

The impact of socially accountable health professional education: Systematic review

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ABSTRACT

Medical education is socially responsible for a global educational movement that transforms the development and presentation of medical schools in higher education. Therefore, in the present systematic review, we aimed to evaluate the impact of socially accountable health professional education. Published research articles were reviewed by searching the relevant terms in invalid databases. In the initial search, 2340 records were obtained. At this stage, 1482 records were deleted due to duplication, and 773 records were removed due to indirect connection with the subject. Then, 85 articles were retrieved for full-text review. Finally, the complete review led to the selection of nine studies that met all inclusion criteria. Based on the results of the present systematic review, among the nine reviewed articles, four studies (44.44%) evaluated the effectiveness of social accountability on increasing the sense of empowerment, self-confidence, competencies such as teamwork, communication skills, and readiness for work. Three studies (33.333%) assessed the effectiveness of social accountability on providing further and better medical services and reducing infant mortality. Also, in two articles (22.22%), students' lack of knowledge about social accountability was studied. Social accountability can help cultivate a healthy and skilled medical workforce and be effective in improving health services provided to the people. On the other hand, there are different perceptions and views on what social responsibility really is and how its effectiveness can be measured. Also, it is highly important to provide awareness in this regard for students.

Keywords: Health professional education, medical schools, social accountability

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Received: 10-04-2022

Revised: 21-07-2022

Accepted: 08-08-2022

Published: 17-01-2023

Introduction

Although medical schools have tried to train physicians who can meet the health needs of the people and alleviate their pain and suffering, changes in the distribution and prevalence of diseases, different social classes, and increased levels of specialized services have altered the health needs of people over the past years.^[1] About 400 million people worldwide do not have access to one or more

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How to cite this article: Mahdavyinia S, Larijani SS, Mirfakhraee H, Zandieh Z, Olamaeian F, Tayebi A, et al. The impact of socially accountable health professional education: Systematic review. *J Family Med Prim Care* 2022;11:7543-8.

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/jfmpc.jfmpc_835_22

essential health services, mainly due to labor shortages, lack of combined balances in skills, and uneven geographical distribution of physicians, nurses, and midwives.^[2,3] There is often a significant mismatch between health professional education and the needs of the local health system, which is an inevitable consequence of limited cooperation between the health and education sectors.^[2] Reforms in health-care education, including student selection, curriculum, and location, play an important role in attracting and retaining health professionals fairly.^[3] Due to these changes and reforms, new concepts have been introduced in society, which are called accountable physicians, social accountability, and accountable medical school.^[1] Social accountability is about social issues affecting human health, and it had been considered in all ancient medical schools, including medicine in Greece and Iran.^[1] In the last three decades, social accountability has been increasingly discussed in various fields of service delivery to the community, and it has been considered as a goal for multiple fields. Also, in the medical education system, like other areas of social accountability, this concept has been introduced as one of the main goals at the universal level.^[4-6] Social accountability in health professional education focuses on measurable improvements in people's health and related services, especially through educational activities,^[7,8] and is probably one of the most important criteria for assessing the quality of medical education.^[9] Medical schools that adopt social accountability attempt to train future and current physicians to provide evidence-based and culturally relevant health care to local communities in a fair and cost-effective manner.^[10,11] However, despite the efforts to move toward social accountability in health professional education, there is limited evidence regarding its effectiveness (Reeve). The purpose of this systematic study was to review the published quantitative and qualitative studies on the activities required for the success of social accountability in health-care education and their impact on communities and health services that lead to improved health outcomes.

Materials and Methods

Search strategy and selection of articles

Research articles published in English and Farsi were found by searching the related terms in the databases of PubMed, ERIC (OvidSP), CINAHL, Web of Science, Informit, ProQuest (Health & Medicine, Education, Social Sciences), PAIS International, EMBASE, Scopus, CINAHL, and Google Scholar. Initially, one researcher produced the terms needed for the search, and then the terms were reviewed by all the authors. Search terms for article screening included "Impact," "health systems," "health indicators," "inequities," "disparities," "Health Professional Education," and "socially accountable." The combination of these words with the operators "and" and "or" was also examined. The Persian equivalent of all these words was also searched. There was no time limit for searching, and all articles related to the topic were reviewed.

Inclusion and exclusion criteria

Inclusion criteria included all published studies regarding the impact of socially accountable medical education on retention

of the medical health workforce, regional health, community health, equity, or health systems, regardless of the design or methodology. Exclusion criteria included the articles that the full text was not available. Also, data related to review studies and nonoriginal articles were not extracted.

Screening and data extraction

The two trained authors performed search strategies and then they separately screened the titles and abstracts of the articles and selected the relevant studies based on their relevance to the objectives of the review study, inclusion and exit criteria, and their quality. Abstracts of all articles were reviewed and in cases where the article could not be deleted based on the title or abstract, the full-text article was retrieved and evaluated. In the event of a discrepancy, the two researchers thoroughly reviewed the article and reached a consensus, citing reasons for including or deleting the article.

In the initial search, 2340 records were obtained. At this stage, 1482 records were deleted due to duplication, and all articles that did not meet the inclusion criteria or were inappropriate due to indirect relevance were removed (773 records). Then, the full text of 85 articles was reviewed. The complete review led to the final selection of nine studies that met all inclusion criteria. The method of presenting the topics, including analysis and interpretation, determining the objectives of the study, and collection of the data, was performed based on the preferred items for systematic reviews and meta-analysis (PRISMA) [Figure 1].

Results and Discussion

Based on the inclusion criteria, nine studies were selected for further review and the results of which are shown in Table 1. Among the reviewed articles, there were four cross-sectional studies, one retrospective case study, one non-randomized controlled study, and one observational design study, and in two articles, the type of study was not reported. In the reviewed articles, data collection methods included surveys, group and individual interviews, semistructured interviews, and online questionnaires. The total number of cases surveyed in the articles was 2262 people.

Based on the results of the present systematic review, among the nine reviewed articles, four studies (44.44%) evaluated the effectiveness of social accountability on increasing the sense of empowerment, self-confidence, competencies such as teamwork, communication skills, and readiness for work. Three studies (33.33%) assessed the effectiveness of social accountability on providing further and better medical services and reducing infant mortality. Also, in two articles (22.22%), students' lack of knowledge about social accountability was studied.

There is clear evidence from developed countries that increasing the number of physicians singly does not necessarily improve health outcomes.^[13] The philosophy of social accountability is that health and education should be designed according to the needs

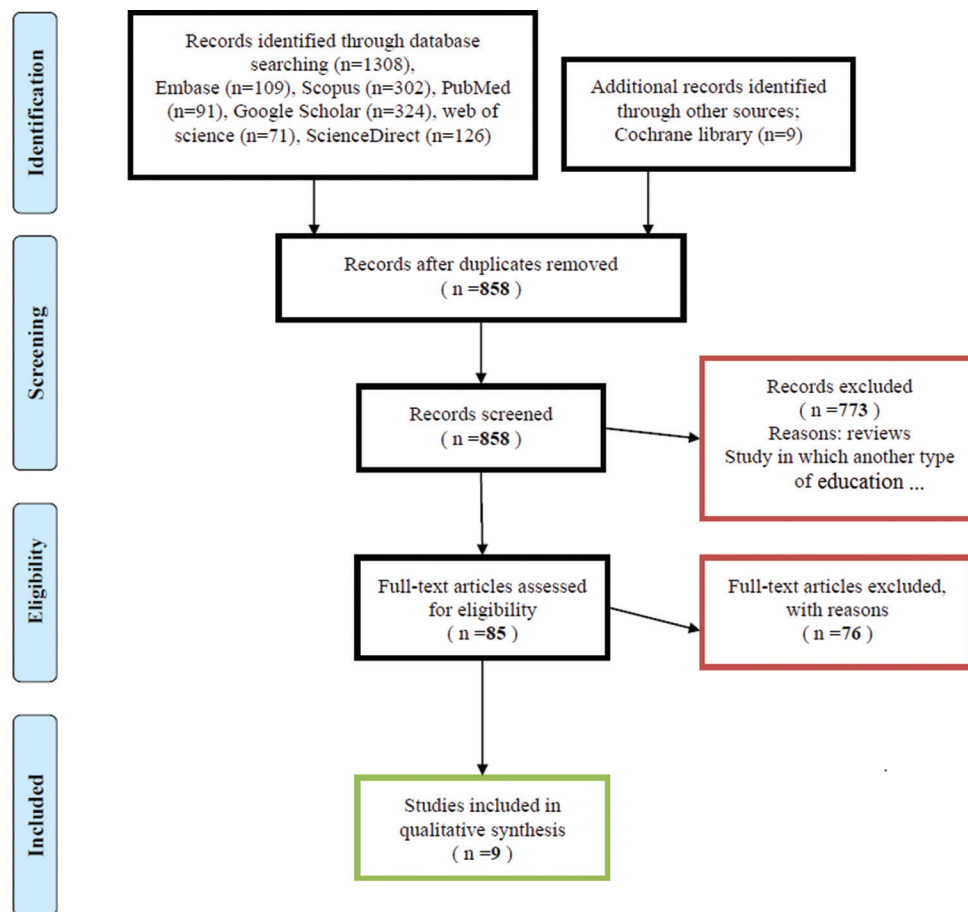


Figure 1: Flowchart of selection and evaluation of articles

of society and economic or ethnic conditions, and communities should be able to easily develop their health workforce. Social accountability provides a model for producing a healthy workforce tailored to the goals of society. This model includes the fair selection of students from required areas through candidacy in the community, social contracts for communities to provide support for scholars, and commitment to return of services and community-wide participation. These philosophies and strategies, such as equitable student selection and community-based broad education, have led to the production of a local health workforce with exceptional retention rates of midwives, nurses, and physicians in areas with unmet needs.^[16] According to the results of the present study, social accountability can help cultivate a more qualified medical workforce. Strasser *et al.*^[15] reported that social accountability enables students to understand values and make the most of the opportunities offered to them in learning clinical principles. Especially during the community comprehensive internship, these students become members of the health team and active participants in health care. This increases their clinical confidence and competence and ensures that their clinical knowledge and skills are embedded in the local rural community. The researchers stated that Northern Ontario School of Medicine (NOSM) graduates are consistently more successful in adapting to residency training compared to other Canadian schools. They also demonstrated that 94% of

undergraduate and postgraduate physicians with NOSM work in northern Ontario, which indicates that the NOSM model is successful in addressing long-term labor shortages. Also, the results of another study at the same university showed that NOSM implements all the components of WHO global education policy and recommendations, such as increasing access to health care in remote and rural areas through improved maintenance. The results showed that NOSM learners are well adapted to the challenges and opportunities of participatory learning distributed in the community. On the other hand, social accountability increases the clinical confidence and competence of students and ensures that their clinical knowledge and skills are embedded in the local rural community. In terms of curriculum, competency-based NOSM programs include cultural competencies, interprofessional promotion and integration, harnessing the power of information technology for learning, using global experiences to promote local learning, encouraging professionalism of social accountability, and strengthening educational resources through interdependent partnerships with local communities, health services, and health professionals.^[14] Woolley *et al.*^[18] also reported that SAHPE's commitment to community-based and hospital-based education may help their graduates achieve good overall performance, work preparation, and overall clinical skills. In addition, the extra focus of SAHPE curricula is on educating students about health equity, working

Table 1: Results of studies

Author(s) Year	Objective	Study population Method of data collection	Results
Couper <i>et al.</i> , 2011 ^[12] A cross-sectional descriptive study	Analyzing the similarities and differences between the two integrated longitudinal rural internship programs for medical students	Group and individual interviews with participants (89 in Flinders and 39 in NOSM)	Nurturing confident and skilled students under the influence of two educational programs The positive effect of the integrated rural longitudinal internship approach for teaching the main clinical components of the medical curriculum on undergraduate students and physicians were observed
Cristobal and Worley, 2012 ^[13] A retrospective case study	Investigating the cost-effectiveness and sustainability of medical education in poor rural areas	A survey of 164 graduated medical students in the Philippines, the number of local municipalities with physicians, and changes in infant mortality rates since the establishment of ADZU SOM school	Reduction of the mortality rate of children under 5 years from 89 per 1000 live births to 8 per 1000 in the areas of Philippines covered by ADZU-SOM
Strasser <i>et al.</i> , 2013 ^[14]	The evolution of health professional education through social accountability	Use of combined studies to track NOSM (The Northern Ontario School of Medicine) medical students and diet practitioners and to assess the socio-economic impact of NOSM by NOSM and the Centre for Rural and Northern Health Research (CRaNHR)	The effect of NOSM led to increasing maintenance and employment in universities and hospitals/health services and increasing the sense of empowerment among participants
Strasser, 2016 ^[15]	Evaluation of the results of NOSM undergraduate and graduate medical students with an emphasis on NOSM social responsibility	Administrative data from NOSM and external sources, as well as surveys and interviews with 220 NOSM students and alumni and the CRaNHR	The socio-economic impacts of NOSM included new economic activity, more than double the school budget. Increased maintenance and employment for universities and hospitals/health services and the sense of empowerment among community participants, which was mainly attributed to NOSM Conclusion: The success of NOSM in graduating physicians with practice skills and commitment in rural/remote communities and the significant socio-economic impact of NOSM on northern Ontario
Siega-Sur <i>et al.</i> , 2017 ^[16] A cross-sectional survey study	Describing the effect of socially accountable health professional education on graduates, and their motivation for community-based services, readiness to address local health issues, choice of job, and place of training	Cross-sectional survey of graduates of two medical schools in the Philippines (SHS-Palo and medical school with a more conventional curriculum) (69 and 75 people)	There was a more positive attitude toward social services among SHS-Palo graduates SHS-Palo alumni were more likely to provide rural (in rural and remote areas) or urban public health services Conclusion: Achieving a key goal to create a willing, capable and committed health-care workforce in disadvantaged rural communities by SHS-Palo medical graduates
Woolley <i>et al.</i> , 2017 ^[17] A non-randomized, controlled study	Investigating the effect of SAHPE students and graduates on services and health outcomes of children and mothers	Survey of 827 mothers (with more than 1 child under 5 years of age) through interviews in two study groups: 5 communities that received services from SAHPE medical graduates or final year medical students (intern), and 5 communities that serviced services from trained (non-SAHPE) graduates in similar areas	Cases were more likely to have factors such as lower family gross income, discussing laboratory results for blood and urine samples, getting your first prenatal checkup before the fourth month, getting your first postpartum checkup less than 7 days after birth, full vaccination against polio, hepatitis, measles, diphtheria, pertussis, and tetanus in the group of mothers receiving services from medical graduates and interns trained with SAHPE in comparison with the group of mothers receiving services from graduates trained with non-SAPHE programs Improvement of many of the major child and maternal health services regardless of income constraints as well as positive outcomes related to child health with the presence of SAHPE medical graduates or interns in Philippine communities
Woolley <i>et al.</i> , 2019 ^[18] A cross-sectional, self-administered survey study	Assessing social accountability and readiness of graduates from socially accountable medical schools in Australia, USA, and Sudan	Number of participants: 184 people Cross-sectional and independent survey of hospital and social health center staff (1 year after graduation [PGY1]) in 3 schools Evaluation based on the THEnet	High Score for Accountable Social Competencies such as “Communication Skills,” “Teamwork,” “Professionalism,” “Job Readiness,” “Commitment to Practice in Rural Communities,” and “Commitment to Practice with disadvantaged Individuals” for medical graduates of 3 SAHPE schools

Contd...

Table 1: Contd...

Author(s) Year	Objective	Study population Method of data collection	Results
		framework	Development of the same amount of medical workforce compared to traditional medical schools; however, SAHPE graduates had a greater commitment to health equity, working with disadvantaged populations, and fulfilling local health care needs
Clithero-Eridon <i>et al.</i> , 2020 ^[19] An observational design	Assessing the understanding of medical students and educators about the concept of social accountability	Survey of 332 participants, including first- and sixth-year medical students, medical educators and community educators using an observational design	Understanding social accountability as an action or set of actions toward identifying the needs of patients and society Some respondents defined social responsibility as multidimensional
Benijjane <i>et al.</i> , 2021 ^[20] A cross-sectional observational survey study	Evaluation of knowledge, perceptions, and implementation of social accountability by nursing education institutions	Collecting data through online questionnaires from 11 students and then completing them by 50 teachers and 213 other students voluntarily, and creating aspects and principles of social accountability based on literature review as well as conducting 8 semistructured interviews with administrative staff (selected by targeted sampling method) The mean age of teachers was 40.2 years and the mean age of students was 19.7 years	36% of students had no knowledge regarding social accountability There is a need to increase awareness about social accountability in addition to strengthening training programs and refining measures in this regard

with disadvantaged populations, professional behavior, ability to work in teams, and communication skills. Thus, social accountability helps to nurture a competent and appropriate medical workforce. In the study conducted by these researchers, in three different countries, SAHPE medical graduates were ranked similarly or higher than graduates of traditional medical schools in terms of biomedical competencies (general performance and clinical skills).

Social accountability is an obligation to direct educational, research, and service activities toward the high-priority health concerns of the communities and areas that the universities must serve. These priorities are jointly defined by the government, health-care organizations, and the community.^[13] According to the results of the present study, in addition to cultivating a decent workforce, social accountability can improve health-care services. According to a study by Cristobal and Worley in an area of the Philippines that is covered by ADZU-SOM, since the graduates of the University of Social Responsibility first went to work in the area 15 years ago, the mortality rate of children under 5 years has decreased from 89 per 1000 live births to 8 per 1000 births.^[13] Woolley *et al.*^[17] also reported that SAHPE medical graduates appear to be significantly enhancing child and maternal health services such as prenatal and postnatal care in some parts of the Philippines. Findings show that communities with SAHPE graduates and interns may be better able to reduce socioeconomic inequalities through more equitable access to essential maternal health services (including long-term breastfeeding), which is key to child well-being. Mothers of lower-income families, in communities served by conventional medical graduates, are significantly less likely to measure their weight during pregnancy, consume syrup or iron tablets, and receive help from doctors in giving birth to their newest

child. Thus, the SAHPE graduates and interns are developing an efficient health-care system that offers a wide range of health services tailored to community needs and availability.

One of the characteristics of social accountability is the strengthening of partnerships between health-care organizations and the communities they serve.^[19] However, there are different perceptions and views on what social responsibility really is and how its effectiveness can be measured.^[15] Clithero-Eridon *et al.*^[19] also reported that most respondents identified an individual as the responsible party and did not specify to whom these individuals should respond, and few attributed the responsibility to an organization or institution. This shows that what may be lacking is the recognition of the role of institutions in serving society, apart from the responsibilities of individuals. According to a study by Benijjane *et al.*,^[20] 36% of students were unaware of social accountability. These researchers stated that there is a need to increase awareness about social accountability in addition to strengthening educational programs and refining measures in this regard.

Conclusion

The results of the present systematic review showed that social accountability can both help cultivate a healthy and skilled medical workforce and be effective in improving service delivery to the public. On the other hand, there are different perceptions and views on what social responsibility really is and how its effectiveness can be measured, and there is a need to raise awareness in this area for students.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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