical care. Consequently, it seems essential to be informed about the issue, and know its evidences and how to manage it. Different work environments (such as pharmacies, industries, drug companies, hospital pharmacies, and hospital wards) and pharmacists' relationships cause pharmacists to encounter different types of conflicts of interest. Thus, they should be aware of any situation in which they may prioritize their personal or corporate benefits over patients' interests.[20] Mismanagement of conflicts of interest has a wide range of unethical and negative consequences, not only in providing health services, but also in research including fraudulent results and their misinterpretation. The final outcome of such unethical behavior is deterioration of trust between patients and the health care system, high cost, and unqualified health care services. Therefore, it is necessary to inform pharmacy students of those situations and how to manage conflict of interest in each situation. In our needs assessment study, the topic of conflict of interest gained much interest.

In some situations, pharmacists meet patients who are willing to know more about their drug regimen and condition based on their treatment plan. What to know, the patients' right to know, and how to become informed are those challenges and questions which the designed curriculum has attempted to answer. Pharmacists should be aware of their responsibility in truth telling and giving bad news if they are willing to provide pharmaceutical care and get involved more actively in patient care. In our investigation, the topic of truth telling was highly scored by participants while bad news obtained a medium score.

To gain a PharmD degree, all Iranian pharmacy students should pass an 8-unit course by defending their thesis. In general, pharmacy is a research-based discipline and research has a fundamental role in pharmaceutical development. Consequently, research ethics seems to be an essential part of ethics education in faculties of pharmacy. Accordingly, we considered research ethics and publication ethics as two essential parts of the designed curriculum which obtained a medium score in our study.

In addition to fulfilling pharmacists' requirements, ethical issues in disaster, medication error, resource allocation, new technologies, and transplantation were also considered as essential topics.

It is suggested that our designed curriculum is in agreement with other studied curricula such as Educational Objectives for a Model Curriculum in Pharmacy Ethics Based on the American Association of Colleges of Pharmacy of the University of Texas,[21] the Ethical/Attitudinal Conceptual Map of the Doctor of Pharmacy Curriculum of the University of Puerto Rico,[22] Ethical Issues in Health Care from College of Pharmacy and Health Services of the Kennedy Institute,[23] Law and Ethics in Pharmacy Practice of the University of Minnesota,[24] and the Pharmaceutical Ethics in the University of Poznań.[25] The comparison of these curricula with our designed curriculum shows that some main topics, including conflict of interest, professionalism, and research ethics, are considered as essential. The other topics are considered as minor issues, but are not disregarded. In comparison with pharmacy ethics curricula of faculties of pharmacy of Shahid Beheshti University of Medical Sciences, Iran,[26] Mazandaran University of Medical Sciences, Iran,[27] and Isfahan University of Medical Sciences, Iran,[28] only the curriculum of Isfahan University is considered to be more applicable. This curriculum covers the topics of research ethics, professionalism, and pharmacists' relationship with patients and other healthcare providers. Thus, it seems that the designed curriculum is a context-based curriculum and will provide appropriate teaching material regarding Iranian pharmacists' requirements in daily practice. Furthermore, providing a suitable educational base, including interactive methods, is highly recommended for this curriculum.

Our study has some limitations. There is the possibility that the

participants scored the topics based on their experiences which may cause bias. In addition, our study participants were selected from PharmD graduates who participated in CME programs. As they are working in different pharmacy settings, including community and hospital pharmacies and drug companies, the generalizability of our results may be subject to dispute.

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27. Anonymous. Barnameh Dars Akhlagh dar Daroosazi. Department of Clinical Pharmacy, Faculty of Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran. [In Persian]
28. Sabzghabaee AM. Sarfaslnameh Akhlagh Daroosazi. Faculty of Pharmacy, Isfahan University of Medical Sciences, Isfahan, Iran. [In Persian]