EVALUATION OF TASK BASED LEARNING PROGRAM IN PRECLINICAL MEDICAL EDUCATION

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Abstract. The conventional curriculum in preclinical medical education has a need for early clinical exposure programs that help in correlation of basic science data with clinical skills. This is helpful to develop clinical reasoning skills, problem-solving abilities, team work, communication skills and overall attitudes and behavior relevant for a healthcare provider. Preclinical task-based learning (TBL) is an active learning strategy in which the focus for the first-year medical student is a real task done by a doctor. In this strategy the student-doctors undergo a standardized patient encounter and discuss the learning issues related to the task in the first year of medical school. The current study is focused on the student perception of the effectiveness of task-based learning module. The TBL was conducted among first year medical students for nine topics that are commonly encountered in the clinics. After TBL was planned and implemented the evaluation of the modules was done using focus group discussions. The students highlighted the importance of standardized patients in the TBL strategy in providing early clinical exposure in preclinical medical education. They reported its usefulness gaining essential knowledge, skills and attitudes for medical learning. They reported positive outcomes of module design and processes and activities in TBL. Based on the negative aspects of the modules, future improvement was suggested in improving the usefulness of standardized patient encounter. This study showed the novice learners' outlook of the potency of TBL for several other topics of clinical relevance to provide early clinical exposure in medical schools.

Keywords: early clinical exposure, student evaluation, feedback, standardized patient, focus group discussion.

Аннотация. Традиционная учебная программа в доклиническом медицинском образовании нуждается в программах раннего клинического ознакомления, которые помогают сопоставить данные фундаментальных наук с клиническими навыками. Это способствует развитию навыков клинического мышления, способности решать проблемы, умения работать в команде, коммуникативных навыков, а также общих установок и поведения, необходимых для работы в сфере здравоохранения. Task Based Learning (TBL) — это стратегия активного обучения, в которой для студентов первого курса медицинского факультета в центре внимания находится реальная задача, выполняемая врачом. В рамках этой стратегии студенты-медики проходят стандартизированную практику с пациентом и обсуждают вопросы обучения, связанные с этой задачей, на первом курсе медицинского вуза. Настоящее исследование посвящено восприятию студентами эффективности модуля обучения на основе задач. TBL проводилось среди студентов первого курса медицинского факультета по девяти темам, которые часто встречаются в клинике. После планирования и внедрения TBL была проведена оценка модулей с использованием фокус-групповых дискуссий. Студенты подчеркнули важность стандартизированных пациентов в стратегии TBL для обеспечения раннего клинического ознакомления в доклиническом медицинском образовании. Они отметили ее полезность для получения необходимых знаний, навыков и установок для обучения в медицине. Они сообщили о положительных результатах разработки модулей, а также процессов и мероприятий в рамках TBL (обучения на основе командной работы). На основе негативных аспектов модулей были предложены дальнейшие улучшения для повышения полезности стандартизированных встреч с пациентами. Это исследование показало взгляды начинающих студентов на эффективность TBL в отношении ряда других клинически значимых тем, обеспечивающих раннее знакомство с клинической практикой в медицинских вузах.

Ключевые слова: начальный этап клинической практики, оценка студентов, обратная связь, стандартизированный пациент, обсуждение в фокус-группе.

Annotatsiya. Ushbu maqolada klinikagacha tibbiy ta'limning an'anaviy o'quv dasturida asosiy fan ma'lumotlarini klinik ko'nikmalar bilan o'zaro bog'lashga yordam beradigan erta klinik ta'sir dasturlari bayon etilgan. Bu klinik fikrlash ko'nikmalarini, muammolarni hal qilish qobiliyatlarini, jamoaviy ishlarni, muloqot qobiliyatlarini va tibbiyot xodimi uchun tegishli umumiy munosabat va xulq-atvorni rivojlantirishga yordam beradi. Task Based Learning (TBL) - bu birinchi kurs tibbiyot talabasi uchun diqqat markazida shifokor tomonidan bajariladigan haqiqiy vazifa bo'lgan faol o'rganish strategiyasi bo’lib, ushbu strategiyada talaba-shifokorlar bemor bilan suhbatdan o'tadilar va tibbiyot universitetining birinchi yilida vazifa bilan bog'liq o'rganish masalalarini muhokama qiladilar. Hozirgi tadqiqot talabalarning vazifaga asoslangan o'rganish modulining samaradorligi haqidagi tasavvuriga qaratilgan. TBL rejalashtirilgan va amalga oshirilgandan so'ng, modullarni baholash fokus-guruh muhokamalari yordamida amalga oshirildi. Talabalar TBL strategiyasida standartlashtirilgan bemorlarning klinikgacha tibbiy ta'limda erta klinik ta'sirni ta'minlashdagi ahamiyatini ta'kidladilar. Ular tibbiy o'rganish uchun zarur bilim, ko'nikma va munosabatlarni olishning foydaliligi haqida xabar berishdi. Ular modul dizayni, TBLdagi jarayonlar va faoliyatlarning ijobiy natijalari haqida xabar berishdi. Modullarning salbiy jihatlariga asoslanib, standartlashtirilgan bemorlar bilan muloqotning foydaliligini oshirishda kelajakda takomillashtirish taklif qilindi. Ushbu tadqiqot yangi o'quvchilarning tibbiyot universitetlarida erta klinik ta'sirni ta'minlash uchun klinik ahamiyatga ega bo'lgan boshqa bir qancha mavzular uchun TBLning samaradorligi haqidagi qarashlarini ko'rsatdi.

Kalit so'zlar: erta klinik ta'sir, talabalarni baholash, fikr-mulohaza, standartlashtirilgan bemor, diqqat markazidagi guruh muhokamasi.

In preclinical education, students are mainly confined to classrooms and laboratory without any exposure to real clinical scenarios. Basic science education is crucial for medical learning but is often spent in isolation from clinical practice.[1] Basic knowledge and skills are unarguably important but insufficient by itself. The learners must be inspired to learn about clinical relevance and embrace medicine in all its aspects to serve patients and become the better healthcare professionals of the future.[2]

Early Clinical Exposure (ECE) programs have paved the way for learners to get exposed to clinical learning in the first year of medical school.[3] The ultimate goal of ECE is to provide relevance to basic science learning, improvement of clinical knowledge, acquisition of generic transferable skills and development of better attitude as a health care provider.[4–6] The National Medical Commission (formerly known as the Medical Council of India) has made ECE mandatory in preclinical education.[7] This has led to development and implementation of a myriad of early clinical exposure strategies.

Preclinical Task based learning (TBL) is a small group strategy that utilizes a standardized patient as a trigger for providing early clinical exposure. This simulated learning approach involves the students to focus on cases that are routinely encountered in the clinics.[8] In TBL students interact with the standardized patient and then discuss the learning issues relevant to the patient's condition. In our study, a TBL program using standardized patients was evaluated in the preclinical setting.

Evaluation of TBL program by studying students' perception will allow us to understand if the learning outcomes align with the design and procedures of the TBL program. Understanding the learners perceptive will also help to scrutinize the effectiveness of processes, activities and assessment in TBL. Knowing about the limitations will help towards strengthening the TBL program and will allow room for improvement in planning and implementation of future modules.

Student evaluation of a preclinical task-based learning program using standardized patients has not been studied previously, this is particularly relevant in India as the national medical commission has mandated competency-based medical curriculum which includes ECE programs for medical students since 2019. The aim of this study was to evaluate the TBL program in physiology MBBS curriculum using students focus group discussion.

All focus group sessions were audio taped and transcribed literally. The transcripts were then checked for accuracy. Data were analysed inductively using thematic analysis which is the preferred procedure acceptable for identifying and sorting shared experiential themes in qualitative data. [13]

After the data were cleaned up, they were read repeatedly to identify themes from the focus group discussion. This was done by two investigators (Roopashree Shenoy and Sneha Shetty). They separately identified the main themes that emerged from each transcript. These investigators then compared their respective findings and developed a thematic framework based on consensus. The framework was then shared with the broader team of educators to discuss and refine it. This was followed by coding the data by theme by one investigator (RS) and key data representing each theme was extracted. Next, the sub-themes were identified and illustrative quotations were selected. These data were reviewed by another investigator (SS) to ensure these were consistent with the initial interpretation of the raw data, and then shared and discussed with a team of educators. Further refinements to the interpretations were made as a result of this process.

Consistent with other qualitative studies, a disciplined attitude was maintained in the data collection and analyses procedures. The final report was sent to all participating individuals for approval.

Based on thematic analyses, various observations were highlighted from the results obtained. The students perceived that there were many positive attributes of the modules. This included promotion of active learning, application of basic science in the clinics and development of various skills and attitudes that are required in a healthcare career. These findings are similar to the results highlighted in the previous studies conducted during the clinical years of medical education. They showed the importance of TskBL program in providing motivation to learn, improving learners' knowledge and performance skills and boosting their all- round development.[14,15] The learners explained how TskBL strategy was helpful to co-relate theory with practice and to understand the relevance of basic science knowledge in clinical learning. This strategy also helped in understanding the importance of empathetic doctor-patient interaction. Most of these gains were attributed to the presence of standardized patient. The simulated patient encounter was highlighted as the crucial component that provided motivation for further learning. This may be because standardized patient encounter is known to enhance performance in diagnostic reasoning, clinical exposure and essential skills required in the preclinical curriculum.[16–18]

The learners appreciated the interactive nature of the educational strategy. They informed that it helped them to develop their communication skills in two ways. First, it helped them to interact with the patient in an efficient manner. They learnt that patient is a common man who would not understand "medical speak" and tried to incorporate words which was understood easily. Second, they commented about how TBL helped in interpersonal communication. A previous study conducted in a medical university in Malaysia also concluded that TBL helped in development of acquired skills such as interpersonal communication. [19]

The participants perceived TBL to supplement the existing medical curriculum and opined that it could be helpful alongside problem-based learning and team- based learning to provide early clinical exposure. They compared the standardized patients in TBL to the paper scenario in PBL and concluded that PBL helped them to think in an analytical manner while TBL boosted the development of skills as well in addition to applying the knowledge to the clinical setting. This is supported by the findings of clinical TskBL in Dundee medical curriculum where TBL was used as a basis for integration and problem-based learning.[20]In comparison with team- based learning, the students voiced their request to experience both the modules as they had benefitted from the real-world application of basic science in both TBL and TBL.

However, the students also perceived negative attributes of the strategy. The most common negative aspect of TBL strategy was that this strategy employed large number of students per standardized patient. TBL had 14 students, 1 standardized patient and 1 facilitator in a group. The groups were formed in this manner because of two reasons. One, our educational set-up consisted of large student population of 250 students per academic year. Dividing the students into groups smaller than fourteen would require additional time, effort and resources. Second, in our educational institution the students were allotted into groups of 14 or 28 for all the small group learning activities in the physiology course. Bypassing any or both of the above-mentioned reasons was not feasible in our study setting. The other negative experiences of TBL strategy were identified as being too 'intense' and 'overwhelming' for a first- year medical student.

Based on the negative attribute of the TBL modules, there were several suggestions for further improvement. This included increasing the effectiveness of standardized patient encounter by working in small group of students per standardized patient. This could be because of increased opportunity to interact with the standardized patient, individual participation in all the procedures of the standardized patient encounter including history taking, clinical exam and patient education and higher attention from the faculty facilitator. All of this could lead to the possibility of having a better learning experience if fewer students were recruited per standardized patient[.8,15,21]

The students also opined that they wished to undergo many more modules of this nature throughout their medical learning with different type of standardized patients (for example children). They also had recommendations on overcoming language barrier by introducing language learning classes for medical students to perform better patient interaction in the clinics.

Despite the fact that the current findings are quite positive, there were alternative explanations. The student participant may play the role of a 'model informer' by providing only positive point of view about the TBL strategy. However, this was unlikely because the participants were encouraged to express their views and negative outlook openly and they were assured that they could communicate the negative comments about the modules. Another explanation for the positive findings could be that the focus group dynamic molds the agreement of the opinions involved. However, this possibility was low, because the focus group interviewer was an experienced moderator of focus groups with significant experience in conducting focus group discussions.

In conclusion, TBL in medical education represents a transformative approach to teaching and learning, leveraging advanced technologies and innovative methodologies to enhance the competence and confidence of healthcare professionals. As detailed, integrating high-fidelity simulators, VR, AR, standardized patients, and hybrid simulations offers a multifaceted framework for developing technical and non-technical skills essential for patient care. The benefits of these modalities are significant, ranging from improved clinical outcomes and increased patient safety to enhanced communication and teamwork abilities. However, the successful implementation of SBT has its challenges. High costs, the need for specialized equipment and facilities, faculty training, and the limitations in realism compared to actual clinical settings are critical barriers that must be addressed.

Another limitation of the study is that the current study does not capture the complete evaluation of the TBL module. This is because it does not discuss the faculty perception about the TBL strategy. Obtaining feedback from the faculty who were involved in planning, implementing and assessing the TBL modules would be a valuable addition to a comprehensive evaluation of the TBL strategy.

The present study highlights the importance of TBL strategy as perceived by students in providing early clinical exposure in preclinical medical education and despite the drawbacks, the present qualitative findings substantiate the positive aspects of TBL strategy and further confirm its effectiveness in boosting the overall development of preclinical students.

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