

Determinants of Social Accountability in Iranian Nursing and Midwifery Schools: A Delphi Study

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ABSTRACT

Background: Revising the medical education programs to meet the needs of society has become both a necessity and an important priority due to the considerable increase of population, changing patterns of diseases, and new health priorities. While this necessity has been highlighted in Iran's Fifth Development Plan as well as its National 2025 Vision Plan, the determinants of social accountability have not been explained yet. This study aimed to develop determinants of social accountability in the Iranian Nursing and Midwifery Schools.

Methods: This classic Delphi study included thirty experts in Nursing and Midwifery Education, Research and Services selected based on purposive sampling and three rounds of Delphi technique and conducted in Nursing and Midwifery School of Mashhad University of Medical Sciences. The primary data were collected using an initial structured questionnaire prepared through extensive review of literature. SPSS 11.5 software was used to analyze the data. The interquartile deviation and percentage of agreement were also used to study the consensus of opinion by experts.

Results: Finding obtained from the rounds of Delphi resulted in selecting 69 determinants out of the initial pool of 128 primary determinants of social accountability. The items were selected based on experts' consensus and categorized under three main activities of Nursing and Midwifery School, namely education, research, and service.

Conclusion: Social accountability determinants were explained by 69 items for Schools of Nursing and Midwifery in Iran. The proposed determinants can be used by managers and authorities of Nursing and Midwifery School, policy makers, and evaluating institutions associated with them to ensure realizing social accountability goals.

KEYWORDS: Accountability, Social accountability, Social responsibility, Nursings, Delphi technique

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INTRODUCTION

Revision of medical training programs have become a necessity to keep pace with the population growth, changing disease patterns and health priorities of the society.¹ This is why the Iranian Document for Medical Education Revolution obliges universities to train human resources so that they are able to respond to the health needs of individuals and society by performing their professional duties.² The revision of educational programs has led to the introduction of a new concept called ‘socially accountable universities of medical sciences’.³ In line with the global shift in the attitude towards social accountability, this concept has also been emphasized in Iran as a philosophical approach toward higher education. It focuses on the responsibility of universities for training students who are responsive to the real needs of the Iranian society and capable of fostering the achievement of goals for the country as stipulated in the Fifth Development Plan and National 2025 Vision Plan.⁴

In addition to addressing the values, the World Health Organization has defined social accountability of medical universities as “the obligation to direct their education, research and service activities towards addressing the priority health concerns of the community, region, and/or nation they have a mandate to serve”.⁵ In order to fulfill social accountability, universities of medical sciences should be committed to the continuous development of new and effective approaches/strategies for the development of health, and demonstration of positive and tangible effects of university products on community health.⁶ Therefore, it is crucial to examine to what extent universities of medical sciences have achieved social accountability.

It is obvious that in order to achieve social accountability, social responsibility should also be considered; because accountability should improve from the lowest level, namely responsibility, to the highest level, namely accountability. In fact, responsibility refers to the commitment and awareness of the

authorities to train competent individuals in order to meet the needs of the society that mostly has a theoretical feature while accountability tends to guide and provide the education, research and services to meet the needs of the society and evaluate the process.⁷

In this regard, a model was presented to assess social accountability in medical schools, which was revised in 2012.⁸ Conceptualization-Production-Usability Model (CPU model) offers a list of parameters for evaluation and improvement of medical schools’ quality. Similarly, the Training for Health Equity Network (THEnet) has developed a framework by limiting the CPU model that evaluates social accountability with a heightened focus on the educational activities of medical schools (9). However, the CPU model and THEnet framework only present general determinants to examine the social accountability of medical schools. Therefore, they cannot be used as clear, assessable and generalizable determinants for studying accountability in all departments associated with health sciences. Moreover, there are plenty of global debates concerning social accountability standards and improvement of evaluation quality.^{9,10} In the context of Iran, some projects have been performed to measure the effect of social accountability on community health. However, there is a lack of an appropriate tool for measurement. This perhaps clarifies the reason for the existing emphasis on the development of certain methods and tools for social accountability assessment in the literature.¹¹

Due to differences in education, research and service processes across various schools of medical sciences, lack of determinants for examining social accountability of nursing and midwifery schools on one hand, and the role played by these schools in improving healthcare services offered to society through training healthcare workers, on the other hand, evaluation of their position on the way towards social accountability is crucial.¹² Hence, the current study aimed to develop determinants of social accountability for the

schools of nursing and midwifery in line with the native and indigenous values of Iran.

MATERIALS AND METHODS

This study was carried out using a classical Delphi technique. Given that Delphi technique is used to receive comments from a group of experts on an issue or a question and reach consensus by using a series of survey questionnaire rounds and effective feedback to members, the research team employed the Delphi technique to explain social accountability determinants in this study.¹³ After issuing license No. 931101 from the ethics committee of Mashhad University of Medical Sciences, the study was conducted in Mashhad Nursing and Midwifery School over 5 months since February 2015. Purposive sampling was used to select experts with rich information, knowledge and experience from faculty members, master and PhD students as well as graduates of the nursing and midwifery school. Experts needed to have at least three-year clinical and educational experience and enough time. Experts who did not fill in the questionnaires and had no tendency to continue were excluded from the study. Considering entry requirements for experts, Nursing and Midwifery School and Higher Education and Clinical Departments of Imam Reza and Ghaem hospital in Mashhad were visited and full details on social accountability subject and purpose and procedure of the study were provided for the experts and informed consent was completed by them. If the expert refused to participate in the study, another person was selected by purposive sampling method.

This study was performed in three rounds. The first and the third rounds used a non-face-to-face questionnaires whereas an in-person questionnaire was used in the second round. Some studies have suggested a sample size ranging from 10 to 30.^{14,15} In this study, 30 and 15 experts respectively entered the first, second and third rounds with respect to probability of loss.

Thirty experts participated in the first round. Each of the follow up rounds (i.e.

two and three) was attended by 15 experts. In each round, the necessity for the presence of a determinant in the final instrument was determined by the scores assigned to each determinant of social accountability by the experts. Experts needed to assign each item to three activity areas of education, research and services.

Round 1

In the first round, a structured questionnaire for the primary determinants of social accountability was prepared based on extensive search in the related literature across national and international databases. Additionally, the researchers used documents such as Fifth Development Plan, the National 2025 Vision Plan (clearing the way for development and construction of Iran in various fields associated with culture, science and technology, society, administration, economics, regional development, security, defense, politics, law, and budget), and general policies for health issues by Iranian authorities.

The most important references used to draft the items were the general policies of health (5 items), comprehensive scientific health map (10 items), Socially Accountable Medical Education strategic plan (15 items), CPU model (7 items), THENet's Social Accountability Framework (12 items), as well as some papers presented on social accountability in related high rank journals (30 items).¹⁶⁻¹⁹ Some questions extracted from these sources are as follows: "Are public health priorities identified?", "Are the needs of population at risk considered in the areas of education, research and service?", "Is the students' competence in response to the priorities of the society measured?", "Are education, research and service providing activities revised to adapt with priorities and needs of the society?", "what is the role of school in increasing the partnership of the individuals, families and society to improve public health?", "Are faculty members competent enough in the field of social accountability?", "Are research and research funds pushed toward health priorities

of the society?”, and “How are the capabilities of the institutions and organizations used to improve health care sector?”

The questionnaire included 128 determinants and was scored using a 5-point Likert scale (ranging from 1=strongly disagree to 5=strongly agree). Participants were asked to freely write down their ideas, viewpoints, and proposed determinants (if any).

Round 2

The second round included the proposed new criteria and determinants which had not obtained the consensus of experts to be included in or removed from the final instrument. According to the experts' opinion, a 7-point Likert Scale Questionnaire with 83 items (from 1=strongly disagree to 7=strongly agree) was used to provide more detailed reflection and evaluation. Since 15 experts did not tend to participate in the study after the first round, in the second round,

15 experts were asked to examine and score the questionnaire items before the start of the session. During the face to face session, each expert presented his/her viewpoints separately on determinants. Experts' opinions were not discussed and influenced by other people.

Round 3

The third round was held within a week from the second round and involved sending determinants which had not achieved consensus to the same experts who attended the second round of Delphi process. The determinants were emailed in the form of the third round questionnaire. Panelists were required to score 17 determinants for inclusion in the ultimate tool by choosing yes/no.

Data Analysis

Data analysis was carried out by Statistical Package for the Social Sciences (SPSS version 11.5). To describe the research units, descriptive statistics, frequency distribution, mean and standard deviation were measured. There are more than 15 methods to evaluate

the expert's consensus between Delphi rounds among which interquartile deviation (IQD) and percentage of agreement were employed in this study.¹⁵

Moreover, interquartile deviation (IQD) and the percentage of agreement were employed to evaluate the consensus among experts.

In the first round of the study which used a 5-point Likert scale, determinants with of percentage of agreement of ≥ 0.9 and $\text{IQD} \leq 1$ were moved to the final determinant set while items with percentage of agreement of < 0.6 and $\text{IQD} > 1$ were removed from the set. Additionally, determinants that scored between these cut-off values were transferred to the second round of Delphi. In the second round, with a seven-point Likert scale, determinants that obtained an agreement percentage of ≥ 0.7 and $\text{IQD} \leq 1$ were transferred to the final set whereas those with the percentage of agreement of < 0.6 and $\text{IQD} > 1$ were omitted. Besides, other items were transferred to the third round for the final consensus. In the third round, using a yes/no scoring approach, the determinant was regarded to meet consensus if 67% of the experts confirmed a determinant by choosing yes; otherwise, it was deleted from the final tool.^{14,15}

RESULTS

The thirty experts for the first round of Delphi technique included 15 faculty members, 7 postgraduate students, and 8 graduates, out of which 15 were selected for the second and third rounds. Table 1 represents demographic information about the experts.

The questionnaire was administered to all experts. 23 experts filled in the questionnaire, out of which 8 had no tendency to participate in the second round. Thus, 15 experts were studied in the second round, attending the face to face session and completing rounds 2 and 3 questionnaire.

The Classic Delphi method shown in Figure 1 (indicating the number of items) depicts the process and results through each round of the questionnaire distribution.

Table 1: Demographic features for the panel and respondents for each survey round

Variable		The first round of Delphi N (%)	The second and third round of Delphi N (%)
Field of Study	Nursing	13 (43.3)	7 (46.6)
	Midwifery	12 (40)	5 (33.3)
	Medical Education	5 (16.6)	3 (20)
Age (mean and standard deviation)		42.1±10.1	40.3±4.4
Grade	Faculty Member	15 (50)	8 (53)
	Higher Education Student	7 (23.3)	3 (20)
	Graduate	8 (26.7)	4 (27)
Educational experience of non-faculty members (mean and standard deviation)		7.3±4.1	5.1±2.7

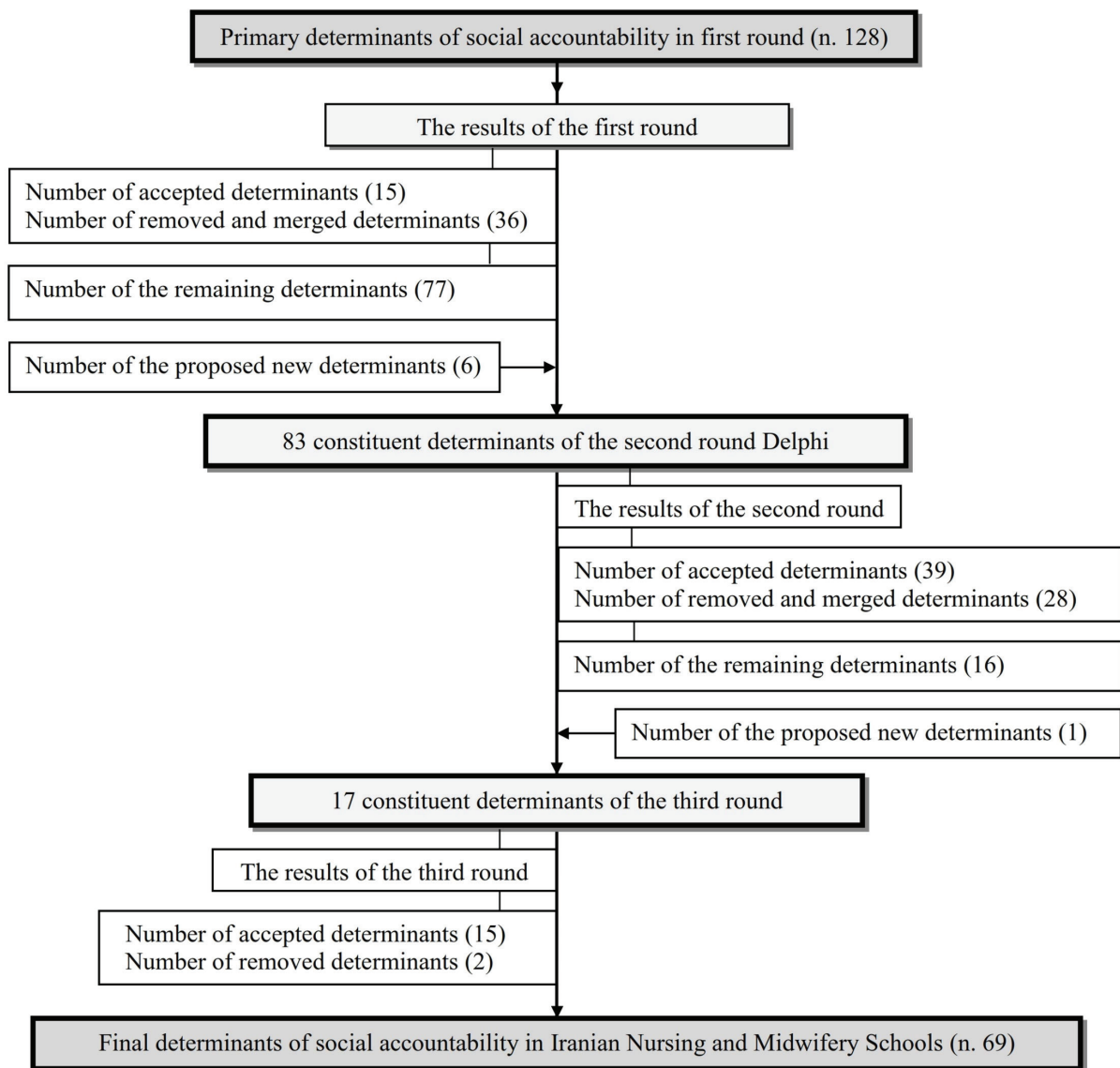


Figure 1: Determinants examined in different Delphi rounds

In the first round of Delphi, 15 determinants obtained consensus, but 4 were removed. Based on the comments by experts on each determinant, 32 overlapping

determinants were merged with others. A total of 83 determinants (6 proposed new determinants and 77 items which did not obtain the consensus of experts for presence

in or removal from the final tool) reached the second round.

From the 83 determinants, 39 determinants gained the experts' consensus and one additional item was added based on experts' suggestion in the second round of Delphi. In this round, no determinant obtained consensus for removal from the instrument. Furthermore, twenty eight overlapping determinants were also merged following comments by experts. At the end, 17 determinants reached the third round.

Only two determinants were removed in the third round and the remaining items obtained the consensus of experts. Also, each item was assigned to three activity areas of education, research and services based on the panel of experts.

Overall, out of the 128 primary social accountability determinants for the School of Nursing and Midwifery, 69 reached consensus.

Fifteen of them reached consensus in the first round (Table 2), 39 determinants in the second round (Table 3), and 15 determinants in the third round (Table 4).

DISCUSSION

The present study developed objective determinants to determine the social accountability of Nursing and Midwifery schools through Delphi method. It is believed that schools related to health sciences should play their role in teaching, research and providing services to resolve the problems of society.²⁰ Therefore, social accountability determinants obtained from this study can be used as a yardstick to keep track of these activities for Nursing and Midwifery schools.

It is necessary for schools to adjust and revise their educational activities and programs to ensure training students who are capable of

Table 2: Determinants reaching consensus in the first round

Row	Determinants	Percentage of Agreement	IQD	Main Activity*
1	Identifying health priorities of the community	0.93	0.5	2
2	Conducting research according to the current and future health needs and challenges of the community health	1.00	0.5	2
3	Focus on the ethical and moral values in educational programs	0.93	0.5	1
4	Reflection of the expected competencies of students in the course plan	0.93	0.5	1
5	Relevance of the teaching methods to the needs of learners and the existing conditions	0.92	0.5	1
6	Tailoring the training programs to the scientific and technological progress	0.96	0.5	1
7	Getting feedback from students about the training	0.96	0.5	1
8	Updated library, including printed, online and digital resources, which makes new health findings accessible	0.93	0.5	2
9	Publishing the priority research findings in relevant journals and conference proceedings	0.93	0.5	2
10	Providing research opportunities and complementary courses for faculty members to familiarize them with the priorities of community needs	0.93	0.5	2
11	Students' participation in national health promotion programs	0.96	0.5	3
12	Cooperation of faculty members, students and graduates in planning, programing, and implementing the health-related education, research and services	0.92	0.5	1&2&3
13	Allocating higher research funds to prioritize research in the community	0.93	0.5	2
14	Making technical facilities available to researchers	0.93	0.5	2
15	Considering vulnerable populations in research	0.92	0.5	2

*Main Activity: Three main activities of Nursing and Midwifery School. 1: Education; 2: Research; 3: Service

Table 3: Determinants reaching consensus in the second round

Row	Determinants	Percentage of Agreement	IQD	Main Activity
1	Regulating the mission of schools according to the health priorities of the society	0.84	0.75	1
2	Designing, implementing and updating school curriculum based on the priorities of the community health needs	0.85	0.62	1
3	Incorporating the health problems of vulnerable groups (pregnant women, children, the elderly) in the content and timing of educational programs	0.80	1	1
4	Relevance of acquired qualifications by graduates to job requirements and needs of health institutions	0.86	1	3
5	Reviewing the training course plan every 3-5 years to ensure its relevance to the priorities and needs of the community	0.83	1	2
6	Faculty partnership with stakeholders and social institutions to determine the priority of community health needs and to implement programs which are tailored to the community health needs	0.92	1	3
7	Use of appropriate marketing activities and mechanisms (meetings, conferences, seminars, media, etc.) by the faculty to introduce job opportunities	0.92	0.5	3
8	Availability of health/healthcare centers for the presence of students	0.92	0.5	1
9	The suitability of the curriculum structure to prepare students for addressing the community health problems on time	0.80	1	3
10	The emphasis of educational programs on <i>Evidence-Based Care</i>	0.83	0.87	1
11	Focus on multidisciplinary approaches to solve fundamental health problems of the community	0.76	1	1
12	To support profitable and problem-oriented dissertations and studies related to the health needs of the country	0.92	0.62	2
13	Having a holistic view to all aspects of health in educational programs	0.91	0.5	1
14	Using accountability as a criteria for accreditation	0.85	1	3
15	Incorporating the rules and regulations of medical sciences in educational programs	1	0.62	1
16	Teaching research methodology and participating students in research projects related to public health	0.93	0.5	2
17	Having written plans for communicating with graduates in areas of education, research and transfer of experiences	0.93	0.5	1&2&3
18	The continuing education programs for healthcare workers to enhance skills related to values of social accountability	0.86	1	3
19	Passing medical education courses by faculty members	0.80	1	1
20	Responsibility of the faculty to its graduates	0.85	0.62	3
21	Measuring clinical competencies of students in different ways during education	1	0.5	3
22	Evaluating the professional competence of graduates before entering the workplace	0.93	0.5	3
23	The use of appropriate technology in public education programs and public services	0.80	1	3
24	Considering the ideas of patients and their relatives about care and health services by administrators and healthcare providers	0.93	0.5	3
25	Tailoring the goals of educational programs to the future career of the students	1	0.5	1
26	Having appropriate training programs and incentives to increase the capacity of faculty members in public health education	0.93	0.5	3
27	The effectiveness of the results of the researches on policies and practices of the faculty in developing public health	1	1	2

Row	Determinants	Percentage of Agreement	IQD	Main Activity
28	Holding seminar sessions with the participation of students, faculty members and health system staff	0.91	0.87	3
29	Pilot implementation of comprehensive health programs prior to actual implementation	0.92	0.5	3
30	Faculty's membership at associations or organizations responsible for urban public health to present public health promotion programs	1	1	3
31	Maintaining balance in the education, research and clinical activities of the faculty	0.93	1	1&2&3
32	Identification and continual attention to vulnerable groups	0.92	1	2
33	Enabling students to meet the health needs during field education	0.80	1	3
34	Directing student researches in order to solve the problems and needs of community health	0.92	1	2
35	Offering elective courses to students to satisfy their specific needs	0.85	1	1
36	Increased consciousness, responsibility, capability and participation of individuals, families and communities in health promotion, arising from the activities of faculty	0.80	1	3
37	Activeness of faculty in the management of health information	0.92	0.5	3
38	Accountability of faculty to competent authorities	0.83	1	3
39	Faculty's use of the capacity of cultural and educational institutions and media to raise awareness, responsibility, and preserve and improve the health of the community	0.92	1	3

meeting community needs.⁶ To this end, It has been suggested that educational system should pay special attention to the needs, social issues and health problems of their communities.²¹ In the event that the programs of an educational institution are presented in this way, they can be considered a measure to meet community needs and strengthen the health system, in line with social accountability.¹⁰ The current study addressed this issue by including determinants such as “identifying health priorities of the community” or “regulating the mission of schools according to the health priorities of the society”.

Providing evidence-based educational programs in another point was agreed upon by experts regarding social accountability. It focuses on education according to the needs of society, students and valid scientific findings.²² Therefore, when educational activities of the nursing and midwifery schools are based on evidence, the needs and challenges of the society will be considered, and this issue is expressed as “the emphasis of educational programs on *Evidence-Based Care*”. In obtaining the

determinants, the moral issues of the society have were emphasized, as an important aspect of professional competence.²³ In some studies, ethical dimension of the social responsibility is considered equal to social accountability. The review of literature shows that ethics is an important aspect of social responsibility, and consequently organizations are expected to consider the values and beliefs of people in their activities.²⁴ Therefore, earlier studies suggest that codes of ethics should be taught to students in order to institutionalize commitment to these codes.²⁵ Besides, providing educational programs to improve the care provided in the field of Spiritual Health is another issue of particular importance. Studies suggest that today spirituality is the fourth dimension of health and plays an important role in improving the quality of people's lives.²⁶ Therefore, spiritual needs of patients should not be neglected in healthcare. Some of the earlier studies in Iran show that more than 80 percent of nurses have received no training on the concept of spiritual care.²⁷ As a result, it is essential for educational programs to take into account the spiritual issues related

Table 4: Determinants reaching consensus in the third round

Row	Determinants	Percentage of Agreement	Main Activity
1	Reviewing standards of education, research and regular service delivery to the community	1	1&2&3
2	Focus on acquiring the competence and skills in the management of society's common diseases in the content of educational programs presented to students	0.85	1
3	Focusing on the cognitive and emotional and physical aspects in admitting students	0.86	3
4	Appropriate distribution of graduates in health centers offering primary, secondary or tertiary prevention services	0.93	3
5	Familiarity of faculty members and students with the determinants of social accountability	0.93	1
6	Taking practical steps to promote the Islamic-Iranian lifestyle concerning health	0.93	3
7	Having programs to engage graduates in student training and conducting research	0.86	3
8	Having procedures to evaluate the way students cope with patients and staff in the healthcare system	0.86	3
9	Developing cultural programs for faculty members and students based on community values	0.86	3
10	Establishing intergroup communication at the faculty and university level for curriculum design and decision-making related to health	0.86	3
11	Availability of professional learning opportunities and sharing education and research experiences among students	0.86	1
12	Considering the first level of care in teaching and research programs	0.80	1
13	Maintaining a holistic view of human being in all aspects of education	0.73	1
14	Holding conferences periodically for faculty members, students and graduates	0.86	3
15	Offering information services to the public with a focus on their rights and social responsibilities toward health	0.86	3

to healthcare. In the present study, the experts in Delphi rounds emphasized the moral and spiritual issues.

Another point agreed upon by experts was related to educational programs which should also cover the staff and faculty members of the universities, in the form of research opportunities and continuing education programs to improve their knowledge, attitudes and skills. This enables them to meet health needs and priorities of the community. This finding is consistent with those of the previous study which considered monitoring the staff and faculty members as one of the main sub-themes of social accountability in the programs of educational departments.⁴

Another important dimension in Nursing and Midwifery schools is research. According to earlier studies, when a research activity enjoys

social accountability and applies scientific methods to solve health-related problems of the society, its results can improve public health. As such, research frameworks necessary for conducting research activities related to the needs of community should be provided to students.²⁸ In this regard, it has been stated that the reason why Suez Canal University School of Medicine enjoys a high level of social accountability is the research activities of the university which are tailored to the needs of the community health, determined by the Ministry of Health, and supported by appropriate financial and technical resources for researchers.¹⁸ It is, therefore, important that universities take the right steps in the implementation and evaluation of research activities to achieve predetermined priorities. However, according to some studies, execution and evaluation plans are not based

on research priorities in many countries including America. Therefore, they cannot improve health services and their resources.²⁹ The determinants proposed in this study reflect this issue through several items, including “to conduct the researches according to the now and future health needs and challenges of the community health” or “to support profitable and problem-oriented dissertations and studies related to the health needs of the country”.

Apart from education and research, another point of interest is applying research results in healthcare. Applying the findings of a study is a main part of professional roles and responsibilities. It enhances the efficiency and quality of healthcare and can improve social accountability situation in Nursing and Midwifery schools.³⁰ However, in Iran, due to some problems such as lack of sufficient knowledge and skills, research findings are not used properly by healthcare workers.³¹

The third activity area of Nursing and Midwifery schools is service. Providing high quality healthcare services are the center of gravity in the performance of quality assurance systems.³² According to the World Health Organization, quality guarantee of the provided services depends on the competency evaluation and improvement.³³ Therefore, evaluating professional competencies of the graduates and students plays an important role in their competence to meet the health needs of the society. To this end, it has been suggested that one of the main approaches to institutionalize social accountability is to train qualified students and graduates with qualifications, by educational institutions.³⁴ However, according to several studies, professional competence of the students in Iran is inadequate and this can seriously affect the quality of healthcare services³⁵ The current study presented numerous determinants to evaluate professional competence among the students and graduates.

A further problem in this area is that the faculty should guide the clients towards a correct lifestyle because a healthy lifestyle is valuable in reducing breakout and health problems, promoting health, coping with stress factors,

and improving the quality of life.³⁶ Such healthy lifestyle provides spiritual, mental, social, and human health. Earlier studies show that lifestyle is related to 53 percent of mortality among people.³⁷ Therefore, in healthcare services a process should be created so that people take responsibility through adopting a healthier lifestyle. However, according to previous studies in the context of Iran, adequate training is not provided so that people can lead a healthy lifestyle by themselves.³⁶ While achieving this level of services is emphasized by the Iran’s supreme leader and is embedded in the health policy, increasing awareness, responsibility, empowerment and participation of the individuals, families and community depends on providing, maintaining and improving health.¹⁶ Therefore, given that one of the goals set by the World Health Organization by 2020 is improving life- style of people, some strategies should be arranged in the agenda of the faculties related to the health science.³⁸ These points have also been agreed upon by the study experts and they had consensus about them.

Finally, it should be noted that the current study had some limitations due to not having its proposed determinants evaluated for psychometric properties, validity and reliability. However, by using a comprehensive literature review and capitalizing on the high level of experience of the study experts for the Delphi techniques over three rounds, the finally accepted determinants of social accountability can be regarded as suitable determinants for Nursing and Midwifery schools in Iran. However, due to administrative constraints and because it was not possible that the experts from other universities take part in in-person rounds of the Delphi, all experts were selected from Mashhad University of Medical Sciences.

CONCLUSION

Social accountability determinants were explained by 69 items in Iranian Nursing and Midwifery Schools. Results of this study provide the managers and authorities of Nursing and Midwifery school, policy makers,

and associated institutions with valuable contributions. The proposed determinants in the current study can be used as a means toward realizing the goals of social accountability for medical school.

It is suggestions that in future research, the psychometric properties of the proposed determinants should be verified. It is also necessary to explain and evaluate social accountability determinants in other schools affiliated to health sciences.

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