Original Research Paper

Dental education in India: perceived learner impact of community immersion on social awareness

Pushpanjali Krishnappa[1], Jyotsna Sriranga[2], Malu Mohan[3], Anita P Sagarkar[4], and KM Shwetha[5]

[1]PhD, MHPE, MDS, Department of Public Health Dentistry Faculty of Dental Sciences, M S Ramaiah University of Applied Sciences, Bengaluru, India
[2]MDS, MHPE, Health Professions Education Consultant & Public Health Dentist Director & CEO, Urja- Catalysts for Transformation, Bangalore, India
[3]PhD, MDS, Research Consultant, Women's Institute of Social and Health Studies, Chennai, India
[4]MDS, Associate Professor, Department of Public Health Dentistry Faculty of Dental Sciences, M S Ramaiah University of Applied Sciences, Bengaluru, India
[5]PhD, MDS, Associate Professor, Department of Public Health Dentistry Faculty of Dental Sciences, M S Ramaiah University of Applied Sciences, Bengaluru, India

Abstract

Background: The Department of Public Health Dentistry at the Faculty of Dental Sciences, Ramaiah University of Applied Sciences, implemented a social accountability education program from 2007 to date. This article examines the educational theories supporting the design and the impact it has had on students. **Method:** Dental students participate in community-focused and community-based programs from the third to the fifth year of their undergraduate studies. The paper focuses specifically on the third year, when social accountability education is taught through community-oriented and community-based sessions. The mandatory 15-day community program is based on a socio-constructivist paradigm and provides a platform for experiential learning. Students experience first-hand the health issues, health systems, and social determinants of health in a rural community. **Results:** 748 students, who participated in the education program from 2007 to 2023 reported that the community-based program enhanced their attitudes towards community service, developed empathy, improved communication skills and deepened their understanding of social determinants of health. **Conclusion:** Engaging in community-based, socially responsible education enables learners to comprehend the determinants of health and to assess their existing competencies in delivering care. By remaining in the community, learners can develop meaningful connections and understand their accountability towards the community.

Key words: Education, Social Accountability, Community Immersion, Dental Education, Community-based Education

Date submitted: 28-February-2024

Email: Jyotsna Sriranga (drsjyotsna@gmail.com)

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Citation: Krishnappa P, Sriranga J, Mohan M, Sagarkar R A, Shwetha KM Dental education in India: perceived learner impact of community immersion on social awareness. Educ Health 2024;37:345-351

Online access: www.educationforhealthjournal.org
DOI: 10.62694/efh.2024.36

Published by The Network: Towards Unity for Health

Introduction

Healthcare organizations worldwide are mandated to provide socially accountable education to their students. These organizations have implemented various mechanisms to ensure that their students are socially accountable. However, there is a paucity of reports exploring the constructs of social accountability education and its impact on learners. This paper presents our approach for designing social accountability education and its self-reported impact on students.

According to the World Health Organization's Alma Ata Declaration,[1] healthcare workers are responsible for being socially accountable. Healthcare professionals have a moral obligation to address the priority health needs of the communities they serve.[2] Healthcare providers must fulfil the core values of social accountability, which includes

being relevant, effective, and of appropriate quality. They must aim to resolve systematic differences in health outcomes that result from unequal positions in society.[3] Social accountability education is critical for producing socially accountable practitioners.[4]

Social accountability education encompasses a broader spectrum of educational approaches that range from fostering awareness of social responsibility to adopting responsive actions, and ultimately engaging with communities to fulfil their health needs with measurable outcomes.[5] Social responsibility in healthcare education is reflected in classroom-based courses that raise awareness of community and public health needs. These courses introduce learners to public health policies and health determinants. Community-based training programs that promote social responsiveness are also available, in which learners engage within the community and observe or participate in health-related activities. Students and graduates need to demonstrate responsive actions, addressing the needs of the community. Social accountability involves graduates' intended plans and their measurable impact on society.[5]

The Department of Public Health Dentistry at the Faculty of Dental Sciences, Ramaiah University of Health Sciences, adheres to the principle of cultivating socially responsible dental healthcare providers. From their third year of undergraduate study, dental students are engaged in community-focused and community-based programs. The program was initiated in 2006 to experientially introduce the students to the primary health care system, social determinants of health, and health needs of the rural population. It has evolved over the past 18 years to encompass with an opportunity to understand the needs of the community and conducting research into priority focus areas such as oral cancer and fluorosis. The program delivery has also progressed from its initial stages based on student feedback. The focus of the program is to strengthen community connections through scaffolded experiential learning experiences. This paper specifically examines social accountability instruction delivered in the third year of the curriculum and its impact on the learner.

Methods

In this section we describe the educational design and the tool used to obtain student feedback.

Context of the educational design

In the third year of dental studies, students are introduced to three key public health concepts: social determinants of health; health care delivery; and health promotion. These are taught primarily through interactive lectures aimed at familiarizing students with public health terminology, sensitizing them to the diverse healthcare needs of underserved populations, and introducing them to the healthcare system. Methods such as team-based activities, group discussions, and debates facilitate active learning. Towards the end of the third year, the curriculum expands to global oral health issues, cross-cultural sensitization, and global oral health policies. This phase of education is largely based on cognitivist theories.

Community-based social responsiveness education in Year 3 is crucial for teaching social accountability at the institution. Dental students are trained to be socially accountable in an inter-professional setting, understanding the roles of other health professionals in patient and community care. Developed by the Department of Community Medicine, Ramaiah Medical College in 2004 and expanded to dental students in 2006, this program included nursing, physiotherapy, and pharmacy students by 2015.
The community immersion experience is a mandatory 15-day program worth five credits, designed to give students first-hand experiences of health issues, health systems, and social determinants of health in a rural community. The objective is to produce socially accountable healthcare workers capable of addressing community health needs.

The program consists of three phases: the preparatory phase, the experiential learning phase, and the report generation phase. In the preparatory phase, expectations are set and cultural sensitivity is instilled through role-playing and simulations, fostering empathy and socio-cultural communication skills.

The experiential learning phase lasts 15 days, with 10 days in a rural community and 5 days in an urban slum. In the rural setting, students engage in 6-8 hours of daily educational activities, including creating social maps, conducting health surveys, implementing school health programs, and providing oral health services focused on health promotion and disease prevention. The program also includes "shramadaan," where students contribute to the community through tasks like painting schools, establishing kitchen gardens, or

setting up waste disposal systems. In the urban slum, students provide similar health services without residing there.
Activities are team-oriented, involving students from various disciplines such as medicine, dentistry, nursing, physiotherapy, and pharmacy, promoting interdisciplinary collaboration. Students prepare by reviewing recommended readings, supported by faculty and residents who provide briefings, debriefings, and on-ground assistance, facilitating discussions and ensuring the quality of learning activities.

Debriefing sessions allow students to share their experiences, question assumptions, and discuss challenges and solutions. These sessions form the basis for report writing, where students document their learning experiences, evaluate their understanding, and develop strategies for improvement.

Self-reported impact
Annually, from 2007 to the present, feedback has been obtained from all students who participated in the program. The feedback collected had a two-fold focus: program evaluation and impact on the learner. The instrument used consisted of 10 closed-ended questions and two open-ended questions. Of these, six closed-ended questions and one open-ended question were dedicated to program evaluation. The data gathered from this evaluation was utilized to improve the program delivery and is beyond the scope of this paper.

The following queries focused on changes in attitude, knowledge acquisition, and self-perceived outcomes of the educational experience. Students had to provide structured feedback on their learning experience and its impact on their willingness to work for disadvantaged populations. This feedback aimed to encourage discussions about their acquired knowledge or key insights and how they assess the program's influence on their personal growth. In the outcomes section, we examine students' responses concerning their learning experiences, attitudes, and impacts.

Results

Feedback was collected from students who participated in the program from 2007 to 2023, excluding the COVID-19 disruption in 2020–2021. Out of 900 students, 748 (83%) submitted completed forms, including 539 female and 209 male students. Most participants (94%, 703) rated their community-based education experience as excellent or good. Additionally, 51% (n = 381) reported increased empathy towards rural communities, while 42% saw no change. About 74% (n = 549) gained a better understanding of the hardships faced by these communities. Furthermore, 65% (n = 486) reported improved communication sensitivity with disadvantaged communities. Female students consistently reported higher improvements in empathy, community understanding, and communication skills, with statistically significant differences in community understanding and communication skills ($p<0.05$). Students were grouped into three cohorts based on their training year, showing an increasing trend in reported positive improvements over the years, although this trend was not statistically significant ($p>0.05$).

Students were asked to share their experiences and key insights. A qualitative evaluation revealed seven significant themes, providing a comprehensive overview of the various impacts of the learning experience.

Theme 1: Lived realities of the disadvantaged population

"We had realized that living with all the facilities and luxury has stopped us from even attempting to know about the struggles that every villager undergoes day by day while making for their livelihood."
"What we take as granted is often a challenge to these (population) groups."
The recurring theme over the years was the lived experiences of disadvantaged populations. Participants acknowledged that their privileged environments hindered their understanding of the daily struggles faced by rural and urban poor communities. Privileged groups often take for granted what marginalized people find challenging. This exposure was especially enlightening for urban-origin students, helping them understand the daily hardships of rural agricultural communities and urban poor migrants from similar rural backgrounds.

Theme 2: Pathways to oral health disparities in the community

"The program helped us to understand the social inequalities in oral health better. We get the opportunity to experience it from close quarters."
"These people find it difficult to access or afford oral health care."
"They do not prioritize their oral health. They have so many other challenges"

"We saw so many women with betel quid and tobacco. When asked why, they said they don't know it is harmful."

The program offers insights into social inequalities impacting oral health. Participants observed these disparities firsthand. Access to and affordability of oral healthcare are major barriers for disadvantaged communities. Daily farming work and earning a living take precedence, making it hard for individuals to attend medical appointments. Traveling to the nearest town for dental care is a financial burden, with transportation costs compounding the issue. Additionally, lack of knowledge, health literacy, and social pressure contribute to oral health disparities. Students recognized the interconnection of these challenges, noting that addressing one could positively affect others. The program enhanced participants' understanding of the complexities of oral health disparities and the need for targeted interventions.

Theme 3: Improved understanding of the determinants of health

Students acquired a deeper understanding of the determinants of health through their own observations, interactions with their communities, and peer discussions. One student noted that, *"I could clearly identify how people decide their health priorities based on their education, affordability, and local customs."* Another student observed that, *"Some elderly people were not getting care because there was no one who could take them."* A third student highlighted the issue of affordability, stating that, *"Some people could not afford to travel or miss out on their daily work, so they would not go for treatment."*

Theme 4: Empathy and Kinship

Students had the chance to experience local hospitality, including warm invitations to meals. One student noted, "They may not live luxuriously, but they welcome us warmly." Spending 6-8 hours daily for ten days in the village, the students forged close relationships with the villagers, especially the children, who shared their homes and family stories. By the trip's end, students were deeply attached to the village and reluctant to leave.

Initially apprehensive about visiting a disadvantaged rural area, the students' perceptions shifted as they bonded with the community. One reflected, *"What seemed alien at first became 'our village' over ten days."* This transformation from uncertainty to familiarity and belonging resulted from their immersion in village life and interactions with the welcoming community.

Theme 5: Confidence to communicate with community members

Urban students unfamiliar with the local language and customs attended a special session to enhance sociocultural sensitivity. Those initially lacking communication confidence reported gaining assurance by observing and mimicking peers. One student noted, " *Initially, I struggled with communication, but by observing my friends and imitating them, I gained confidence* " Another mentioned, " *The villagers were patient and supportive, even when I faced difficulties with the language* " A third remarked, "*By making a deliberate effort to learn the local language, I became more proficient and my confidence grew"*

Theme 6: Sense of Responsibility and Gratitude towards the Community

Students felt a strong connection to the community, appreciating the villagers' warm, welcoming, and helpful nature. The local community respected and admired the students, especially children who aspired to become doctors. "*The children who were following around would say, I want to become a doctor like you*." Despite communication struggles, the community was patient and respectful. "*They were so patient with us and treated us with respect*," remarked one student. This bond fostered gratitude among the students and a desire to serve. They felt capable of helping the community understand their health conditions better.

"*When I explained why it is important not to neglect their oral health, the patient was convinced. I felt I could make a change*," said one student. Another expressed gratitude towards the villagers for their learning experiences, stating, "*I want to do what I can to make their health better.*" This experience taught students the importance of community engagement and instilled a sense of responsibility towards those they served. They recognized their potential impact on community health and were determined to make positive changes.

Theme 7: The Value of Interdisciplinary Healthcare

Dental students had opportunities to collaborate with interdisciplinary teams consisting of medical, nursing, pharmacy, and physiotherapy students, which allowed them to appreciate the roles played by various healthcare professionals in providing healthcare services. "*In my team, I was the only*

dental student, and I worked alongside students from medical, nursing, and physiotherapy. We learned about each other's roles and responsibilities and how to work together effectively" This interdisciplinary learning environment enhanced communication and reinforced their roles within the same healthcare team." *Initially, I was apprehensive about joining this mixed group, but I quickly realized that each team member made a unique contribution in providing comprehensive healthcare. When a patient experienced knee pain, all my team members collaborated to provide the necessary care.”*

Discussion

This paper reviews the educational frameworks underpinning the design of the social accountability (SA) education program and presents evaluation data on its impact on learners over a 15-year period.

Program Impact

The results showed that community-based education consistently benefits students, particularly in enhancing their communication, understanding, and empathy towards their community through social accountability education. Quantitative data are supported by qualitative analysis of student narratives, indicating improved comprehension of lived realities. This educational approach effectively teaches about factors affecting oral health, such as social and economic conditions, historical contexts, and intersecting identities like caste, class, and gender.[6] It underscores the complex interplay of these factors in health outcomes and fosters empathy and connections with disadvantaged groups.

Educational initiatives aimed to deepen understanding of healthcare needs, communication, teamwork, and community responsibility.[6,7,8,9] These activities promoted gratitude and boosted students' confidence in engaging with the community. Participants in interdisciplinary learning environments recognized the importance of collaboration in providing patient-centered care.
Research consistently shows that community-based education positively impacts student learning by enhancing public health and cultural competence.[10,11] It also promotes collaborative partnerships and effective care delivery.[12,13] Benefits include personal growth, exposure to diverse patients, hands-on experience, and improved inter- and intrapersonal skills.[13] Our findings support previous studies on the impact of community-based education on students.

A study on Ethiopian students revealed that female students had a more favorable view of community-based education.[14] Our research found that female students showed increased understanding, empathy, and communication skills. However, we are cautious about generalizing these results across cultures and suggest further research to confirm whether this trend is genuine, or a statistical anomaly due to higher female enrolment in our study.

Our study indicated a positive trend in student outcomes across three yearly cohorts. While the exact reasons need further investigation, we hypothesize that improvements were due to changes in the social accountability education delivery process. Feedback led to adjustments and resolved initial challenges, enhancing the educational experience. From 2007 to 2014, medical and dental students participated in community-based education, and from 2015, nursing, pharmacy, and physiotherapy disciplines were included, possibly contributing to the positive impact.

Educational theories and SA education

The educational framework of the SA education program encompasses several key components that have been observed to be effective in achieving desired learning outcomes. The structure and educational philosophy of the SA education program are grounded in three core principles: cognitivism, constructivism, and connectivism.[15] The cognitivist approach underpins the program's community-oriented focus, with the aim of equipping learners with the knowledge necessary to develop schemas on factors affecting healthcare delivery systems, social accountability values, health advocacy, and epidemiology.[15] During this foundational phase, students are introduced to a wide range of public health concepts, many of which are unfamiliar. As a result, this initial learning period was more instructor-led.

A constructivist approach was adopted in the subsequent community-based programs. This method of learning differs significantly from what students have experienced previously, through which students gain first-hand knowledge of the context, background, beliefs, and solutions to healthcare issues.[15] Connectivism, a combination of cognitivist and constructivist learning, is incorporated into both phases of learning.[15] Collaborative learning, which includes team-based activities, deepens the cognitive learning process.

Students collaborate with peers from various disciplines, working together on a range of learning activities outlined previously. This encourages communication, discussion, and conflict resolution, whereas peers and course facilitators provide feedback to support the learning process. This approach fosters social accountability in students by helping them process and build upon previous learning from instructor-led sessions and modify their existing schemas.

Experiential learning, which engages the head, heart, and hands, results in a more profound understanding of concepts and their practical application. This approach allows learners to explore their professional identity while identifying skill gaps and areas of competence in care delivery. By improving their competency through self-directed learning, learners are better equipped to meet the needs of their community. The program's success has been evident in the positive impact it has had on students' attitudes towards community services.

Limitations and future research

The information presented is derived from secondary sources, specifically from a structured program evaluation, which inherently has limitations.[16,17] Despite these limitations, the data has revealed a positive correlation between student attitudes, learning, and community-based education. However, additional research is needed to investigate the educational, sociological, and community-related factors contributing to this correlation. It is important to note that self-reported data may be subject to the influence of the social desirability bias. To provide more robust confirmation of the findings, other triangulation research methods, such as in-depth interviews, participatory action research, and ethnographic studies, could be explored.

Conclusion

This program evaluation paper demonstrates the impact of social accountability education on learners. Participants reported increased empathy, enhanced communication sensitivity, and improved understanding of the challenges faced by the community to which they were exposed. Qualitative analysis of the data illustrates the impact of learning in the community setting. Engaging in community-based, socially responsible education enables learners to comprehend the determinants of health and assess their existing competencies in healthcare delivery. Furthermore, they were able to establish learning objectives and address critical questions pertaining to equity, accessibility, cultural diversity, and affordability. By maintaining a presence in the community, learners can develop meaningful connections and derive fulfilment from making a positive impact on community members' lives. Curriculum designers and researchers may explore the effects of cognitivism, constructivism, and connectivity-based social accountability education on learners

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