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Navigating 'C' of the SPICES Model in Twin Cities of Pakistan

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Abstract

This article explores practices regarding community–based activities (CBAs) of the undergraduate outcome–based integrated curriculum in medical colleges of twin cities (Rawalpindi–Islamabad) of Pakistan. The study identifies gaps and recommendations for implementing community–oriented and community–based medical education (COME & CBME) at the undergraduate level in Pakistan. The analysis shows that the lack of learning outcomes, assessment strategies, and supervisory structure hindered any improvement in the CBAs. The dominance of the clinical faculty and the Community Medicine faculty's limited motivation were identified as significant challenges hindering advancement in the CBME. The regulatory authority was proposed to combat pre–clinical versus clinical dilemmas and interdisciplinary and interprofessional issues, including multi–sectoral and community engagement challenges faced by the COME in Pakistan.

Keywords: Community–Oriented, Medical Education, Undergraduate, Community–Based, Twin Cities, Pakistan

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1. Introduction

Traditionally, medical students are trained in tertiary care hospitals. Medical colleges are expected to expand their clinical service to the community to meet the requirements for being socially accountable to their communities (Doobay-Persaud et al., 2019). During the last 30–40 years, medical education has undergone reorganization with a focus on the health needs of population groups and communities instead of individual

patients. Learning about the manifestations and causes of social determinants of health is an essential part of becoming socially responsible Doctors (Talaat & Ladhani, 2014).

The community–oriented approach to medical education originated from the "Health for All" vision of the 1978 Alma Ata Conference. In 1984, 'The SPICES' model laid the foundation of community–based medical education (CBME) along with student–centered & problem–based learning, integrated or inter–professional teaching, elective studies, and a systematic or planned approach to medical education (Hanson et al., 2022).Transfer of medical education to the community is a challenging task. Various COME models have been introduced around the globe, ranging from a complete shift of curriculum delivery into the community settings to the incorporation of community health topics within the subject of Community and Family Medicine. "Seven–Star–Doctor" of the Pakistan Medical & Dental Council (PM&DC) includes "Community Health Promoter" as one of the seven attributes. Nevertheless, there is a lack of a structured framework for the implementation of community–based activities and their assessment (formative and summative) in the majority of medical colleges in Pakistan. Aga Khan University (AKU), Karachi, has been implementing the COME curriculum successfully since 1985 (Talaat & Ladhani, 2014), while its operationalization in the public sector of the country faced failure in 2004 (Ali & Baig, 2012). Modeling the medical education curriculum around diseases ignores primordial prevention, the Alma Ata vision of "not having the disease in the first place" (Chuenkongkaew & Wibulpolprasert, 2021).

To produce medical graduates with the qualities of a "Seven–Star–Doctor," Pakistan's regulatory authority, as a member of the WFME (World Federation for Medical Education), must implement appropriate educational reforms (Siddiqui & Malik, 2019). To meet the recommendations of the WFME, Pakistan's regulatory authority has been updating and transforming its standards, particularly concerning social accountability in medical education. A way to achieve social accountability is through community–oriented medical education (COME) in Pakistan (Ullah & Tazeen, 2021), where medical students are trained to provide primary health care to underserved communities (Abbasi, Rubab, & Malik, 2019).

Implementing the COME curriculum in medical institutions of Pakistan can help produce "Seven–Star Doctors." However, despite the regulatory authority's efforts to update its standards, studies have yet to examine whether medical colleges in Pakistan have integrated community–based activities into their curriculum over the past ten years. This study was carried out with the overall aim of integrating community–based activities (CBAs) into the existing curriculum of undergraduate medical education in Pakistan. Community–based activities (CBAs) were explored in medical colleges in Rawalpindi and Islamabad, Pakistan, where an integrated curriculum is being implemented. The study also investigated recommendations and identified gaps in implementing community–oriented and community–based medical education (COME & CBME) at the undergraduate level in Pakistan.

2. Research Method

2.1) Study Participants

An exploratory qualitative study design was utilized for this research to explore the opinions of the participants from medical colleges in Rawalpindi and Islamabad (twin cities), Pakistan. Faculty involved in teaching, supervising, reviewing, and coordinating community–based activities (CBAs), including the chairperson and member(s) of the curriculum committee, dean, and policymakers, were eligible for this study. Additional eligibility criteria included the GPs (general practitioners) /family physicians, medical educationists, faculty administrators, QEC (Quality Enhancement Cell), or any nomenclature being used for the unit involved in the review and improvement of the curriculum.

2.2) Operational Definition

In the SPICES model, “community–based” and “hospital–based” are at the opposite extremes of the spectrum. This study defines community–based activities (CBAs) on three–levels (***Figure 1***).

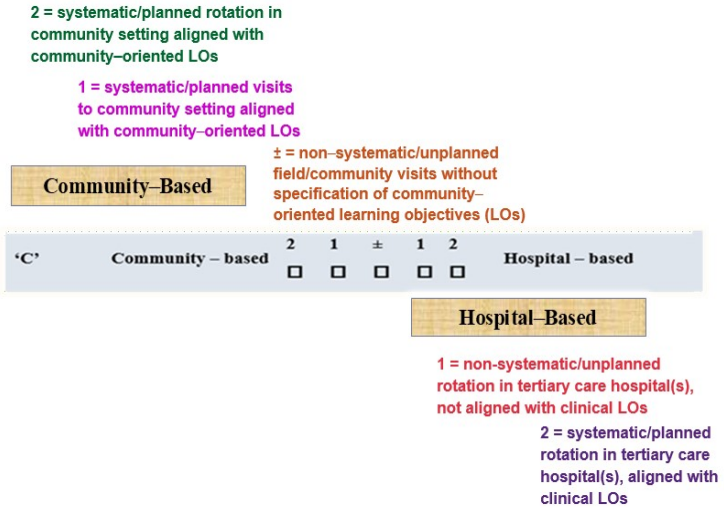

Figure 1: **Operational definition of Community–Based Activities (CBAs)**

Towards the community–based side of the spectrum, ± represents non-–systematic and unplanned field/community visits without specification of community–oriented learning objectives (LOs). Level–1 and level–2 CBAs are defined as systematic and planned visits and rotations to the community settings, aligned with community–oriented LOs. Towards the hospital–based side of the spectrum, level–1 means non–systematic and unplanned rotation in tertiary care hospital(s), not aligned with clinical LOs, whereas level–2 indicates systematic and planned rotation in tertiary care hospital(s) aligned with clinical LOs.

2.3) Sampling

The purposive sampling with maximum variation was used in selecting institutions from two cities (Rawalpindi and Islamabad) and two sectors (public and private) implementing the outcome–based, integrated curriculum. The inclusion criteria were designed to provide a diverse faculty sample regarding gender, seniority, and role (teaching or administrative). The medical colleges were approached until the data became repetitive.

2.4) Study Guide

A semi–structured interview guide was used for conducting focus group interviews (FGIs). The construct of the interview guide was developed by synthesis of the literature review findings and discussions with the prospective respondents (Artino Jr, La Rochelle, Dezee, & Gehlbach, 2014). The relevance, clarity, and effectiveness of the first draft of the open–ended questions were validated by two medical education experts. The second draft of open–ended questions was revised after an FGI with a panel of four experts for pre–testing that lasted for over two hours. On the recommendation of the panel of experts, the number of questions was reduced to six in the third draft, and the wording was rephrased many times to ensure that the revised questions were in line with the research questions.

The institutional authority (dean/principal) selected the research participants, excluding selection bias. The contextual reflexivity (Olmos-Vega, Stalmeijer, Varpio, & Kahlke, 2023) was dealt with by conducting focus group interviews (FGIs) face–to–face in the participants' workplaces, which led to a comfortable exchange of experiences and views the extent that the FGIs prompted participants to reflect on their CBAs (community–based practices), identify gaps, and formulate recommendations to improve the COME and CBME implementation at the undergraduate level in Pakistan.

2.5) Data Analysis

The "naturalized" transcription (or "intelligent verbatim") of the FGIs was carried out where audio was adapted to written norms in contrast to the "denaturalized" transcription (or "full verbatim") which includes utterances, mistakes, repetitions, and all grammatical errors (McMullin, 2023). Member checking/participant validation was done for the panel of experts and the deviant case to ensure the credibility/trustworthiness of the findings.

For data analysis, the FGI transcripts were exported to version 10 of the NVivo, ('node' is used for code in version 10). The Braun and Clarke six–step approach to thematic analysis was followed to ensure the confirmability of the findings through a rich description (Braun & Clarke, 2022). This research did not use the predetermined list of codes to eliminate any preconceived notions or biases. During open coding, in addition to the "in vivo" codes, "descriptive" codes were used to generate the initial fifty codes/nodes. References were stored within the codes whose sources were the FGIs transcripts.

Based on their relationships, the initial codes were analyzed, reorganized, and categorized into sub–categories and sub-themes. The final themes were developed from the sub–themes based on the research questions (Savin-Baden & Major, 2023). The study was evaluated using COREQ (Consolidated criteria for REporting Qualitative research) to ensure that the research findings were based on participants' experiences, not researchers' preferences.

3. Findings and Discussion

A total of 15 participants attended the four FGIs (Focus Group Interviews) conducted in the setting of the respective medical colleges in Rawalpindi– Islamabad, Pakistan. Attributes of the institutions, the FGIs, and the demographics of the participants are included in ***Table 1***.

The flow of unidirectional hierarchy (***Figure 2***) of the thematic analysis of this study is from the topmost root theme which branches into three main themes. Eight sub–themes and ten sub–categories are arranged hierarchically around the main themes. "Community–Based Activities (CBAs) in Twin Cities" is the root/topmost theme. The first main theme generated from the thematic analysis was "traditional field/community visits: single yet non-systematic CBA." The second and third main themes were "gaps in CBME (community–based medical education)" and "recommendations for the CBME," respectively.

Table 1: **Attributes of Institutions & Demographics of the FGI Participants**

Attributes of FGI[∞]	**First FGI**	**Second FGI**	**Third FGI**	**Fourth FGI**	**Total**
Code of Medical College	**M1**	**M2**	**M3**	**M4**	**04**
Sector	Public	Private	Public	Private	
City	Islamabad	Rawalpindi	Rawalpindi	Islamabad	
Duration in hrs:min[$t]	2:06	2:02	1:54	2:31	
Participant(s) left	01	01	02	NA[†]	**04**
Reason for leaving	An important task	An important task	Audio–recording perceived irrelevance	NA	
Participants did not come	01	01	NA	NA	**02**
Reason for not coming	An important task	An important task	NA	NA	
Participants present till the end	05	03	03	04	**15**
Department (Dept[¤¤]**)/Responsibility of participants (coded as P and number, P1 to P15)**					
Participant 1	Faculty Administrator (FA)	Com–Med[∞]& FA	Com–Med	Com–Med & Fam–Med**	
Participant 2	Com–Med	Com–Med & FA	Com–Med	Com–Med	
Participant 3	Examination	Com–Med	Com–Med	Fam–Med	
Participant 4	Curriculum Committee	—	—	Com–Med	
Participant 5	Com–Med	—	—	—	

∞FGI stands for Focus Group Interview

śtFor the duration, hrs: min denotes time in hours: minutes.

†NA means Not Applicable

¤¤Dept is an abbreviation for department. In case a participant is assigned multiple responsibilities, the duty relevant to this research is mentioned.

∞Com-Med refers to Community Medicine

**Fam-Med denotes Family Medicine

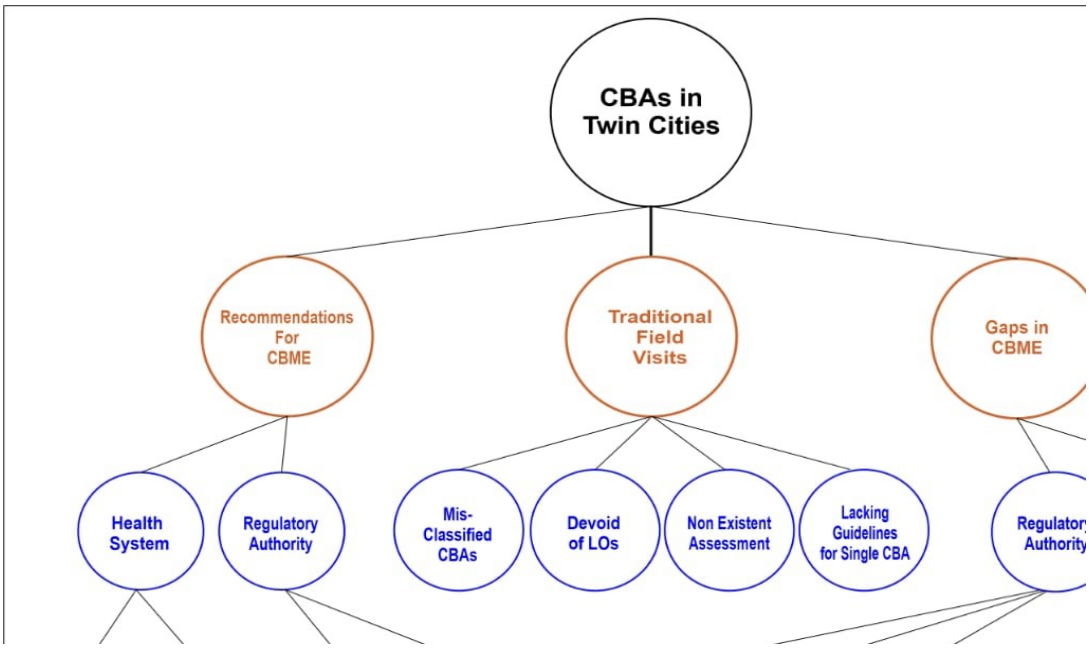

Figure 2: **Hierarchical Thematic Analysis**

3.1) Theme One: Traditional Field /Community Visits: Single yet Non–Systematic CBA

An in–depth exploration concerning the operational definition of the CBA (Figure 1) with the study participants revealed that "traditional" field/community visits were the only CBA being practiced in medical colleges implementing outcome–based integrated curricula in twin cities of Pakistan. "Traditional" meant that the research participants had witnessed the same pattern of field visits for at least fifteen years, spanning their undergraduate years to their experiences as faculty. This single CBA was not being assessed because field visits were being practiced without specification of community–oriented learning objectives (LOs), the number of visits, hours, or settings to be visited. According to participant P13 M4,

> ***Field visits are optional because they are not assessed in any way in the syllabus. That is a main drawback because most students need to attend community/field visits. Because students, these days, are assessment–oriented. Students think they have to clear the examinations and that is all!***

3.2) Theme Two: Gaps in CBME

"Gaps" in implementing community–based medical education (CBME) was the most discussed/referenced theme by the research participants. This research concluded that relying solely on traditional field/community visits cannot achieve the Pakistan Medical and Dental Council's desired outcome of producing "community health promoters" in undergraduate medical education ("National Accreditation Framework for Medical and Dental Schools, Pakistan Medical and Dental Council (PM&DC)," 2023). According to P6 M2,

> ***We need to clarify what the purpose of field visits is. When students study surgery, they know why they should learn surgery. However, when they go for field visits or do research***

in community medicine, they need help finding the purpose.

Per the PM&DC's "National Accreditation Framework for Medical and Dental Schools in Pakistan," strong commitment to social accountability is an essential benchmark of the "Mission Statement" ("National Accreditation Framework for Medical and Dental Schools, Pakistan Medical and Dental Council (PM&DC)," 2023). However, the findings of this research have shown that outcome–based integrated curricula of medical colleges need to be streamlined with the institutional mission and vision. The PM&DC evaluation criteria of medical colleges do not include a location where the institution delivers services to the community and improves the health status of marginalized populations. The participant P8 M2 suggested,

> ***For the future, I propose that medical colleges admit students from every Union Council (UC) based on the merit of that UC. After their medical graduation, such doctors should be issued licenses by the PM&DC (Pakistan Medical & Dental Council) for that union council only. Then where will they go? If this practice is done for two years, your lifelong problem will be solved.***

Participants of this research raised concerns about the safety and supervision of the field visits. They emphasized the need for a structured supervisory approach to field visits, as existing methods can be highly stressful for those supervising. This is particularly true given the high percentage of female students enrolled in the MBBS (bachelor of medicine & bachelor of surgery) program compared to male students. Currently, there is no criterion regarding the faculty–to–student ratio for field visits. According to P10 M3,

> ***For field visits, logistics are always a challenge. Because students have to be taken outside the institution, it requires resources. Above all, it is a huge responsibility. You are taking female students outside, so there might be safety and security issues. Faculty has to be alert. We need to bring the students back safely. Of course, we have to resolve all the problems with them during the field visit.***

3.3) Theme Three: Recommendations for the CBME

It was debated in this study that the need for improvement in the CBME is multifactorial. Research participants strongly proposed that regulatory authority must frame and enforce a range of community–based activities (CBAs) to develop the desired outcome of "community health promoters" in undergraduate medical education.

The research participants suggested that the regulatory authority establish and execute effective standards linking medical education to the country's healthcare system. The global initiative of the 1978 Alma Ata Conference on Primary Health Care (PHC) is still ongoing with the Universal Health Coverage (UHC) target of Sustainable Development Goal 3 (UHC; SDG 3.8.1). Pakistan has ratified all international treaties, yet its healthcare system still faces challenges of being dysfunctional and inequitable. A stronger connection to medical education is required to improve the system. The COME approach to medical education is the key to achieving better health outcomes for all (Changiz & Alizadeh, 2021). The research concluded that planning and selecting a setting/community for students' CBME is crucial. Both the medical college and the community should benefit from the COME. The amount of time dedicated to CBME can vary from 20% to 35%, depending on the institution. Some medical colleges may have a month–long rotation for CBAs each year, while others may incorporate them throughout the curriculum, including training in primary and secondary care sites (Amalba, Abantanga, Scherpbier, & van Mook, 2020). Participant P7 M2 stated,

> ***We need to contextualize our medical education to our current health system. This has to be made in the context in which we live. The regulatory body must provide guidelines on hours spent on community–based activities. The health care system cannot be improved by having tertiary care hospitals only. Additionally, for both the private and public sector medical colleges, there should be binding by the PM&DC that community–based training must be done.***

The community–oriented medical education (COME) originated from the "Health for All" vision of the 1978 Alma Ata Conference on Primary Health Care (PHC). In 1984, the 'SPICES' model laid the foundation

for the community–oriented medical education content. Social accountability in medical education demands an emphasis on community outreach (Nundy et al. 2022). Bringing medical education to the community can be an arduous task. Various models have been introduced for COME implementation around the globe, ranging from a complete shift of curriculum delivery into the community settings to incorporating community health topics within the subject of Community Medicine. However, most medical colleges in Pakistan only provide hospital–based medical education within the traditional biomedical content (Ten Cate 2021).In contrast, CBME must be implemented to ensure social accountability for the underprivileged communities of Pakistan (Doobay-Persaud et al. 2019). The COME is an approach to medical education just as the PHC is to the health system (Changiz and Alizadeh 2021). Participant P12 M4 commented,

> ***Let's take a step back. We have 123 medical colleges in our country. Why have we not been able to improve the health outcomes of our country? This is a question, and we should start from here. Why are we making our students doctors? Let's step back and think: so many doctors are being produced, but we have been unable to improve our neonatal mortality rate.***

4. Conclusion

Traditional field/community visits were found to be the only community–based activity (CBA) practiced in medical colleges, implementing outcome–based integrated curricula in twin cities of Pakistan. Lack of progress in community–based medical education (CBME) was noted by the research participants as faculty compared to their experiences as undergraduate medical students. It was concluded that conducting field visits alone is insufficient to develop the desired outcome of "community health promoters" in undergraduate medical education. The regulatory authority must enforce a range of CBAs along with effective criteria for pre–clinical to clinical, interdisciplinary to interprofessional, and safety–to–community engagement challenges faced by Pakistan's community–based medical education (CBME).

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