

Community-related Medical Education Classification: A Critical Review

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Abstract

Background: Community-related medical education has been defined under various terms, such as community-oriented medical education, community-based medical education, social accountability education, and community-engaged medical education. These terms have similar definitions and can be used interchangeably. The graduation of physicians who are familiar with the problems of the community is considered a necessity in modern medical education. As a result, numerous activities have been carried out worldwide, each given a different name.

Objectives: This study intended to provide a more comprehensive classification of community-related medical education by examining the maximum number of educational programs and activities worldwide. The classification helps create a scientific and systematic view of this category and serves as a guide in planning and implementing such education.

Methods: The present study is conducted using Carnwell and Daly's critical review method. The review was performed in different stages, including defining the review scope, identifying sources, reviewing, and constructing the texts. By reviewing documents and examining their similarities and differences, previous classifications are complete and updated.

Results: Community-related medical schools are divided into socially responsible, socially responsive, and socially accountable schools, with medical curricula that are community-oriented, community-based, and community-engaged, respectively. All schools are subdivided into education, research, and service-oriented programs.

Conclusion: Community-related educational programs can be designed and implemented at different levels according to the context.

Keywords: Community-Oriented Medical Education; Taxonomy; Classification; Social Responsibility

Background

At the World Conference on Medical Education in 1988, 12 strategies were adopted for applying fundamental changes in the medical curriculum. One strategy was related to the development of areas where education takes place, including all community resources other than hospitals (1). Additionally, the World Health Organization (WHO) has recommended a social accountability approach for medical universities to align their curricula according to the population's needs and illness prevention principles. This recommendation is especially crucial for colleges in disadvantaged areas suffering from health inequality (2, 3).

Literature affirms that more than 90% of healthcare services are provided in a community. However, the curriculum remains unchanged, with a significant focus on clinical expertise (4, 5). At the same time, community-related medical education can increase students' knowledge and attitudes toward practical medicine in rural areas (6).

In several medical schools, public health education is conducted by epidemiologists, researchers, and academics. However, if general practitioners with practical experience in the field could perform this training, community health would find its way toward improvement alongside individual health and wellbeing

(7). In fact, one important strategy to tackle health inequality is to promote active community academic involvement and develop this as the fourth mission of universities, in addition to education, research, and service delivery (8, 9). In the 1960s and 1970s, medical education was described as community-oriented medical education, and its development to community-based medical education began in 1980. Community-engaged medical education was the third wave that emerged in the first decade of the 20th century with an emphasis on the concept of mutual dependence and cooperation between the university and the community. This educational model is consistent with the socially accountable model proposed by the WHO (10).

In Iran, medical education has undergone a turbulent path in responding to the real needs of society. The reason may be obstacles such as lack of active engagement among clinical groups, insufficient budget, lack of suitable physical resources and required facilities, or even legal issues. Achieving success in social accountability depends mainly on the precise priority setting and the rational allocation of available resources. Therefore, it is necessary to pay closer attention to medical education and its objectives in a wide-ranging and profound manner (11). The results of a study conducted at Kerman University of Medical Sciences revealed that socially accountable education was assessed to be in a weakness-threat position (12). Although Iranian universities focus on community-based medical education, there is still a long way to go before reaching a satisfactory and desirable condition. Considering the existing gap, placing physicians at the core of society can have a significant impact on the compliance of these critical healthcare service providers with the actual needs of society (13).

In the last century, community-related medical education has been defined under various terms that have similar definitions and can be used interchangeably. In 2000, a complete classification of community-based medical education was created (14). With the creation of broader and more complex concepts of community-related medical education, some of these terms were excluded from the classification. In 2008, Roger Strauss classified three categories, including community-oriented medical education, community-based medical education, and community-engaged medical education, in a hierarchical manner (15). The latest classification dates back to 2015 when community-related medical

education was divided into four categories. Community service medical education is the fourth category added to the previous classification. However, it seems that an even better classification can be provided, enabling us to implement these concepts and respond to the population's needs more effectively (16).

Objectives

This study aimed to present a more comprehensive classification of community-related medical education by reviewing existing educational programs related to community needs worldwide, with the objective of determining their relevance to different social spectrums.

Methods

Despite the growing attention given to community-related medical education in recent years, there still exists a significant knowledge gap that cannot be filled by simply answering a question or presenting a simple description of the existing problem. Thus, in the present study, we chose and applied the critical review methodology offered by Grant and Booth (17). The review was carried out using Carnwell and Daly's critical review method, published in 2001. The review was performed in different stages, including determining the scope of the review, identifying sources, reviewing and criticizing documents, and applying the literature to the proposed study (18).

Defining the Scope of the Review: This review includes theoretical and experimental studies on any type of community-related medical education. Our focus is on the classification and differentiation of concepts related to community-related medical education, such as community-oriented, community-based, and community-engaged medical education and social accountability education.

Identifying and Selecting Sources of Relevant Information: The Pubmed, Google Scholar, Web of Science, SID, ERIC, and Scopus databases were searched using keywords, including community-oriented education, community-based education, community-engaged education, social responsibility, service learning, medical, and taxonomy. The search initially yielded 3010 documents. Table 1 shows the search strategies.

It should be noted that university websites and books were also included in the review. The search was carried out between the years 2000 and 2022, and the searched languages were both English and Persian. Figure 1 shows the study identification process.

Results

After a comprehensive review of all documents in the study, they were divided into three categories as follows:

- 1- Defining and classifying any type of community-related medical education
- 2- Providing a social responsibility scale for universities and their relation to community-related medical education programs
- 3- Distinguishing features in educational programs in the community

1. Defining and Classifying any Type of Community-related Medical Education

Different classifications of community-based medical education were identified. Three articles presented a relatively complete classification each, while a large number of other articles used these classifications repeatedly. The first document classified community-based medical education into three subcategories: education, research, and service (14). Subsequently, three classifications were determined, including community-oriented medical education, community-based medical education, and community-engaged medical education (15). The latest classification, developed in 2015, divides community-related medical education into four categories: community-oriented medical education, community-based medical education, community-engaged medical education, and community service medical education. During this review, it was revealed that some of the consequences of the community's relationship with universities were not included in the previous classifications. As a result, the reviewers created a fourth classification, which indicated a direct relationship with the community, creating an immediate benefit for community partners (16). Our criticism of this classification is that the fourth classification only deals with service provision in the community. Thus, it can be placed under the service delivery subtype of any community-related medical education. The time to achieve the beneficial effects of service provision and the level of community involvement can be used as criteria for differentiation of the fourth classification. Therefore, there is no need to separate it as a fourth class. We have extended the sub-classes of Magzoub to other classes of curricula related to the community.

2. Providing a social responsibility scale for universities and their relation to community-related medical education programs

In our classification, every type of community-related education was adjusted based on social obligation scales. Bolen first proposed this link. In 2016, Bolen considered the response to the population's social needs in the form of three spectrums called the social obligation scale. At one end of the spectrum is social responsibility, which attempts to identify the needs, issues, and problems of society. Regarding social responsiveness, it is crucial to recognize the population's needs and problems and determine how to plan effectively for the implementation phase at the community level. At the other end of the spectrum is social accountability, which emphasizes the effectiveness of implemented programs in properly solving shortcomings, in addition to identifying the needs and problems of society and planning for improvement. Therefore, the educational program of each medical school should be aligned with its social obligation scale (19). After reviewing the literature and expanding the model of medical education with an emphasis on community participation, our view was that community-engaged medical education is synonymous with contextualized medical education, as introduced by Bolen. According to the WHO, social accountability is also linked to community-engaged education (2). Until then, and even afterward, these concepts were not properly used because these social obligations and their coordination with the curriculum were not known clearly, as confirmed by six other articles. The review and criticism of these six articles yielded this result (2, 19-23).

3. Distinguishing features in educational programs in the community

All relevant community-related medical education definitions were extracted and entered into a table. Then, any relevant examples relating to medical universities and schools worldwide, including different curricula, were added to create a complete, informative table. Next, similarities and differences found in the review process were added as a definite column in the table. After all examples were provided and placed in front of each definition, a re-checked process with a back-and-forth approach was conducted until reaching a comprehensive classification of community-related medical education. Table 2 shows the summary of all included documents.

It should be noted that, for bias control, the searching process and document review were conducted independently by two researchers with expertise and knowledge in community-related medical education.

Each community-related medical education was considered a separate educational program, and the differences between their components were determined by reviewing the documents. An effort was made to avoid duplicate characteristics between the different types. Distinguishing features and final classifications are shown in [Table 3](#) and [Figure 2](#).

Subcategories of each education program are shown in [Figures 3-5](#).

Applying the Literature to the Proposed Classification

Once the classification was finalized, numerous examples found in the literature review were included to test it, as shown in [Table 4](#). This new classification can include almost every community educational activity.

Discussion

After conducting a critical review of the classifications of community-related medical education, previous classifications were expanded, and some amendments were made. This study differentiated between various classifications by creating definite criteria. Although the developed indicators for the first level seemed cleaner in differentiating various types of community-related medical education, distinctions between different subcategories of education, research, and service provision were less clear-cut.

For instance, a university may take an active part in participatory community-based research and act as community-engaged medical education; however, in service provision, it might be regarded as community-based medical education. Reviewing the literature on community-related medical education worldwide, we distinguished the differences between various types of education. In general, the distinguishing feature of community-engaged medical education is the active participation of community members in all stages of the educational program, including defining needs, goals, and teaching strategies, conducting the students' evaluation process, and even admitting students. Another differentiating factor is the duration of training that takes place outside the hospital, which, in this study, was suggested to be more than 50%. For example, community participation does not occur in community-oriented education. In such an educational approach, some training sessions might be held in hospitals to convey some information about the social and behavioral factors of a community, or research priorities might be determined by considering the population's health needs. However, in practice, no intervention is put into action. These activities are usually carried out

in the first year of the general practice curriculum by teaching socio-economic determinants of health in theory, and they are not highlighted as clinical aspects of the training course. In some cases, interventions might take the form of providing basic public health services and giving priority to prevention and health promotional strategies. In community service medical education, as a separate classification of Ellaway, although there are some types of active community participation, they do not last long after the end of the program, and the community is not involved in all educational activities of the university. Additionally, the duration of training outside the hospital is less than 50%. On the other hand, in universities with social accountability and a community-engaged medical education curriculum, such as Flinders in Australia, some students voluntarily choose parallel rural educational programs for one year. This means that one university has two spectrums of community-related medical education simultaneously (24), which can be considered in Iran's medical universities. Therefore, since social accountability and responsibility are two sides of a particular spectrum, the three mentioned types of community-related medical education are placed into the same continuum. Ideally, it is helpful to entirely separate all classifications of community-related medical education. However, this does not usually occur in practice, as it is a time-consuming process and brings many challenges. An example of this is Kendra University of Bangladesh, where the program could not continue to progress toward its social goals as before (2).

Furthermore, many universities in different countries, such as Japan, China, and Germany, which were previously categorized as community-based medical education, are now included in our classification as community-oriented education.

Despite the varying degrees of social responsibility in different universities, they all acknowledge that such educational programs have been effective in changing medical students' attitudes toward prevention and health promotion, elimination of health inequality, and provision of specialized health personnel in rural and remote areas (16, 24).

Higher education in the community leads to the improvement of health indicators and the return of physicians to deprived areas (86). One practical recommendation for tackling injustice and health inequality, particularly in less privileged communities, is to establish universities with social accountability that promote educational programs with an emphasis on

community engagement.

Limitations: Various structural, cultural, and social perspectives in different countries and even in different schools of the same country can cause problems in providing a comprehensive classification. Moreover, we examined the situation of universities based on written documents, which may not accurately reflect reality.

Conclusion

By providing such classifications, confusion resulting from multiple definitions can be claimed to have been largely reduced. This classification helps design and implement community-related educational programs at different levels according to the context.

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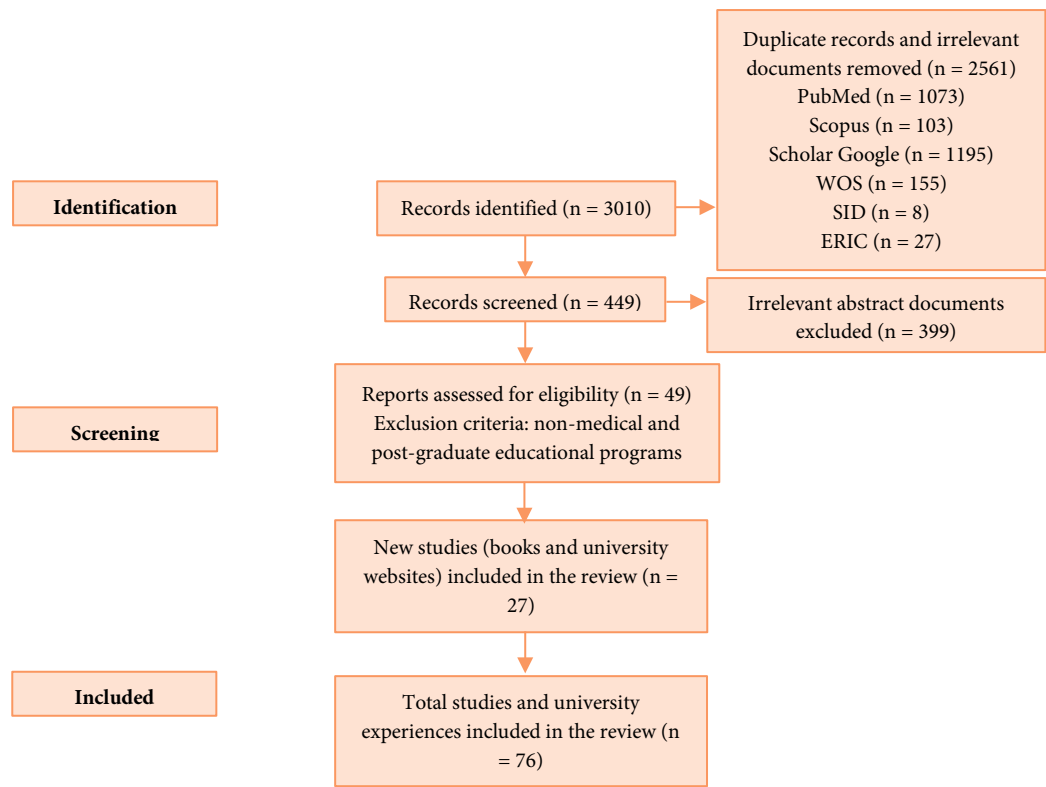


Figure 1. PRISMA study identification and selection process

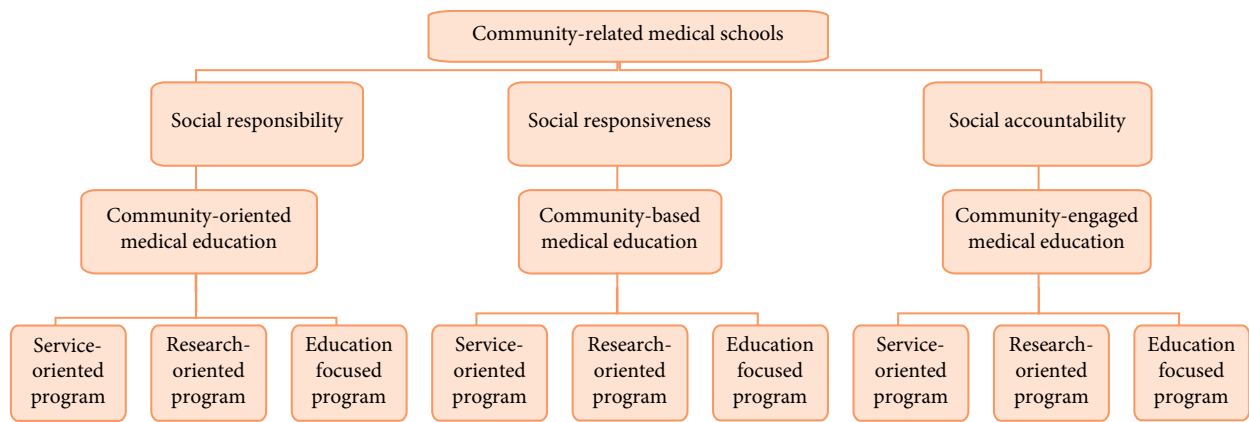


Figure 2. Different types of community-related medical education

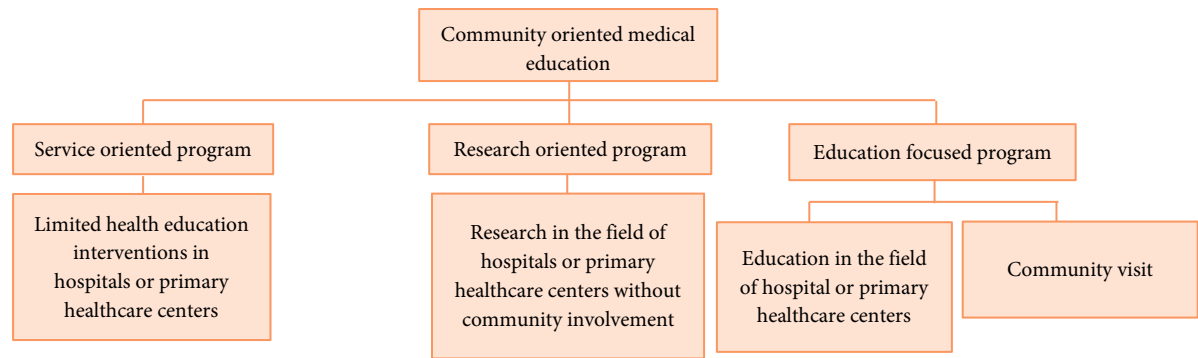


Figure 3. Subcategories of community-oriented medical education

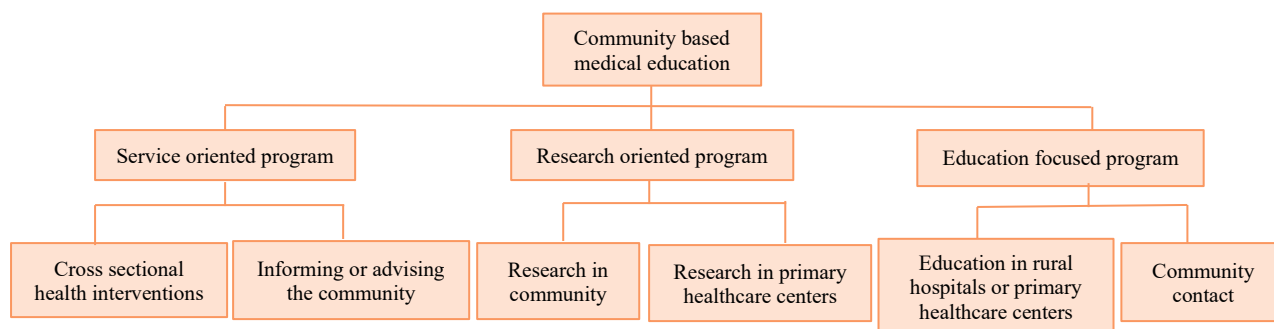


Figure 4. Subcategories of community-based medical education

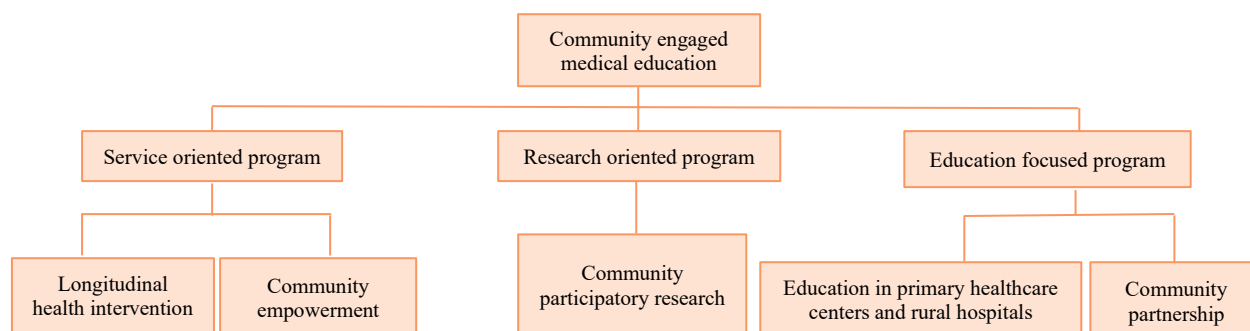


Figure 5. Subcategories of community-engaged medical education

Table 1. Search Strategies Based on Each Database

Database	Syntax
PubMed	"Community-oriented*" [Title/Abstract] OR "community-based*" [Title/Abstract] OR "community-oriented" [Title/Abstract] OR "community-engaged education" [Title/Abstract] OR "service learning" [Title/Abstract] AND "social responsibility" [Title/Abstract] AND "medical" [Title/Abstract] AND "taxonomy" [Title/Abstract] Filters: in the last 22 years
Scopus	TITLE-ABS ("Community-oriented" OR "community-based" OR "community-based" OR "community-oriented" OR "community-engaged education" OR "service learning" AND "social responsibility" AND "medical" AND "taxonomy" (LIMIT-TO (PUBYEAR, 2000- 2022) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re")) AND (LIMIT-TO (LANGUAGE, "English"))
WOS	(TI= ("community-oriented" OR "community-based" OR "community-based*" OR "community-oriented" OR "community-engaged education" OR "service learning" AND "social responsibility" AND "medical" AND "taxonomy") Document Types: Articles or Proceedings Papers or Review Articles or Data Papers. Languages: English. Timespan: 2000-01-01 to 2022-12-30 (Publication Date)
Google Scholar	"Community-oriented" OR "community-based" OR "community-based" OR "community-oriented" OR "community-engaged education" OR "service learning" AND "social responsibility" AND "medical" AND "taxonomy" in Title Abstract Keyword - (Word variations have been searched)

Table 2. Summary of Reviewed Articles

No.	First author	Year	Publication	Country	Objectives	Study design
1	Magzoub, M. E. (14)	2000	Journal article	USA	Taxonomy of community-based medical education	Reports in the literature of 31 active programs
2	Paul Worley (24)	2000	Journal article	Australia	Aims of the program Parallel Rural Community Curriculum; student selection; practice recruitment; curriculum structure, and academic content, together with lessons learned from the evaluation of the first cohort of students experience of the course	Qualitative study
3	Boyle, F. M. (25)	2002	Journal article	Australia	Describing a community-based learning program for medical students at the University of Queensland, Australia	Case study
4	Nor Mohd Adnan Azila (26)	2006	Journal article	Malaysia	Curricular approaches implemented in Malaysian medical schools	Descriptive (Review article)
5	LUBNA, A. Baig (27)	2006	Journal article	Pakistan	Development of the Community-oriented Medical Education Curriculum of Pakistan	Case report
6	AbdelRahman, S. H. (28)	2007	Journal article	Sudan	Assessing the effects of implementing the basic development needs program (a community program) in an area of Sudan	Quantitative study
7	Seifer, S. D. (29)	2007	Book chapter	USA, Dartmouth Medical School	Concepts and models for service-learning in medical education service-learning by first-year medical students	Non stated
8	Daniel Blumenthal (30)	2007	Book chapter	USA, Morehouse School of Medicine	Describing the philosophy, development, implementation, and evaluation of an interdisciplinary, community-based service-learning course in community health	Non stated
9	Franklin R. (31)	2007	Book chapter	USA, Ohio State University	A description of two programs at the Ohio State University offering service-learning opportunities for medical students	Non stated
10	Judy Lewis (32)	2007	Book chapter	USA, University of Connecticut	An urban partnership: An analysis of the experience and lessons that may be generalized to programs in other communities	Non stated
11	Bruce Bennard (33)	2007	Book chapter	USA, Quillen College of Medicine, East Tennessee State University	Introduced a fifth consecutive cohort of first-year medical students to a three-year multi-professional curriculum emphasizing health professions education within a community-oriented service environment	Non stated
12	Joellen B. (34)	2007	Book chapter	USA, East Tennessee State University	Describing the results of an effort by the faculty from the colleges of Medicine, Nursing, and Public Health, together with the WK. Kellogg Foundation's Community Partnership Initiative at East Tennessee State University to create synergy rather than antagonism among these usually conflicting demands on faculty time	Non stated
13	Thomas P. (35)	2007	Book chapter	USA, University of Pittsburgh	Community partnership in service to the homeless	Non stated
14	Sharon Dobie (36)	2007	Book chapter	USA, Washington	Developing programs that address an identifiable unmet need in a local underserved community	Non stated

15	Dongre, A. R. (37)	2008	Journal article	India	Students' perception of community medicine teaching	Qualitative study
16	Heestand Skinner, D. (38)	2008	Journal article	Nigeria	Identifying and describing the CBE programs in accredited Nigerian medical schools and reporting students' assessments of the knowledge and skills gained during their community-based educational experience	Quantitative study
17	Marahatta, S. B. N P (35)	2009	Journal article	Nepal	Reviewing the existing community-based medical education in health institutions in Nepal	Comparative study
18	Jay S. Erickson (40)	2011	Journal article	USA, Washington	Historical development of the rural medical programs at the University of Washington School of Medicine (UWSOM) and the design of a new rural LICC experience in the existing rural longitudinal medical school curriculum	Case report
19	Stewart, R. (41)	2011	Journal article	USA, Johns Hopkins	Examining the rationale, development, and challenges during the implementation of longitudinal ambulatory clerkship	Case report
20	Hunt J. B. (42)	2011	Journal article	USA	Understanding the educational goals of projects described as "service learning" or "community-based medical education" and learning the relationships between medical schools and community members	Systematic review
21	Ní Chróinín D. (43)	2012	Journal article	Dublin	Developing, implementing, and evaluating a module with a broad community focus based on primary and secondary care	Quantitative study
22	Chastonay, P. (44)	2012	Journal article	Switzerland	Describing the conception, elaboration, and implementation of the community health program and its evolution over 15 years and evaluating its outcomes	Educational program evaluation
23	Faris, A. (15)	2013	Journal article	Malaysia	Appreciating the structure and functions of a family as an essential unit in determining and influencing wellness and illness Appreciating the family dynamics in facing life events related to medicine	University-Family Partnership in Community Wellness Program (PuPUK model) evaluation
24	Larkins SL (45)	2013	Journal article	Australia	Developing and pilot testing a comprehensive evaluation framework to assess progress toward socially accountable health professions education	Mixed method
25	Chowdhury Z. (46)	2014	Book chapter	Bangladesh	Selecting case studies or 'stories' from selected schools; Defining community-based education	Case study
26	Bollela VR. (47)	2014	Book chapter	Brazil	Selecting case studies or 'stories' from selected schools; Defining community-based education	Case study
27	El-Metwally D (48)	2014	Book chapter	Egypt	Selecting case studies or 'stories' from selected schools; Defining community-based education	Case study
28	Sketch B. (49)	2014	book chapter	India	Selecting case studies or 'stories' from selected schools; Defining community-based education	Case study

29	Villiers M. (50)	2014	book chapter	South Africa	Selecting case studies or 'stories' from selected schools; Defining community-based education	Case study
30	Kikukawa, Makoto (51)	2014	Journal article	Japan	Investigating the outcomes of a community-based education program	Mixed method
31	Lee SWW (52)	2014	Journal article	UK, England	Evaluating the current provision and outcome of community-based education (CBE) in UK medical schools	Systematic review
32	Angélica Maria (53)	2015	Book chapter	Brasilia	Integrating primary healthcare with teaching-service-axis in the Faculty of Medical Sciences at Unicamp Curriculum	Case study
33	Renata Maria Zanardo (54)	2015	Book chapter	Brasilia	The Medical and Nursing Undergraduate Education in Primary Healthcare: 45 Years of Experience at Botucatu Medical School	Case study
34	Maria Katia Gomes (55)	2015	book chapter	Brasilia	The Experience of the Faculty of Medicine at the Federal University of Rio de Janeiro School of Medicine	Case study
35	Maria Neile Torres de (56)	2015	book chapter	Brasilia	The Experience at the Federal University of Ceará Medical School	Case study
36	Oscarina da Silva Damásio (57)	2015	book chapter	Brasilia	Blended Learning and Concept Map During a Primary Care Medicine Clerkship at the Medical School of Federal University of Juiz de Fora	Case study
37	Alessandra Vitorino (58)	2015	book chapter	Brasilia	Community-based Education: The Experience of the Goiás Federal University	case study
38	Marlene Rodrigues (59)	2015	book chapter	Brasilia	Community-based Education in the Medical School at the Maringá State University, Experiences and Challenges	Case study
39	Rosuita Fratari (60)	2015	book chapter	Brasilia	Health and Medical Education as Social Commitments at the Uberlândia Federal University	Case study
40	Daniela Chiesa (61)	2015	book chapter	Brasilia	The Community-based Education at the University of Fortaleza Medical School	Case study
41	Ana Claudia Camargo (62)	2015	book chapter	Brasilia	Service-learning-community integration in the Teaching of Primary Healthcare: Lessons and Challenges of the USP School of Medicine	Case study
42	Strasser R. (10)	2015	Journal article	Canada	Examples of the Implementation and Implications of Community- engaged Medical Education at Three Medical Schools	Case report
43	Holst, J. (63)	2015	Journal article	Germany	Ensuring Rural Medical Care, Including Innovative Teaching Approaches During Undergraduate Training	Educational program (qualitative designed)
44	Bannon A. (64)	2015	Journal article	UK	Describing and Evaluating the Initiative, the Personal Development Certificate (PDC): A 12-Week Community Development Program	Quantitative and qualitative design
45	Hosny, S. (23)	2015	Journal article	Egypt	Assessing the compliance of the Faculty of Medicine, Suez Canal University, to social accountability using the "Conceptualization, Production, Usability" (CPU) model	Qualitative design
46	Ellaway, R. (16)	2016	Journal article	Canada	Exploring and synthesizing the evidence on medical school-community relationships	Systematic review

47	Charles Boelen (19)	2016	Journal article	WHO, Geneva, Switzerland	Recognizing excellence in medical education and social obligation scale	Non stated
48	Amalba A. (65)	2016	Journal article	Ghana	Investigating students' perceived usefulness of COBES and its potential effect on their choice of career specialty and willingness to work in rural areas	Mixed-methods design
49	Arscott-Mills, T. (66)	2016	Journal article	Botswana	Investigating the impact of rural training on students' attitudes toward rural practice	Mixed-methods design
50	Kapanda, G. E. (67)	2016	Journal article	Tanzania	Assessing students' perceptions and attitudes toward rural practice after graduation	Quantitative study
51	Pokharel, P. K. (68)	2016	Journal article	Nepal	Describe the teaching district concept and its implementation	Narrative review
52	Strasser, R. (69)	2016	Journal article	Canada	Examples from Canadian and Australian education programs that provide the majority of clinical education in remote and rural settings	Case report
53	Siega-Sur J. L. (20)	2017	Journal article	Philippines	Describing the impact of socially accountable health professional education on graduates	Quantitative study
54	Cole, C. (70)	2018	Journal article	Cuba	Cuban Medical Education: 1959 to 2017	Review article
55	Woolley, T. (21)	2018	Journal article	Philippine	Describing differences between the practice locations of Philippines medical graduates from two 'socially accountable, community-engaged' health professional education programs	Quantitative study
56	Elyasa Elamin S. A. (71)	2018	Journal article	Gezira	Evaluating competencies and their interventions toward the community and evaluating the module from students' views	Quantitative study
57	Yoo J. E. (72)	2018	Journal article	Korea	Proposing learning objectives and an educational program for community-based medical education	Consensus workshop for curriculum development
58	Ohta, R. & Ryu Y. J. (73)	2019	Journal article	Japan	Examining students' perceptions of general medicine following community-based medical education in rural Japan	Mixed methods design
59	Ahmed, S. (74)	2019	Journal article	Bangladesh	Investigating medical students' perceptions of community-based learning experiences	Quantitative study
60	Choulagai B. P. (75)	2019	Journal article	Nepal	Assessing the organization and implementing community-based education in the Institute of Medicine	Qualitative design
61	Adefuye, A. (76)	2019	Journal article	South Africa	Investigating student's perceptions of their experience during community-based medical education training at Botshabelo District Hospital	Qualitative design
62	Lindsey Pope, (4)	2020	Journal article	UK	Evaluating sociocultural factors impeding the expansion of undergraduate medical education in general practice	Non stated
63	Massé, J. (9)	2020	Journal article	Canada	Identifying and understanding what medical trainees gain from their experience in community-based training	Qualitative study

64	Yahata, S. (77)	2020	Journal article	Japan	Investigating the long-term impact of community-based clinical training (CBCT) in Japan on current community healthcare (CH) practice	Quantitative study
65	Houbby N. (78)	2020	Journal article	UK	Reflecting on students' experiences after taking part in the community action product during their third year at medical schools	Case study
66	Marjadi B. (79)	2020	Journal article	Australia	Describing the Western Sydney University School of Medicine (WSUSoM) diversity education program, medicine in context pedagogy in teaching diverse social determinants of health to first clinical year medical students	Descriptive report (Curriculum design)
67	Amalba, A. (80)	2020	Journal article	Africa	The Role of Community-Based Education and Service (COBES) in Undergraduate Medical Education in Reducing the Mal-Distribution of Medical Doctors in Rural Areas in Africa	Systematic review
68	Ohta, R. (6)	2021	Journal article	Japan	Synthesizing the impact of the involvement of communities on the learning of medical trainees in community-based medical education	Systematic review
69	Alberti, P. (8)	2021	Journal article	USA	Why Academic Medicine Must Embrace Community Collaboration as Its Fourth Mission	Non stated
70	Mann-Jackson, L. (81)	2021	Journal article	USA	Addressing STI/HIV disparities and social determinants of health among young and transgender women of color in North Carolina, USA	Community-based participatory research
71	Guignona, M. (22)	2021	Journal article	Philippines	Describing the qualitative evidence of ADZU-SOM students and graduates having positive impacts on local health services and communities and the contextual factors associated with the school's socially accountable mission and curriculum that contribute to these impacts	Case study
72	Deepa Shah (7)	2022	Journal article	UK	Evaluating the Community Diagnosis Project	Quantitative and qualitative
73	O'Brien B. C. (82)	2022	Journal article	USA	Identifying and evaluating system-level outcomes of pre-clerkship medical students' engagement in health system improvement efforts	Case study
74	Northern Ontario School of Medicine (83)		Medical school cite	Canada	Reviewing the medical education curriculum	Non stated
75	Taibah University, College of Medicine (84)	-	Medical school cite	Saudi Arabia	The MBBS Program Student Guide (Reviewing the Medical Education Curriculum)	Non stated
76	Medical University of Khartoum (85)	-	Medical school cite	Sudan	Khartoum Community Medicine Department Curriculum	Non stated

Table 3. Distinctive Types of Community-related Medical Education

Community-related medical education	Presence percentage in the field of primary healthcare centers	Mission/Objective	Student's admission	Educational strategy	Student's assessment	Community involvement
Community-oriented medical education	Lower than 20%	Social responsibility	-	A combination of different methods/strategies	No involvement of community members	No involvement of community (community sensitization)
Community-based medical education	20% to 50%	Social responsiveness	A percentage of students from indigenous members	A combination of different methods/strategies	Limited activity of community members	Inactive and limited involvement
Community-engaged medical education	More than 50%	Social accountability	Direct role of community in the selection of indigenous members	Student-oriented, such as problem-solving, longitudinal, and spiral	Active role of community members	Active and wide-ranging involvement

Table 4. Examples of Community-related Medical Education

Community-oriented medical education					
Education focused		Research-oriented		Service-oriented	
Community visit	Education in the field of hospital or primary healthcare centers	Research in the field of hospitals or primary healthcare centers		Limited health education interventions in hospitals or primary healthcare centers	
Taibah University in Saudi Arabia (early contact) (84)	Unnan and Shimane, University in Japan (6)	-		Kowbe University in Japan (77)	
Malaya University in Malaysia (before 2005) (26)	-	-		-	
Kabangsan University in Malaysia (26)	-	-		-	
Rural health in Magdeburg (Germany) (63)	Rural Health in Magdeburg (Germany) (63)	-		-	
University of Botswana, South Africa (66)	Kilimanjaro Christian Medical University College (67)	-		-	
Uttara Adhunik Medical College, Dhaka (UAMC) (74)	Uttara Adhunik Medical College, Dhaka (UAMC) (74)	-		Uttara Adhunik Medical College, Dhaka (UAMC) (74)	
-	-	-		Imperial College of London (78)	
Pakistan universities (27)	Queen Mary University of London (64)	-		-	
Iran University of Medical Education	Iran University of Medical Education	Iran University of Medical Education		Iran University of Medical Education	
Community-based medical education					
Education focused		Service-oriented		Education focused	
Community contact	Education in rural hospitals or primary healthcare centers	Research in primary healthcare centers	Research in the community	Informing or advising the community	Cross-sectional health interventions
Mahatma Gandhi University of India (37)		-	Indian Christian College (49)	Gonoshasthaya Kendra in Bnghladesh (46)	-

Washington University (40)		-	Gonoshasthaya Kendra in Bngladesh (46)		-
Koirala Institute of Health Sciences (43), Tribhuvan University of Nepal, Nepal (75)	Koirala Institute of Health Sciences (43), Tribhuvan University of Nepal, Nepal (75)	-	Koirala Institute of Health Sciences (43), Tribhuvan University of Nepal, Nepal (75)	Koirala Institute of Health Sciences (43), Tribhuvan University of Nepal, Nepal (75)	-
	Stellenbach University of South Africa (50)	-		Stellenbosch University, South Africa (50)	Kathmandu University, Nepal (39, 68)
Malaya University in Malaysia (after 2005) (26)			Malaya University in Malaysia (26)	Malaya University in Malaysia (26)	-
University of Sao Paulo, Brazil (47, 54)	University of Sao Paulo, Brazil (47, 54)	Aga Khan University of Pakistan (2)	Aga Khan University of Pakistan (2)	Aga Khan University of Pakistan (2)	Aga Khan University of Pakistan (2)
Indian Christian College (49)	Indian Christian College (49)	-	University of Geneva, Switzerland (44)	University of Geneva, Switzerland (44)	University of Geneva, Switzerland (44)
Kandra University of Bangladesh (2)	Kandra University of Bangladesh (2)	-		Dartmouth Medical School (29)	Dartmouth Medical School (29)
University of Geneva, Switzerland (44), University of Dayton, Ohio (31)	University of Geneva, Switzerland (44), University of Dayton, Ohio (31),	-		University of Dayton, Ohio (31)	University of Dayton, Ohio (31)
Community-based medical education					
Education focused			Service-oriented	Education focused	
John Hopkins School of America (41)	John Hopkins School of America (41)	-	Morehouse School of Medicine (30)	Morehouse School of Medicine (30)	Morehouse School of Medicine (30)
-	-	-	-		University of Sao Paulo, Brazil (47, 54)
Community-engaged medical education					
Education focused		Research-oriented		Service-oriented	
Community Partnership	Education in primary healthcare centers and rural hospital	Participatory research in the community		Community empowerment	Longitudinal health interventions
Northern Ontario School of Medicine (69, 83)	Northern Ontario School of Medicine (69, 83)				Northern Ontario School of Medicine (69, 83)
Ateneo de Zamboanga University School of Medicine (Philippines) (10, 20, 21)	Ateneo de Zamboanga University School of Medicine (Philippines) (10, 20, 21)				Ateneo de Zamboanga University School of Medicine (Philippines) (10, 20, 21)

Flinders Australia (10)	Flinders Australia (10), University of Gezira (Sudan) (71)	University of Gezira (Sudan) (71)	Flinders Australia (10)	Flinders Australia (10)
Sabah University Malaysia (15)	Sabah University Malaysia (15)	North Carolina, USA (81)	Sabah University Malaysia (15)	Sabah University Malaysia (15)
Western Sydney University School of Medicine (WSUSoM) (79)	Western Sydney University School of Medicine (WSUSoM) (79)			
niversity of California, San Francisco School of Medicine (82)	University of California, San Francisco, School of Medicine (82)		University of California, San Francisco, School of Medicine (82)	University of California, San Francisco, School of Medicine (82)