DEVELOPMENT OF SKILL-BASED COMPETENCY MODULE OF COMMUNITY MEDICINE SUBJECT BY USING COMMUNITY BASED MEDICAL EDUCATION APPROACH FOR INDIAN MEDICAL GRADUATES

Thesis submitted for the award of the degree of

DOCTOR OF PHILOSOPHY

IN

COMMUNITY MEDICINE

By

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DECLARATION BY THE CANDIDATE

I declare that the thesis entitled "**Development of Skill-based Competency Module of Community Medicine subject by using Community Based Medical Education approach for Indian Medical Graduates"** submitted by me for the degree of Doctor of Philosophy (Ph.D) is the record of work carried out by me under the guidance of **Dr. Rekha Udgiri,** Professor & Head of Community Medicine, BLDE(DU) Shri.B.M.Patil Medical College, Hospital & Research Center, Vijayapura Karnataka and has not formed the basis for the award of any degree, diploma, associateship, fellowship, titles in this university or other similar institution of higher learning.

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CERTIFICATE FROM THE GUIDE

This is to certify that the thesis entitled **"Development of Skill-based Competency Module of Community Medicine subject by using Community Based Medical Education approach for Indian Medical Graduates"** submitted for the degree of Doctor of Philosophy (Ph.D) by **Dr. Praveen Ganganahalli** is the record of research work carried out by him under my supervision and guidance and that this has not formed the basis for the award of any degree, diploma, associateship, fellowship, titles in this university or other similar institution of higher learning.

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AND THE DEPARTMENT

This is to certify that the thesis entitled **"Development of Skill-based Competency Module of Community Medicine subject by using Community Based Medical Education approach for Indian Medical Graduates"** submitted for the degree of Doctor of Philosophy (PhD) by **Dr. Praveen Ganganahalli,** Ph.D scholar of Community Medicine is the record of research work carried out by him under the supervision of **Dr. Rekha Udgiri**, Professor & HOD of Community Medicine, BLDE (Deemed to be University), Shri.B.M.Patil Medical College, Hospital & Research Center, Vijayapura - Karnataka in partial fulfilment for the award of Doctor of Philosophy in the faculty of Medicine and that this work was carried out by him in the Department of Community Medicine.

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LIST OF ABBREVATIONS

Abbreviation	Full form
NMC	National Medical Council
CBME	Competency-based Medical Education
IMG	Indian Medical Graduate
CS	Communication Skill
OSCE	Objective Structured Clinical Examination
CVI	Content Validity Index
S-CVI	Scale - Content Validity Index
I-CVI	Item - Content Validity Index
TLA	Teaching Learning Assessment
CSAS	Communication Skills Assessment Scale
RBCW	Revised Basic Course in Medical Education Workshop
ACME	Advanced Course in Medical Education
FAIMER	Foundation for Advancement of International Medical Education & Research
CBE	Community-based education
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
DOAP	Demonstrate-Observe-Assist-Perform
SLO	Specific Learning Objective
ANOVA	Analysis of Variance

ABSTRACT

Introduction:

The undergraduate medical education programme is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. Thus, it is an approach in which the focus of teaching–learning and assessment is on real-life medical practice.

Objectives:

To Develop, Validate & Assess the Impact of skill-based Competency Module of Community Medicine subject by using Community-based medical education approach.

Methodology:

This study aims to Design, validate & implement skill-based competency module for and to take feedback from medical undergraduate students. Materials & Methods: An observational study was conducted by preparing the draft of the selected skill-based competencies of the community medicine subject named as community diagnosis module and validated with help of experts of subject and health education profession by using content validity Index. This is followed by the implementation of the module to second MBBS students, assessment of the outcome and feedback collection.

Results:

The Content Validity Index, based on assessments from ten field experts, yielded a score of 0.86, indicating good validity. Feedback analysis from medical student's post-implementation revealed that transitioning from classroom teaching to community experiences was the most valued aspect of the program. Student feedback indicated a

favourable consensus on various aspects of the module, including its objectives, teaching methods, materials, assessments, and active participation in activities.

Conclusion:

The development of a skill-based Competency Module for Community Medicine, by using community-based medical education approach, holds significant promise for improving the competency and skills of Indian Medical Graduates. This module will equip them with the knowledge and skills necessary to address the complex and evolving public health challenges faced by communities.

Keywords:

Community diagnosis, Community-based medical education, Competency, Perception, Students

CHAPTER I

INTRODUCTION

The goal of medical education is to prepare graduates to effectively address society's health needs. Subject-centered and time-based curricula form the foundation of the modern medical education system. The majority of assessments done are summative and offer minimal chance for students feedback. Knowledge is prioritized over attitude and abilities in the teaching-learning activities and evaluation techniques. As a result, graduates may possess exceptional knowledge but lack the fundamental clinical skills needed for practice. They could also be deficient in soft skills including professionalism, doctor-patient relationships, ethics, and communication.[1,2]

The objective of the undergraduate medical education program is to produce an "Indian Medical Graduate" (IMG) with the necessary knowledge, skills, attitudes, morals, and responsiveness to serve as a community's first-contact physician in a way that is appropriate and effective while remaining globally relevant. Therefore, it is a method where the emphasis of instruction, learning, and evaluation is on actual medical practice.[1,2]

Feedback would be included into the training process, and assessments would be regular and formative. Students are evaluated using a quantifiable criterion that is impartial and unaffected by other students' performance.[3]

For doctors, communication skills (CS) are essential. In fact, patients greatly respect them as the most crucial component of consultations. Unlike their Western counterparts, South Asian medical schools have not emphasized communication skills extensively, despite the fact that they are fundamental and teachable. Better compliance, better health outcomes, fewer lawsuits, and greater patient satisfaction

are all correlated with effective doctor-patient communication. During their housemanship, medical trainees may unconsciously or intentionally pick up some fundamental communication skills from watching their elder colleagues and classmates. Common obstacles to effective communication include the use of medical jargon, a lack of time, arrogance, and an inability to communicate in a basic local language.[4]

Since graduates' abilities are more in demand in the community than in tertiary hospitals, community-based education is widely acknowledged as a significant complement to the approaches available in medical education. Learning activities that take place in a specific setting like the community are referred to as community-based education. The activities carried out there might or might not be pertinent to the needs of community health. kinds of education that are rooted in the community, service-oriented strategy: health intervention and community development, Research-based methodology, community-based, health facility-based, and training-focused initiatives Focused on primary care and community exposure.[5,6]

The goal of competency-based medical education (CBME) is to replace traditional teacher-centered, time-based health professions education with learner-centered, performance-based instruction. The last ten years have seen CBME develop into a global reform movement. In order to meet the demand for higher-quality healthcare, CBME programs seek to develop medical professionals who can practice medicine at a specific degree of skill.[7] The World Health Organization and the "World Federation of Medical Education" (WFME) have been working together over the past 20 years to create a set of standards that are primarily comprehensive, generic, and adaptable to the needs of individual nations.[8]

It is very much necessary to teach or train undergraduates in communication skills as a part of curriculum in simulated or in real life setting (based on feasibility) by using standardized teaching – learning methodology. Present plan of work is to develop and validate the teaching-learning methodology in the form of module to train undergraduates in communication skills.

NEED OF THE STUDY

Till now the curriculum was subject oriented with attitude, Behaviour & communication as a hidden part of it. After implementation of CBME, the curriculum was student centered and more skill oriented. The faculty resistance to change their teaching pattern to novel approaches, make it difficult to implement CBME curriculum effectively. Development of standardized Module with specific objectives, teaching-learning methods and assessment of outcome will help faculty to orient towards the new skill-based curriculum & also ensure the effective implementation of CBME curriculum. The communication skill training in real life setting for undergraduate will help to achieve the basic role of Indian Medical Graduates as per CBME.

CHAPTER II

AIM & OBJECTIVES OF THE STUDY

AIM:

To develop the skill-based Competency Module of Community Medicine subject by using community-based Medical Education approach for Indian Medical Graduate.

OBJECTIVES:

Primary objective:

- To Develop skill-based Competency Module of Community Medicine subject by using Community-based medical education approach

Secondary objective:

- To Validate the skill-based Competency Module of Community Medicine subject by using Community-based medical education approach.
- To Assess the effectiveness of implementation of skill-based Competency Module of Community Medicine subject by using Community-based medical education approach.

RESEARCH HYPOTHESIS:

The development of a skill-based Competency Module for the Community Medicine subject, utilizing a community-based Medical Education approach, will enhance the competency and practical skills of Indian Medical Graduates (IMGs) in addressing public health challenges.

CHAPTER III

REVIEW OF LITERATURE

According to **Okayama M. et al.**[9] community-based education aims to prepare students for local employment in the future. The quality of training should be evaluated based on the program's outcomes. Finding out which educational activities affected students' opinions regarding community health care was the aim of the study. About 645 pupils completed the pre- and post-questionnaires. The students' "worthwhile" and "confidence" VAS scores after the clerkship were 80.2 ± 17.4 and 57.3 ± 20.1, respectively. Both scores improved after completing the clerkship. Multivariate logistic regression analysis revealed that "health education" was associated with a positive change in the attitudes of "worthwhile" (adjusted RR: 1.71, 95% CI: 1.10-2.66) and "confidence" (1.56, 1.08-2.25). Community-based education encourages students to practice community health care. The health education activity also increases their motivation. Participating in this activity probably has a positive effect and improves the program's instructional quality, according to the program's outcomes.

BR Narapureddy and associates[10] Low- and middle-income nations frequently have intraregional cultural and linguistic disparities. To accomplish the health for all aim, they must concentrate on creative teaching methods for undergraduate (UG) medical students that will increase their awareness of the social and contextual determinants of health. For first-year undergraduate students, the community and local government organized a community-oriented program. Phases of the curriculum included preliminary planning, theoretical sessions, field trips, group projects, data analysis, and results distribution. The main goals of this learner-centered, supervised educational program were to improve students' communication abilities, their capacity for observation, and their will to learn new things through

group projects. Behaviorism, constructivism, cognitivism, critical theory, sociocultural theory and humanism were among the theories of adult learning that were combined with consideration for the requirements of the students, cultural variances, and different degrees of motivation. Based on multiple complimentary learning theories in the Indian context, the COP has given the students a comprehensive learning framework.

According to **D'souza PC et al.**[11] medical school years have been linked to a decrease in empathy scores. The authors' goal was to assess how medical students' empathy levels changed after receiving a single session of communication skills instruction. The intervention group's mean JSE score was 109.7 ± 11.8 at baseline, but it significantly improved after the intervention (114.2 ± 10.6, p = 0.014). At the 3-week follow-up, however, the score dropped to 106.8 ± 11.8. The control group's mean baseline JSE score was 107.5 ± 12.4, however it decreased to 101.8 ± 16.0 during the follow-up. At follow-up, the JSE score decreased for both groups, but only for the control group (p = 0.020), which was not given the training, was the reduction statistically significant. The study found that after receiving communication skills training, empathy levels significantly improved right away and decreased during follow-up. The results indicate that in order to improve empathy and stop its deterioration over time, a regular training program should be added to the current medical curriculum.

Communication skills (CS) are essential for physicians, according to **Douglas AH et al.**[4] In fact, patients greatly respect them as the most crucial component of consultations. Unlike their Western equivalents, South Asian medical schools have not taught computer science (CS) extensively, despite it being a fundamental and teachable ability. The findings show that participants had favourable opinions of

computer science instruction, considering it to be significant, efficient, pertinent, and beneficial for individual growth. Features of experiential learning were deemed beneficial for CS acquisition by the participants. Intern students acknowledged the value of computer science and asked that instruction be extended to clinical years, including difficult communication situations.

Tamrongkunanan T et al.[12] study goal is to create a series of educational modules that will help 34 students advance their knowledge and abilities. There are three modules in the set: Modules 1 and 2 cover circuit design, transformer development, and monitoring, respectively. The study results are broken down into two sections using the Four-D model: 1. an assessment of the learning modules' efficacy and 2. a comparison of learning outcomes before and after the learning modules were implemented. The modules are evaluated using the 80/80 rule and a t-test, which are conventional standards. The results show that students who were taught using the model got improved learning outcomes, with a significance of 0.05, since the post-test scores are higher than the pre-test scores. To sum up, the suggested modules give students the opportunity to learn about fundamental electrical and electronic circuits and hone their skills in this field.

Community-based education (CBE) is strategically crucial to give medical students contextual learning, according to **Claramita M. et al.**[13] Countries aiming to improve basic health care should prioritize CBE. Nevertheless, there is a lack of curriculum direction in the CBE literature to improve undergraduate medical education in the setting of primary healthcare. In order to provide teachers and students with better, more meaningful learning experiences in primary healthcare settings, we want to create a CBE framework for undergraduate medical education (at the macro, meso, and micro curricular levels). Medical students' sociobehavioral skills

in comprehending the variables influencing health issues in everyday situations may be enhanced by community-based education. In addition to illnesses, "the social determinants of health: the conditions in which people are born, grow, live, work, and age that affects health" are other factors that impact sickness experiences. Medical students must possess adequate socio-humanistic skills in order to completely comprehend how socioeconomic variables affect individual patients, their families, and the community. Effective communication and teamwork are essential components of developing socio-humanistic abilities.

Art B *et al.*[14] Ghent University's medical program now includes a community diagnosis exercise that pairs medical students with social work master's and social welfare studies students. The course focuses on how people and the community interact when it comes to health and medical treatment. In order to create a community diagnosis, small groups of students spend a week visiting patients and their caregivers in six underprivileged urban neighbourhoods. They then integrate these experiences with public health statistics. Sessions are observed by social workers and family doctors in the area. Students must create an intervention that addresses a single community health issue as part of the course requirements. Students present their diagnosis and interventions to policymakers and community workers at the end of the course, and they receive feedback on the outcomes. According to the authors, this multidisciplinary, community-focused activity helps students understand health issues as they arise in society and provides them with knowledge about how the local community interacts with health and healthcare organizations. Real-world primary care scenarios are simulated by fusing public health data with firsthand accounts from patient interactions. The university's social responsibility is enhanced by this campus-community partnership.

CHAPTER IV

MATERIAL & METHODS

STUDY DESIGN:

A Cross-sectional study was conducted to develop, validate and implement community-based teaching-learning-assessment module, among Medical Undergraduate students of MBBS course belong to CBME curriculum.

STUDY SETTING:

Urban field practice area under Community Medicine department was included after taking permission from the Head of the department of Community Medicine for implementation of the module.

STUDY PARTICIPANTS:

- A panel of faculty experts in subject and Health Profession Education were selected and enrolled to validate the module by using scoring items.
- The undergraduate medical students of CBME batch studying in second MBBS were included in the study for implementation and assessment of impact of the module and feedback collection.

INCLUSION CRITERIA:

The undergraduate students posted to community Medicine department during second MBBS for block posting were enrolled after taking informed verbal consent and permission of head of the department.

EXCLUSION CRITERIA:

Those undergraduate students posted but were not available during the postings due to unavoidable reasons were excluded.

SAMPLE SIZE:

All the undergraduate students of second MBBS (2021 batch) and attending block posting were enrolled for implementation and assessment of the Module and for feedback collection (total 145 students attended were enrolled).

STUDY DURATION:

Study was conducted between June 2022 to December 2024.

ETHICAL CONSIDERATIONS:

Study began after the Institutional Ethics clearance **(Ref. BLDE (DU) MEC/642/2022-23 dated – 30/06/2022)** and Informed verbal consent. (Annexure II)

STUDY METHOD:

The study included the following steps,

- **Objective 1** - Development of the teaching-learning-assessment module
- **Objective 2** - Validation from the subject and health profession education experts
- **Objective 3** - Implementation to second MBBS Undergraduate students of CBME batch & assess Impact and Feedback collection

OBJECTIVE - 1

Development of the teaching-learning-assessment module,

Based on the concept of the module some skill-based competencies were selected from the CBME competency book released by the NMC in 2019, which is also applicable to the students to be enrolled for the implementation.

Module based on the selected skill-based competencies of Community Medicine subject was named as "**Community Diagnosis**" module.

Table I – Skill-based competencies included for preparation of the Module [2]

NO.	SKILL-BASED COMPETENCIES	Domain (level)	
CM 2.1	Describe the steps and perform clinic-socio-cultural and demographic assessment of the individual, family and community	S	SH
CM 2.2	Describe the socio-cultural factors, family (types), its role in health and disease & demonstrate in a simulated environment the correct assessment of socio-economic status	S	SH
CM 2.3	Describe and demonstrate in a simulated environment the assessment of barriers to good health and health seeking behavior	S	SH
CM 2.4	Describe social psychology, community behaviour and community relationship and their impact on health and disease	K	KH
CM 2.5	Describe poverty and social security measures and its relationship to health and disease	K	KH
CM 4.3	Demonstrate and describe the steps in evaluation of health promotion and education program	S	SH
CM 5.2	Describe and demonstrate the correct method of performing a nutritional assessment of individuals, families and the community by using the appropriate method	S	SH
CM 5.4	Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc. in a simulated environment	S	SH

CM 6.2	Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data	S	SH
CM 7.9	Describe and demonstrate the application of computers in epidemiology	S	KH

WHAT IS COMMUNITY DIAGNOSIS:[15]

- Community diagnosis is the identification and quantification of health problems in a given population using health indicators to define those at risk or those in need of care and the opportunities and resources available to address these factors.
- Community diagnosis is a comprehensive assessment of health status of the community in relation to its social, physical and biological environment.
- The purpose of community diagnosis is to define problems, determine available resources and set priorities for planning, implementing and evaluating health action, by and for the community.
- Community analysis is the process of examining data to define needs strengths, barriers, opportunities, readiness and resources. The product of analysis is the "community profile".

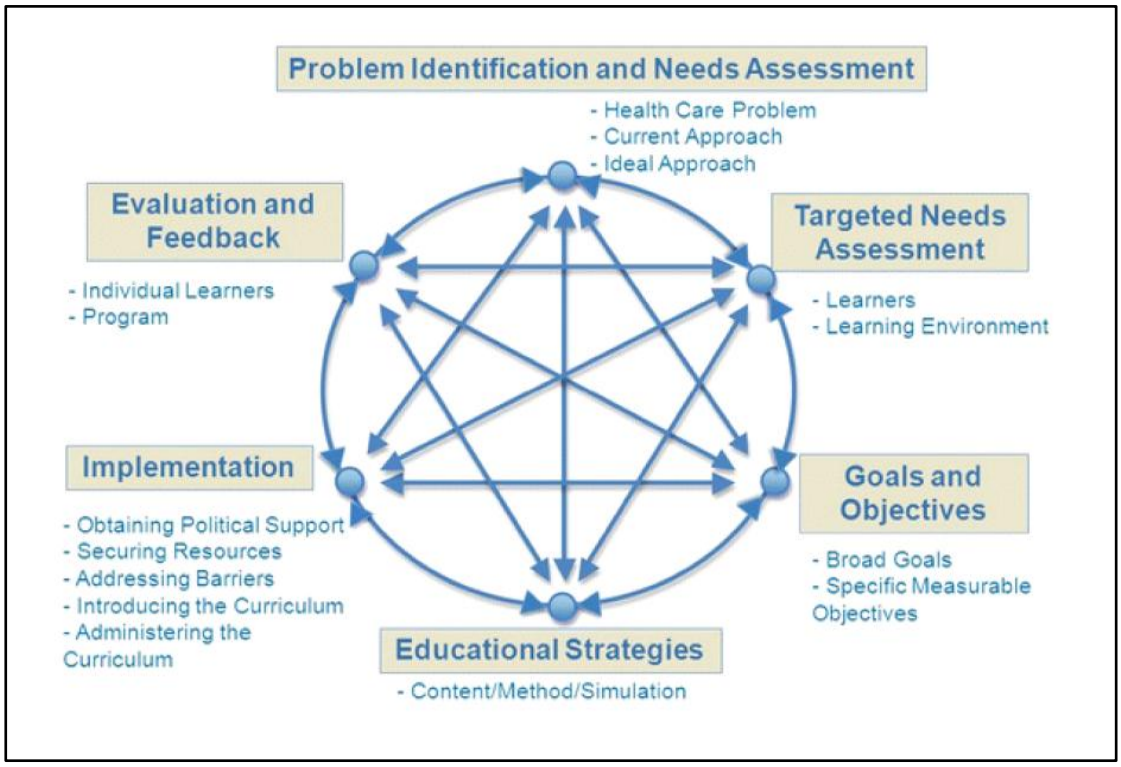
COMPONENTS OF THE COMMUNITY DIAGNOSIS,

- Determine the objectives
- Define the study population
- Determine the data to be collected
- Collecting the data - Record review, Surveys & observations, Interviews, participant observation, Screening, contact tracing, vital registration etc
- Developing instrument like questionnaires, guides, checklist
- Actual data gathering
- Data collection & summarization
- Data presentation
- Data analysis
- Problem identification & prioritizing

USES OF COMMUNITY DIAGNOSIS:

- Provide baseline information about the health status of community residents
- Identify trends in illness, injury and death and the factors, which may cause these events
- Identify available resources and their application
- Identify unmet needs
- Identify community perceptions about health issues
- Collect data regarding specific populations
- Identify at risk and high-risk populations
- Assess nutritional trends/needs, housing, occupation, healthcare providers, social serves etc.
- Monitor changing community needs
- Can be used to guide policy & program development

Image 1 – Kerns 6-steps approach[14]



STEPS TO DEVELOP MODULES;

Kern's Six-step approach to curriculum development,[15] was followed for the development of the Community Diagnosis Module in following sequence,

- Define the Problem
- Writing SMART Objectives
- Creating the Right Type of Teaching-learning-assessment methods
- Taking Feedback and Revision
- Run a Pilot (standardization)
- Preparing Final Module

Need of the module was assessed by taking the perception of the medical educators of the different medical college across the country by using the google form link and structured questionaries on "Perceptions of Medical Educators Regarding the Integration of Standardized Teaching-Learning Modules for Training Communication

Skills in Medical Undergraduate Students". Statements regarding perception of teachers, were graded on Five-point Likert's scale - strongly agree / agree / neutral / disagree / strongly disagree.

Deriving Specific Learning Objectives (SLOs) for the selected competencies,

SLOs are derived for the selected competencies and accordingly teaching-learning methods were applied.

Example:

Competency –

Describe the steps and perform clinic-socio-cultural and demographic assessment of the individual, family, and community (CM 2.1) – Shows How

- **SLO** - Perform clinic-socio-cultural and demographic assessment of the individual, family and community (in allotted family) – Shows How
    - TL method - DOAP session in classroom to community
    - Assessment method – skill assessment by OSCE using checklist.
    - Feedback – Reflection writing

COMMUNITY-BASED MEDICAL EDUCATION:

- **Experiential Learning -** Students learn through direct interaction with patients and community members in real-world settings like community. Encourages students to apply theoretical knowledge to practical scenarios. They learn by doing, which enhances critical thinking, problem-solving and decision-making skills.
    - **Eg. DOAP sessions**
- **Service-Learning** - This method combines community service with academic learning. Students engage in activities that address community health needs, such as health education, or conducting health assessments.
    - **Eg. Multispeciality camp or community clinic**
- **Problem-solving Learning** - Students are given real-world cases or community health problems to solve. These problems often reflect health issues pertinent to the specific community or population they are working with. This encourages critical thinking, teamwork, and the application of knowledge to practical challenges. Students develop diagnostic and management skills while considering the broader social, cultural, and economic context of health issues.
    - **Eg. OSCE (Objective Structured Clinical Examination)**

OBJECTIVE – 2

VALIDATING THE TEACHING-LEARNING-ASSESSMENT MODULE:

Based on the findings of the perception of need of standardized Teaching-Learning Modules for undergraduate medical students, the 'Community Diagnosis' module was prepared, which included the following headings,

- Background
- Aims & Objectives of the module
- Education contents (topics)
- Educational strategies (TLA methods)
- Implementation plan & Time-table
- Proforma to collect family information
- References
- Annexures (diet cycle, report writing)

VALIDATION PROCESS:

The validation of the module was done by using the Content Validation Index (CVI) calculation. Content validity is defined as the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose. This included following sequence,

A review panel of ten experts of the subject and medical education unit of other Institutes was formed based on their experience and representation of government & private institutes of present and other states.

Table II – The number of experts and its implication on the acceptable cut-off score of CVI[18]

Number of experts	Acceptable CVI values	Source of recommendation
Two experts	At least 0.08	Davies (1992)
Three to five experts	Should be 1	Polit & Beck (2006), Polit et al., (2007)
At least six experts	At least 0.83	Polit & Beck (2006), Polit et al., (2007)
Six to eight experts	At least 0.83	Lynn (1986)
At least nine experts	At least 0.78	Lynn (1986)

The purpose of the study, the TLA module was sent to their mail ids with checklist to give scoring to each section of the module developed and also option to give suggestion was provided.

The checklist included the items according to which the module was scored on the scale of Not relevant, somewhat relevant, relevant, highly relevant, which was further marks were give as 0 (relevance scale of 1 or 2) and 1 (relevance scale of 3 or 4).

The five items used to give scoring were as follows,

- Item 1 - "Please rate the extent to which the suggested module is well suited for the intended audience's needs."
- Item 2 - "Please rate the extent to which the suggested module effectively meets the specified learning objectives."

- Item 3 - "Please rate the alignment of the teaching-learning methods outlined in the proposed module with the specified competencies."
- Item 4 - "Please rate the effectiveness of the suggested module in evaluating the relevant skills."
- Item 5 - "Please rate the appropriateness of the teaching-learning and assessment methods in the proposed module in terms of being community-centered."

The mean scores will be calculated and statistical tests will be applied to see the significant difference in the scores. Necessary changes will be made to the module as per the suggestions given by the subject and medical education experts. Final module will be prepared for implementation.

There are two forms of CVI, in which CVI for item (I-CVI) and CVI for scale (S-CVI). Two methods for calculating S-CVI, in which the average of the I-CVI scores for all items on the scale (S-CVI/Ave) and the proportion of items on the scale that achieve a relevance scale of 3 or 4 by all experts (S-CVI/UA).[18]

Content Validity Index (CVI)[18] = (Number of Experts Who Rated the Item as Relevant or Highly Relevant) / (Total Number of Experts)

OBJECTIVE – 3

IMPLEMENTATION & ASSESSMENT OF OUTCOME OF THE MODULE

- **Target students**:

  Second Professional year students

- **Time of implementation**:

  During Block posting of 4 weeks, during Family Health study session in small groups on rotation basis

- **Instruments**:

  Implementation of the Community-based teaching & learning methods as per the module followed by statistical analysis of the information, interpretation and report writing

- **Assessment** of **Outcome of implementation:**

  It was done by using Skill assessment by DOAP - Demonstration-Observation-Assistance-Performance in the field and by OSCE -Objective Structured Clinical Examination at the end of the posting.

- **Feedback:**

  Collection and analysis by students about the Community Diagnosis Module

Table III - Time-table for implementation of the module

DAY	TIME	CONTENT	TLA METHOD	PLACE
1	9am -10am	Introduction to Family health study proforma, social aspects of health, Nutrition intake	Small group discussion	Demo room
	10am to 12Nn	Allotment of family to each student & proforma filling diet cycle		**Field**
2	9am -10am	Anthropometric measurements & general physical examination	Small group discussion f/by DOAP	Demo room
	10am to 12Nn	Anthropometric measurement of family members, diet cycle & nutrition status assessment		**Field**
3	9am -10am	Nutrition status assessment, Syatemic examnation	Small group discussion f/by DOAP	Demo room
	10am to 12Nn	Diet cycle, Environment sanitation assessment & Systemic examination		**Field**
4	9am -12Nn	Family diet calculation	Small group discussion f/by DOAP	Demo room
5	9am -12Nn	Basics of statistical analysis, Entry of allotted family information using google form		
6	9am -12Nn	Data analysis & Interpretation, Community Diagnosis		
7	9am -10am	Health education principles	Small group discussion	Demo room
	10am-11am	Planning health education activity		

	11am-12Nn	Preparation of health education activity		
8	9am -12Nn	Health education activity	Group activity	**Field**
9	9am -12Nn	Presentation of community diagnosis report, Record book completion	PPT presentation	Demo room
10	9am -12Nn	Skill assessment, Record correction	OSCE	Demo room

The sessions were conducted in accordance with the planned schedule, which calls for a one-hour classroom discussion about the various factors affecting health and disease at the community level. This is followed by a demonstration of specific skills, such as anthropometric measurements, diet cycle calculation, and socioeconomic classification calculation, which the students perform in the community with their assigned family members.

Three to four teachers were assigned to further divide the pupils, and approximately fifty to sixty students were posted to the clinical posts at a time. Each student was given a family to visit and gather data from using the proforma provided in the lesson. The faculty members that were assigned were helping the students with their fieldwork.

In order to teach the students how to analyze and interpret data, biostatisticians assisted with data input of the gathered information via a Google Form link.

Each student's data serves as a small piece of community information, and faculty members addressed the community's sociodemographic distribution, economic standing, occupational types, and the prevalence of different diseases based on the data. The pupils were able to diagnose social, medical, and environmental abnormalities in the neighbourhood with the aid of the collective information.

The faculty also talked on how to prioritize the several health issues that have been discovered and how to organize community health education events. Prior to planning the program, the students were given a briefing on the concepts of health education.

Students participated in a group exercise that involved creating health education posters, which they then used to inform their designated family members. Students were given five tasks to solve based on their experience over the previous few days as part of the OSCE question or problem-solving session used for the posting evaluation. After analysis, the result was presented as a mean score.

Using a Google Form link, students' feedback regarding the 10-day posting and community-based training session was analysed and presented.

Image 2 - Community orientation by the faculty - allotment of families, instructions.

Image 3 – DOAP session - classroom to community

Image 4 - Group Activities by the students (health education poster preparation)

ASSESSMENT:

Assessment of the skill achieved was done by using following two methods,

- **Module end exams by OSCE** (Objective Structured Clinical Examination)
    - Each task assigned to the student is called a station.
    - Thus, depending on the situation, five stations were set up and students rotate on them, spending a specified time on each one of them (5 minutes). It means that the task presented at each a station should be within this time range.
    - Generally, stations were of two types of procedure station and question station. Here question station was used where problem solving situations were prepared and given to the students to solve,
- **The skills tested by OSCE,**
    - History taking points, Physical examination, Laboratory report interpretation, Communication skills, Counselling skills, strategic planning.

Example station:

- **Station 1:** History-Taking Scenario: You are serving as the primary healthcare provider for a family. Today, a mother has brought her 5-year-old child in for a regular check-up.
- **Task** - Describe how you would go about gathering information regarding the child's nutrition and dietary habits, as well as their immunization status.

Each station was given score out of 10 marks and total scoring was calculated and the mean scores obtained was compared among students and among the stations by using ANOVA.

Feedback was collected from each student at the end of the OSCE by using google form, which consists of question on the satisfaction level of the module & community-based training & was analysed and presented.

Image 5 – conduct of OSCE at the end of the posting

STATISTICAL ANALYSIS:

- Frequency distribution expressed in percentage (%) and measures of central tendency like Mean and Standard deviation (SD).
- ANOVA test is applied to assess the trend of scores obtained across the group of the student obtained.

CHAPTER V

RESULTS

OBJECTIVE 1

Perceptions of Medical Educators Regarding the Integration of Standardized Teaching-Learning Modules for Training Communication Skills in Medical Undergraduate Students

Table IV – distribution of the participants according to academic characteristics

Variables		Frequency	Percentage
Designation	Professor	35	33
	Associate Professor	11	11
	Assistant Professor	48	45
	Lecturer/SR	11	11
Department	Community Medicine	55	52
	Biochemistry	08	08
	Microbiology	10	10
	Physiology	11	11
	Pathology	04	04
	Clinical dept	10	10
	Dentistry	05	05
Type of Institute	Government	42	40
	Private	40	38

	Deemed to be University	23	22
State of working	Karnataka	65	61
	Andhra Pradesh	08	08
	Kerala	05	05
	Maharashtra	17	16
	Tamil Nadu	05	05
	West Bengal	05	05
Medical Education Unit member	Yes	65	61
	No	41	39
Medical education training	RBCW only	82	77
	RBCW + ACME	19	18
	RBCW + FAIMER	10	10

Among those involved, the predominant group comprises faculty members (56%) holding titles such as assistant, lecturer, or tutor within the Department of Community Medicine (52%) across both governmental and private institutions, with a nearly balanced representation (40% vs. 38%) in Karnataka state (61%). Within this cohort, 61% were affiliated with the medical education unit, and nearly all have completed fundamental training in medical education, with 28% having pursued advanced training (table IV).

Table V – Perception of faculty about training UGs in communication skills

No	Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Good communication skills offer advantages beyond just fostering a better doctor-patient relationship	-	-	-	**11%**	**89%**
2	Is the inclusion of communication skills training in the undergraduate medical course perceived as effective?	-	-	11%	**27%**	**61%**
3	The skill required for taking a good history is not as extensive as that needed for conducting a physical examination of the patient.	**50%**	**38.9%**	-	5%	5.6%
4	Training in communication skills is found to be more effective in a clinical setting compared to a community setting.	**27.8%**	**27.8%**	16.7%	16.7%	11.1%
5	When taught in a community setting, communication skills training can significantly enhance empathy in medical students.	5.6%	5.6%	-	**38.9%**	**50%**
6	Utilizing a standardized Teaching-Learning module for skills training leads to improved outcomes.	5.6%	11.1%	11.1%	**27.8%**	**44.4%**

7	The implementation of a standardized Teaching-Learning Module will aid faculty in uniformly and effectively training students.	-	-	5.6%	**38.9%**	**55.6%**
8	The utilization of a standardized Teaching-Learning module will facilitate the appropriate training of skills and ensure their effective acquisition.	-	-	5.6%	**44.4%**	**50%**
9	Employing formative assessment methods for in-course evaluation of students' communication skills will prove to be more effective.	-	-	5.6%	**61.1%**	**33.3%**

As per Table II, the faculty holds a firm conviction regarding the vital need for integrating communication skills training directly into undergraduate courses, particularly emphasizing community-based training. They argue that such training not only improves students' communication prowess but also nurtures empathy towards patients. Additionally, the faculty acknowledges the significance of instituting a standardized teaching-learning module to provide students with communication skills uniformly. This method enables them to embrace emerging teaching and assessment methodologies, essential for successfully implementing a competency-based medical education (CBME) curriculum.

Table VI - Challenges faced & opinion about small group community-based training.

Challenges faced during implementation of small group teaching. (Multiple answers)	Faculty deficiency	80%
	Inadequate infrastructure	54%
	Stick to traditional method of teaching	61%
	Resistance to adapt newer techniques of teaching	65%
	Poor active participation of students	54%
	Student faculty ratio	58%
	Teachers training into newer techniques of teaching	60%
	Time constraints	74%

Table III outlines various challenges encountered, including logistical hurdles in coordinating sessions to accommodate all participants, managing diverse group dynamics, addressing time constraints for covering essential content, ensuring sufficient resource allocation, effectively assessing individual student performance, providing valuable feedback, training faculty members in small group teaching methodologies, overcoming resistance to change, dealing with student preparedness issues, and determining the ideal group size to encourage meaningful discussions and active learning.

OBJECTIVE 2:

The module was reviewed by the panel of ten experts and scoring was given to the item questions given to them. The analysis of scores given yields following results,

Table VII – Calculation process of content validity index (CVI)

Items	Internal experts					External experts						I-CVI*
	1	2	3	4	5	6	7	8	9	10	Experts in agreement	
Item – 1	1	1	1	1	1	1	0	1	1	1	9	0.9
Item – 2	0	1	1	1	1	1	1	1	1	1	9	0.9
Item – 3	1	1	1	1	1	1	1	1	0	1	9	0.9
Item – 4	1	0	1	1	0	1	1	1	1	1	8	0.8
Item – 5	1	1	1	1	1	0	1	1	1	0	8	0.8
Total	4	4	5	5	4	4	4	5	4	4	**S-CVI[#]/ Avg.**	4.3
proportion relevance	0.8	0.8	1	1	0.8	0.8	0.8	1	0.8	0.8	8.6	**0.86**
average proportion of items judged as relevance across the ten experts												

***I-CVI = Item - content validity index** [#]**S-CVI = Scale - content validity index**

Scoring of zero was given to the not relevant, somewhat relevant ranking and scoring of one was given to the relevant, highly relevant ranking given by the experts to the community diagnosis module for each item questions (Table-I). There are two forms of CVI, CVI for item (I-CVI) and CVI for scale (S-CVI). Two methods for

calculating S-CVI, in which the average of the I-CVI scores for all items on the scale (S-CVI/Ave). Acceptable CVI value of 0.80 & above is considered good.[3]

Total 152 students were trained by using the module and five Internal and five external faculty contributed for the validation process of the module, analysis of various information yields following observations,

As per the table II, feedback of the majority of students regarding the module-based training agreed to objectives, teaching-learning experience, material provided, assessment & assignment, active participation in activities. Overall rating of learning experience of the students was good to excellent & mean rating of organization and structure of the posting was 8.27±1.15.

OBJECTIVE 3:

Table VIII – Mean scores obtained for each station by the students

Stations	Total mean score	SD
1	6.99	0.85
2	7.23	1.06
3	7.30	1.12
4	7.28	1.13
5	7.52	1.06
Total	**35.33**	**1.76**

Table VIII, shows the average marks obtained by the students during the OSCE conducted at the end of the module-based teaching for each station and average total marks according to which, students scored nearly 70% and above station wise and also in total.

Table IX – ANOVA test for the scores obtained at all stations

		Sum of Squares	df	Mean Square	F	Sig.
Station 1	Between Groups	32.014	7	4.573	8.570	.000
	Within Groups	70.979	133	.534		
	Total	102.993	140			
Station 2	Between Groups	88.873	7	12.696	24.169	.000
	Within Groups	69.865	133	.525		
	Total	158.738	140			
Station 3	Between Groups	98.049	7	14.007	23.334	.000
	Within Groups	79.838	133	.600		
	Total	177.887	140			
Station 4	Between Groups	50.597	7	7.228	7.507	.000
	Within Groups	128.055	133	.963		
	Total	178.652	140			
Station 5	Between Groups	66.767	7	9.538	14.034	.000
	Within Groups	90.396	133	.680		
	Total	157.163	140			

Also, there is significant relation found during application of ANOVA to the scores obtained, which shows the similar trend of scores obtained by each student of each station and the total scores of each station (table IX).

Table X – Feedback analysis of the students regarding the module-based training

Feedback questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
community diagnosis posting met your learning objectives?	31 (20.4%)	110 (72.4%)	10 (6.6%)	01 (0.7%)	00
the learning materials presented clearly and effectively	26 (17.1%)	112 (73.7%)	13 (8.6%)	01 (0.7%)	00
the posting engages your interest and maintains your attention?	30 (19.7%)	105 (69.1%)	16 (10.5%)	01 (0.7%)	00
the assessments and assignments appropriate for your understanding of the content?	26 (17.1%)	117 (77%)	08 (5.3%)	01 (0.7%)	00
the instructor provides sufficient support and guidance throughout the posting?	59 (38.8%)	87 (57.2%)	05 (3.3%)	01 (0.7%)	00
the learning outcomes clearly communicated at the beginning of the posting?	38 (25%)	104 (68.4%)	09 (5.9%)	01 (0.7%)	00
the posting encourages active participation and interaction with peers?	46 (30.3%)	98 (64.5%)	07 (4.6%)	01 (0.7%)	00
the posting adequately addresses your questions and concerns?	29 (19.1%)	112 (73.7%)	10 (6.6%)	01 (0.7%)	00
Overall, how would you rate your	Excellent – 38 (25%)				

learning experience in this posting?	Good – 101 (66.4%) Fair – 13 (8.6%)
How would you rate the organization and structure of the posting? on a scale of minimum 0 to maximum 10	Mean score – 08.27 ± Std. deviation – 1.152 Median score – 08 Minimum score – 05 (2%) Maximum score – 10 (17%)

Table X shows the feedback analysis of the students obtained at the end of the module-based session, which shows students agreed to the meeting learning objectives (93%), learning materials presented (91%), engagement of student interest & attention (79%), appropriateness of assignments (94%), support & guidance provided (96%), clear communication of learning outcome (94%), encouragement of active participation (95%) and for adequately addressing the questions and concerns (96%). Overall rating of learning experience in the posting by students was excellent (25%) and Good (66.4%) whereas mean score given to the organization and structure of the posting was 08.27 ± 1.152.

Figure I - Students' perception on aspects of the posting did you find most valuable?

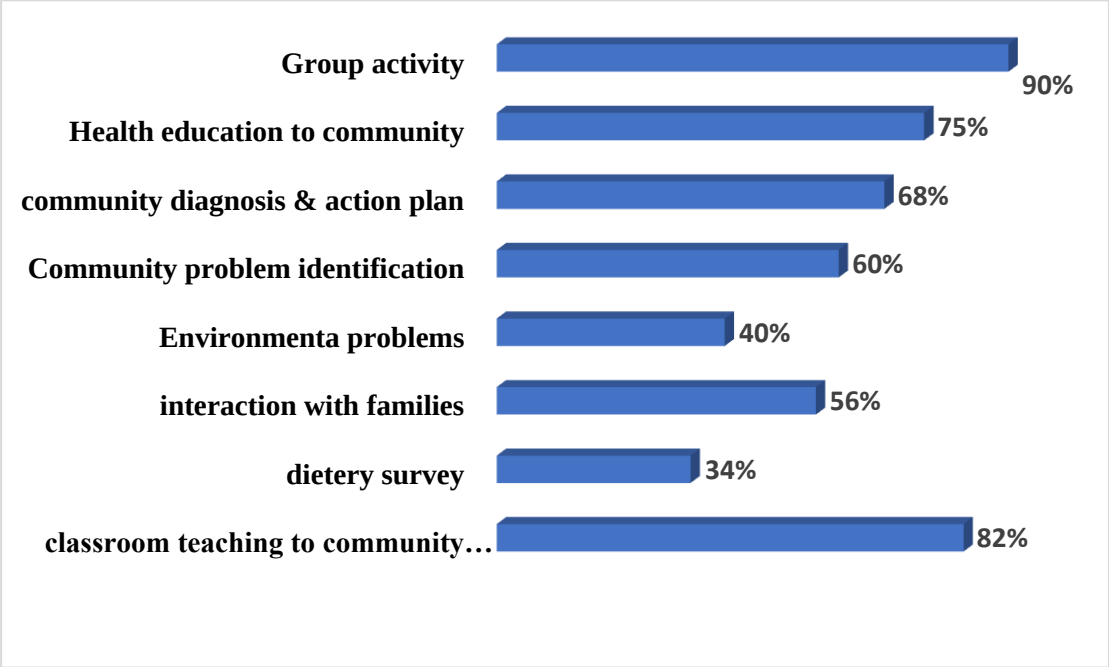
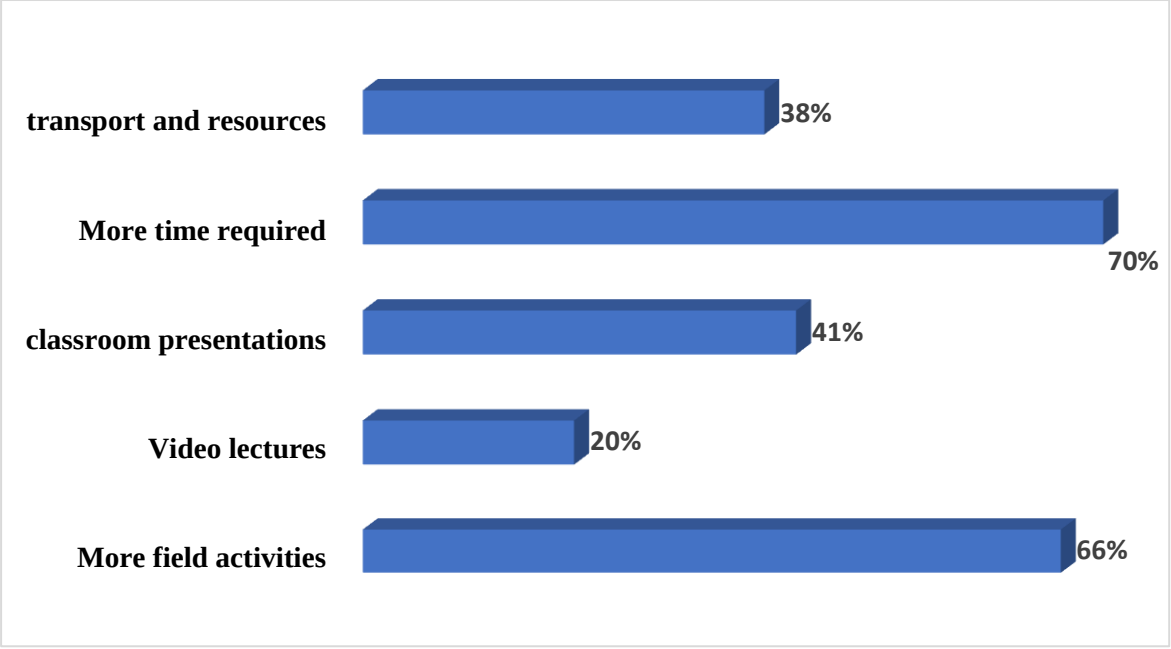


Figure II - Students' perception on aspects of the posting do you think could be improved?



Students appreciated the application of classroom teaching in to the community setup (82%) followed by group activity of health education poster preparation (90%). Other aspects were identification of community problems, planning action and health education given to the families etc (Fig-I). whereas the aspects that need to be considered for improvement suggested by the students were more field visits, time spent in community and presentation in community (Fig-II), which is not feasible due to time constraint and resource limit.

Image 6 – Group activities prepared by the students

CHAPTER VI

DISCUSSION

NEED ASSESSMENT STUDY:

The current research explored the viewpoints of faculty members engaged in teaching medical undergraduates. These faculty members express a strong acknowledgment of the importance of integrating communication skills training into the undergraduate curriculum, particularly emphasizing community-based training. Additionally, the study highlighted several hurdles that need attention, such as logistical challenges in scheduling sessions to suit all participants, effectively managing time constraints to cover essential content, ensuring proper resource allocation, and overcoming resistance to change and embracing active learning methodologies.

Educators' appreciation for the relevance and authenticity of Simulated Patient training grows with teaching tenure. This trend seems to be shaped by various factors, including the educator's internal or external status, their own encounters with communication training during medical education, and the specific medical discipline they teach. The utilization of Simulated Patients in communication training holds significant value for medical educators due to its adaptable nature and wide-ranging relevance across medical fields.[19]

A study on medical students' perceptions of doctor-patient communication training was carried out by **Richard S. and colleagues**[20] about 55.6% of respondents believed they had received enough training in this area, according to their findings. Although 85.9% of students were given theoretical instruction, only 64.6% got the opportunity to add real-world experience to their education. A sizable majority stated that they needed more practical experience with communication techniques. All

participants also concurred that the program needs to include more hands-on communication training.

Fourth-year medical students' opinions of a communication skills training course with practical learning components were examined by **Ruiz-Moral and colleagues.**[21] They observed that although students benefited from this method, it also caused a great deal of stress, especially when they were interacting with standardized patients in small groups and taking summative tests.

Notable findings were found by **Sinjita Dutta and colleagues**[22] in their study to develop, introduce and evaluate systematic, validated module on communication skills for interns. In comparison to the pre-training scores (15.45±2.9), they found that the post-training knowledge scores (16.68±2.5) had significantly increased. Additionally, self-assessed knowledge and skills increased significantly before and after the training, from 11.08±3.7 to 17.23±3.3 and 9.60±4.6 to 16±2.9, respectively. As demonstrated by their ratings on the Communication Skills Assessment Scale (CSAS), all interns demonstrated an impressively favorable attitude toward communication skills. With a mean score of 16.6±3.59 on the SEGUE framework evaluation, interns also did well. The survey items' satisfaction index showed that interns were highly satisfied, with responses ranging from 82.5% to 93%. The relevance, utility, and possible cross-departmental applicability of the module for developing communication skills were unanimously acknowledged by the faculty.

Phase I MBBS students at a Government Medical College participated in a study by **Aggarwal and colleagues**[23] to assess the impact of training on clinical abilities. This assessment-based, participant-centered method of instruction was well received by the participants. They demonstrated a strong commitment to using the

skills they had learned in real-world situations and thought the workshops on effective communication were interesting and fun.

Module validation & assessment of impact:

The present study searched through the experience & feedback of medical undergraduate who underwent training. The students appreciated the significance of community-based (community diagnosis module) teaching learning method to acquire communication skills and understand the community problems.

Fourth-year medical students' opinions of a communication skills training course with practical learning elements were examined by **Ruiz-Moral and colleagues.**[21] Although the students benefited from this method, they also felt a great deal of stress, especially during summative exams and small-group sessions where they engaged with standardized patients.

In order to develop, administer, and assess a carefully planned module aimed at improving interns' communication abilities, **Sinjita Dutta and colleagues**[22] carried out a study. Their results showed that their post-training knowledge scores (16.68±2.5) had significantly improved and were significantly more than their pre-training scores (15.45±2.9). The study also showed that interns' self-assessed knowledge increased significantly, with scores increasing from 11.08±3.7 prior to the training to 17.23±3.3 following it. Likewise, self-assessed skills improved significantly after training, rising from 9.60±4.6 to 16±2.9. The Communication Skills Assessment Scale (CSAS), which was used to evaluate interns' attitudes, revealed a generally optimistic outlook. The interns did especially well on the SEGUE framework, with a mean score of 16.6±3.59. According to the study, interns expressed high levels of satisfaction, with item values ranging from 82.5% to 93%. The success and wide applicability of the module were further highlighted by the faculty members'

universal agreement regarding its relevance, usefulness, and prospective applicability across multiple disciplines for developing communication skills.

An investigation into the effects of training on communication skills (CS) among Phase-I MBBS students at a Government Medical College was carried out by **Aggarwal P et al.**[23] The participant-centric, assessment-based method of instruction and learning was well received by the participants. They thought the training was fun and interesting, and they learned a lot about how to communicate effectively in a vivid way. Additionally, students showed a strong commitment to using what they had learned in practical situations, demonstrating a drive to put the communication skills they had gained into practice.

The job of creating a thorough evaluation tool using a competency-based framework for Cognitive Behavioral Therapy (CBT) was taken on by **Shewade HD and colleagues.**[24] The 74 components in this tool were divided into seven domains. Public health epidemiology and research methodology, biostatistics, public health administration at the primary health center level, family medicine, cultural competencies, community development, and generic competence were among these domains, along with the number of items in each. Every item in this complex measure was given a score between 1 and 5, allowing for a comprehensive and nuanced assessment of ability across the wide variety of domains the tool covers.

In the context of Community-based Medical Education (CBME), **Narapureddy BR and colleagues**[10] examined the transformative potential of an innovative Community Orientation Program (COP). Their major goal was to get students involved in the community early on in their medical school. The emphasis was on fostering a love of learning via group activities, honing observational skills, and improving communication ability. This forward-thinking strategy aimed to

transform the traditional educational model by igniting students' passion and critical thinking abilities from the very beginning.

At SMVMCH in Puducherry, India, **Ganapathy K et al**[25] developed, carried out, and evaluated a context-specific Community Based Medical Education (CBME) program. Focus Group Discussions (FGDs) with community people, group interviews with small group instructors, and student input were all part of the program's development and assessment. The CBME program involved 629 medical students in five cohorts over a five-year period. Pupils said they were better able to recognize health problems and comprehend how social, economic, and environmental variables relate to them. Additionally, they gained the capacity to interact with nearby communities regarding common health issues. According to neighborhood members' feedback, students successfully brought attention to environmental problems such rubbish dumping, stagnant water, and mosquito breeding grounds.

CHAPTER VII

SUMMARY & CONCLUSION

❖ SUMMARY:

- The integration of standardized TLA modules for training skills in medical undergraduate students has been well-received by medical educators.
- The modules, developed and validated with the input of HPE experts and a high content validity index (CVI of 0.86), were found to be both relevant and appropriate for the targeted skill-based competencies.
- The incorporation of community-based teaching-learning methods, such as the experiential "classroom to community" approach, demonstrated effective learning outcomes.
- Feedback from the educators indicated that the majority rated the overall learning experience as good to excellent, with an organizational score exceeding 8, highlighting the success of the program. Educators particularly valued the community interaction, family involvement, and the emphasis on community diagnosis and prioritization as key components of the learning process.
- However, some areas for improvement were identified, including the need for more time allocated to field activities, addressing transport challenges, and overcoming language barriers.
- Overall, the standardized TLA modules were perceived as an effective and useful tool in training future medical professionals, with the potential to enhance both their clinical and community-based skills.

CONCLUSION & RECOMENDATION:

The development of a skill-based Competency Module for Community Medicine, by using community-based medical education approach, holds significant promise for improving the competency and skills of Indian Medical Graduates. This module will prepare them with the knowledge and skills essential to address the complex and evolving public health challenges faced by communities.

The integration of community-based education in medical training will not only enhance individual competencies but also contribute to the broader goal of improving public health outcomes across the community.

CHAPTER VIII

REFERENCES

1. Regulations on Graduate Medical Education (Amendment), 2019. https://www.nmc.org.in/ActivitiWebClient/open/getDocument?path=/Documents/Public/Portal/Gazette/GME-06.11.2019.pdf
2. Competency Based Undergraduate Curriculum for the Indian Medical Graduate-2019. https://www.nmc.org.in/wp-content/uploads/2020/01/UG-Curriculum-Vol-II.pdf
3. Shah N, Desai C, Jorwekar G, Badyal D, Singh T. Competency-based medical education: An overview and application in pharmacology. Indian journal of pharmacology 2016 Oct;48(Suppl. 1): S5.
4. Douglas AH, Acharya SP, Allery LA. Communication skills teaching and learning in Nepal; what are medical students' perceptions and experiences? A qualitative study. BMC medical education 2020 Dec;20:1-1.
5. Magzoub ME, Schmidt HG. A taxonomy of community-based medical education. Academic Medicine 2000 Jul 1;75(7):699-707
6. O'Sullivan M, Martin J, Murray E. Students' perceptions of the relative advantages and disadvantages of community-based and hospital-based teaching: a qualitative study. Medical education 2000 Aug;34(8):648-55.
7. Chou FC, Hsiao CT, Yang CW, Frank JR. "Glocalization" in medical education: a framework underlying implementing CBME in a local context. Journal of the Formosan Medical Association. 2022 Aug 1;121(8):1523-31.
8. Wajid G, Sethi A, Khan RA, Aamir HS. World Federation for Medical Education: Appropriateness of Basic Medical Education standards in Pakistan.

Pak J Med Sci. 2019 Sep-Oct;35(5):1185-1191. doi: 10.12669/pjms.35.5.882. PMID: 31488976; PMCID: PMC6717464.

9. Okayama M, Kajii E. Does community-based education increase students' motivation to practice community health care? - A cross-sectional study. BMC Medical Education. 2011 Dec;11:1
10. Narapureddy BR, Patan SK, Deepthi CS, Chaudhuri S, John KR, Chittooru C, et al. Development of a community orientation program (COP) as a community-based medical education method for undergraduate medical students: an experience from India. BMC Medical Education. 2021 Dec;21:1-1.
11. D'souza PC, Rasquinha SL, D'souza TL, Jain A, Kulkarni V, Pai K. Effect of a single-session communication skills training on empathy in medical students. Academic Psychiatry. 2020 Jun;44:289-94.
12. Tamrongkunanan T, Tanitteerapan T. Development of Required Knowledge and Skills among Students through Applied Learning Modules. International Journal of Instruction. 2020 Oct;13(4):695-714.
13. Claramita M, Setiawati EP, Kristina TN, Emilia O, van der Vleuten C. Community-based educational design for undergraduate medical education: a grounded theory study. BMC medical education 2019 Dec;19:1-0.
14. Art B, De Roo L, Willems S, De Maeseneer J. An interdisciplinary community diagnosis experience in an undergraduate medical curriculum: development at Ghent University. Academic Medicine 2008 Jul 1;83(7):675-83.
15. Patel MB, Maheen M, Shaikh FM, Chandrasekhar A. Community diagnosis by conducting family health survey in the field practice area of a medical college. Int J Community Med Public Health 2019;6:5191-6.

16. Ghaderi I, Fu M, Schwarz E, Farrell TM, Paige J, SAGES Continuing Education Committee. SAGES framework for Continuing Professional Development (CPD) courses for practicing surgeons: the new SAGES course endorsement system. Surgical Endoscopy. 2017 Oct;31:3827-35.
17. Robertson AC, Fowler LC, Niconchuk J, Kreger M, Rickerson E, Sadovnikoff N, Hepner DL, Bader AM, Mcevoy MD, Urman RD. Application of Kern's 6-Step Approach in the Development of a Novel Anesthesiology Curriculum for Perioperative Code Status and Goals of Care Discussions. J Educ Perioper Med. 2019 Jan 1;21(1):E634. PMID: 31406705; PMCID: PMC6685461.
18. Yusoff MS. ABC of content validation and content validity index calculation. Education in Medicine Journal 2019 Jun 28;11(2):49-54.
19. Alvarez S, Schultz JH. Medical educators' perception of communication training with simulated patients: an explorative study approach. BMC Res Notes. 2017 Nov 29;10(1):650. doi: 10.1186/s13104-017-2988-8. PMID: 29187258; PMCID: PMC5707823.
20. Richard S, Pardoen D, Piquard D, Fostier P, Thomas JM, Vervier JF, Verbanck P. Perception of training in doctor-patient communication for students at faculty of medicine. Revue Medicale de Bruxelles. 2012 Nov 1;33(6):525-30.
21. Ruiz-Moral R, Gracia de Leonardo C, Caballero Martínez F, Monge Martín D. Medical students' perceptions towards learning communication skills: a qualitative study following the 2-year training programme. Int J Med Educ. 2019 May 3;10:90-97. doi: 10.5116/ijme.5cbd.7e96. PMID: 31055522; PMCID: PMC6766390.
22. Dutta S, Mukherjee M, Shukla V, Mishra A, Saha R, Basu SS, Basu M. Introduction of Module-based Training on Communication Skills among

Interns in a Tertiary Care Teaching Hospital of Kolkata, India. Journal of Clinical & Diagnostic Research. 2022 Mar 1;16(3).

23. Aggarwal P, Rawekar A, Dey SK, Roy R. Impact of an assessment-based training module on communication skills in phase I indian medical undergraduates. Acta Med Int 2023;10:9-13
24. Shewade HD, Jeyashree K, Kalaiselvi S, Palanivel C, Panigrahi KC. Competency-based tool for evaluation of community-based training in undergraduate medical education in India–a Delphi approach. Advances in medical education and practice 2017; 8:277-86. https://doi.org/10.2147/AMEP.S123840
25. Ganapathy K, Dongre AR. Process of Developing of Community Based Medical Education Programme Curriculum in Puducherry, India. Journal of Clinical & Diagnostic Research 2018;12(4):1.

CHAPTER IX

ANNEXURES

ANNEXURE – I - INFORMED CONSENT

Investigator:

Mr./Mrs./Ms. ……you are invited to participate in the study _____

Participation in this study is completely voluntary. This study is conducted at BLDE(DU) Shri. B.M.Patil Medical College, Vijayapura in Department of Community Medicine by Dr. Praveen Ganganahalli under the Guidance of Dr. Rekha Udgiri.

PURPOSE OF THE STUDY

PROCEDURE

RISKS

BENEFITS5

PRIVACY AND CONFIDENTIALITY

COST FOR PARTICIPATION

FINANCIAL INCENTIVE FOR PARTICIPATION

CONSENT TO PARTICIPATE IN A RESEARCH TRIAL

I voluntarily agree to take part in this study. I have read the contents of this research carefully and fully understand its contents. I have no further doubts. If I choose to take part in the study, I may withdraw at any time. I am not giving any of my legal right by signing this form. My signature below indicates that I have read, or had read to me, this entire consent form including the risks and benefits. I may ask questions at any time.

_____ _____

Signature/thumb print of participant **Date**

Signature of researchers or Person obtaining consent **Date**

ANNEXURE II

INSTITUTIONAL EHTICAL CLEARENCE CERTIFICATE

BLDE
(DEEMED TO BE UNIVERSITY)
Declared as Deemed to be University u/s 3 of UGC Act, 1956
Accredited with 'A' Grade by NAAC (Cycle-2)
The Constituent College
SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA

BLDE (DU)/IEC/ 642/2022-23 30/6/2022

INSTITUTIONAL ETHICAL CLEARANCE CERTIFICATE

The Ethical Committee of this University met on 29th July,2022 at 11.00 a.m. scrutinizes the Synopsis/ Research Projects of Post Graduate Student / Under Graduate Student /Faculty members of this University /**Ph.D. student** College from ethical clearance point of view. After scrutiny, the following original/ corrected and revised version synopsis of the thesis/ research projects has been accorded ethical clearance.

Title: "***Development of Skill-based Competency Module of Community Medicine subject by using Community Based Medical Education approach for Indian Medical Graduates".***

Name of the Principal Investigator: Dr.Praveen Ganganalli,Ass.Professor, Dept. of Community Medicine

Dr. Santoshkumar Jeevangi
Chairperson
IEC, BLDE (DU),
VIJAYAPURA

Dr.Akram A. Naikwadi
Member Secretary
IEC, BLDE (DU)
VIJAYAPURA

MEMBER SECRETARY
Institutional Ethics Committee
BLDE (Deemed to be University)
Vijayapura-586103, Karnataka

Following documents were placed before Ethical Committee for Scrutinization.

- Copy of Synopsis/Research Projects
- Copy of inform consent form
- Any other relevant document

Smt. Bangaramma Sajjan Campus, B. M. Patil Road (Sholapur Road), Vijayapura - 586103, Karnataka, India.
BLDE (DU): Phone: +918352-262770, Fax: +918352-263303, Website: www.bldedu.ac.in, E-mail:office@bldedu.ac.in
College: Phone: +918352-262770, Fax: +918352-263019, E-mail: bmpmc.principal@bldedu.ac.in

ANNEXURE III

PLAGIARISM CERTIFICATE

BLDE (DEEMED TO BE UNIVERSITY)

PLAGIARISM VERIFICATION CERTIFICATE

1. Name of the Student: **Dr. Praveen Ganganahalli** Reg No: **20PHD013**

2. Title of the Thesis: **Development of Skill-based Competency Module of Community Medicine subject by using Community Based Medical Education approach for Indian Medical Graduates.**

3. Department: **Community Medicine**

4. Name of the Guide & Designation: **Dr. Rekha Udgiri, Professor & HOD**

The above thesis was verified for similarity detection. The report is as follows:

Software used: **iThenticate** Date: **19/06/2025**

Similarity Index (%): **06 % (SIX percentage)** Total word Count: **7642**

The report is attached for the review by the Student and Guide.

The plagiarism report of the above thesis has been reviewed by the undersigned.

The similarity index is below accepted norms.

The similarity index is above accepted norms (17%), because of following reasons: Self-published article from the thesis was 11%, so final similarity index after excluding self-plagiarism it is 6%.The thesis may be considered for submission to the University. The software report is attached.

Signature of the Guide
Dr. Rekha Udgiri
Prof. & HOD
Dept. of Community Medicine
BLDE (Deemed to be University)
Shri B. M. Patil Medical College
VIJAYAPURA-03.

Signature of Student
Dr. Praveen Ganganahalli
20PHD013

Verified by (Signature)
Name & Designation
University Librarian
BLDE (Deemed to be University)
Shri B M Patil Medical College
Vijayapura - 586103

ANNEXURE IV

PROFORMA FOR THE FACULTY

NEED ASSESSMENT STUDY

- Designation
- Department
- State where working
- Working in college - Governemnt / Private / Deemed to be University
- Are you member of Medical Education Unit – Yes / No
- Underwent training in medical education course (rBCW/ BCME /ACME/ FAIMER) – Yes/No

Tick appropriate Responses for the following on the scale of Five-point Likert's scale

(strongly agree/agree/neutral/disagree/strongly disagree)

- The advantages of good communication skills are not limited to a better doctor- patient relationship, also require while working with team
- Do you feel training in communication skills as a part of undergraduate medical course is effective?
- Taking of a good history does not require as much skill as the physical examination of the patient
- Training in communication skills in clinical set-up is more effective than community set-up
- Communication skills training enhance empathy in medical students if taught in community setting

- Training skills by using standardized Teaching-Learning module gives better outcome
- Use of standardized TL Module will help facilitate faculty to train students uniformly & effectively
- Standardized Teaching-Learning module will help in Appropriate training of skills and ensure their acquisition
- In-course evaluation of communication skills of students by using formative assessment methods will be more effective

Open ended questions (answer in few words)

- What challenges do you face in implementation of the small group teaching?
- Opinion about needs of communication skills training to Undergraduate students (in few words)
- Any suggestions for Teaching-Learning modules for training Communication skills

ANNEXURE V

PROFORMA FOR THE FACULTY

For Validation of the Module

- Name:
- Designation:
- Subject:
- Undergraduate teaching experience (in years):
- Underwent MET training? – Yes/No

Please rate the module based on following statements on the scale of relevance as follows,

(Not relevant / Somewhat relevant / Relevant / Highly relevant)

- Item 1 - "Please rate the extent to which the suggested module is well suited for the intended audience's needs."
- Item 2 - "Please rate the extent to which the suggested module effectively meets the specified learning objectives."
- Item 3 - "Please rate the alignment of the teaching-learning methods outlined in the proposed module with the specified competencies."
- Item 4 - "Please rate the effectiveness of the suggested module in evaluating the relevant skills."
- Item 5 - "Please rate the appropriateness of the teaching-learning and assessment methods in the proposed module in terms of being community-centered."

ANNEXURE VI

PROFORMA FOR THE STUDENT

Feedback For the Module-Based Training

- Roll number:
- Select appropriate options for feedback questions on community diagnosis posting,

(strongly agree/agree/neutral/disagree/strongly disagree)

- Community diagnosis posting met your learning objectives?
- The learning materials presented clearly and effectively
- The posting engages your interest and maintains your attention?
- The assessments and assignments appropriate for your understanding of the content?
- The instructor provides sufficient support and guidance throughout the posting?
- The learning outcomes clearly communicated at the beginning of the posting?
- The posting encourages active participation and interaction with peers?
- The posting adequately addresses your questions and concerns?

How would you rate the organization and structure of the posting? on a scale of minimum 0 to maximum 10

Overall, how would you rate your learning experience in this posting?

(Excellent / Good / Fair / Poor / Bad)

What aspects of the posting did you find most valuable?

What aspects of the posting do you think could be improved?

ANNEXURE VII

ORAL PAPER PRESENTATION

3rd STATE CONFERENCE OF INDIAN ASSOCIATION OF PREVENTIVE AND SOCIAL MEDICINE, KARNATAKA CHAPTER

DEPARTMENT OF COMMUNITY MEDICINE
BLDE(DEEMED TO BE UNIVERSITY)
SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA-586103
Accredited with 'A' Grade by NAAC (Cycle-2)

CERTIFICATE OF PRESENTATION

This is to Certify that

Dr. Praveen Ganganahalli

has presented Scientific paper (Oral/E-poster/full paper) on 15/16 September 2023, title Perception of medical Educators reg the Integration of Standardized TL Module for training communication skills for IMG & secured _____ In "3rd State Conference of Indian Association of Preventive and Social Medicine, Karnataka Chapter" with the theme – 'Environment & Health – Equitize, Educate, Empower – A Step Towards Attaining SDGs'.

DR. SHAILAJA S.PATIL
ORGANIZING CHAIRPERSON,
PROF. DEPT. OF COMMUNITY MEDICINE

DR. M.C.YADAVANNAVAR
ORGANIZING CO-CHAIRPERSON,
PROF. & HOD, DEPT. OF COMMUNITY MEDICINE

DR. REKHA UDGIRI
ORGANIZING SECRETARY,
PROF. DEPT. OF COMMUNITY MEDICINE

DR. M.R.GUDADINNI
JOINT ORGANIZING SECRETARY,
PROF. DEPT. OF COMMUNITY MEDICINE

DR. ARAVIND V PATIL
PRINCIPAL & DEAN,
BLDE(DU), SBMPMC

DR. R. V. KULKARNI
REGISTRAR,
BLDE(DEEMED TO BE UNIVERSITY)

DR. ANNARAO G. KULKARNI
PRESIDENT,
IAPSM KARNATAKA STATE CHAPTER

ORAL PAPER PRESENTATION

IAPSMCON2023

Theme : "Introspection & Innovation in Public Health; One Health One Planet".

50th Annual National Conference of Indian Association of Preventive and Social Medicine (IAPSM)

Organized by

Department of Community Medicine and Family Medicine, AIIMS Bibinagar in collaboration with NIN, Hyderabad.

Certificate

This is to certify that **Dr. Praveen Ganganahalli** has actively participated in Scientific Session/Oral/Poster paper presentation in Golden Jubilee Celebrations of Annual National IAPSM conference as a Presenter/Speaker/Chairperson /Co-Chairperson /Judge /Panelist / Moderator /Resource Person /Reviewer from 02nd to 04th February 2023.

Topic **Perception of medical Faculty reg the Interprofessional TL Module for training communication skills for IMGs**

Prof. Dr. Vikas Bhatia
Patron & Organizing Chairperson (Planning)
Exec. Director, AIIMS, Bibinagar

Prof. Dr. Harivansh Chopra
National President, IAPSM

Prof. Dr. Purushottam Giri
Secretary General, IAPSM

Prof. Dr. Neeraj Agarwal
Organizing Chairperson (Executive)

Dr. Rashmi Kundapur
Organizing Vice-Chairperson

Dr. Govindrao N Kusneniwar
Joint Organizing Secretary

ANNEXURE VIII

PUBLICATION OF ORIGINAL ARTICLES

In SCOPUS Indexed Journals

- Ganganahalli P, Udgiri R. Perceptions of Medical Educators Regarding the Integration of Standardized Teaching-Learning Modules for Training Communication Skills in Medical Undergraduate Students. Journal of Indian Medical Association 2024:122(4);15-18. (**SCOPUS**)
- Ganganahalli P, Udgiri R. Developing and Implementing a Skill-Based Competency Module for Indian Medical Graduates: A Community-Based Education Approach for Community Diagnosis - An Educational Observational Study. Journal of Krishna Institute of Medical Sciences University 2024; 13(1):93-100. (**SCOPUS/WOS**)