ORIGINAL ARTICLE

TO DETERMINE THE EFFECTIVENESS OF PATIENT EDUCATION AND COUNSELLING AS A SELF-LEARNING STRATEGY FOR UNDERGRADUATE MEDICAL STUDENTS

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Background: Patient education and counselling is an effective strategy for fostering patient-doctor relationship. Undergraduate medical students must learn how to counsel patients. Objectives were to assess the effectiveness of patient education and counselling as a teaching strategy and compare it with the Large Group interactive teaching strategy (LGIS). **Methods:** A true experimental study was conducted at Saidu Medical College affiliated hospital with 60 fourth-year MBBS students. Stratified random sampling divided participants into control (LGIS) and experimental (self-learning with patient counselling) groups. Both groups took a baseline knowledge test. The control group attended lectures, while the experimental group studied self-care for type 2 diabetes and conducted patient counselling with a simulated patient. Post-intervention knowledge scores and feedback were analyzed using SPSS 23. **Results:** The LGIS group pre-test mean baseline knowledge score was 30.73±12.11, increasing to 35.40±13.29 post-test. The experimental group, pre-test and post-test knowledge scores ±SD were 31.67±12.75 and 38.95±12.95 respectively. Paired t-tests showed significant improvements in both groups with a *p*-value of 0.001. However, the independent *t*-test indicated no significant difference between the two teaching methods (p=0.299). Additionally, 90% of the experimental group found patient counselling techniques practical and effective. **Conclusion:** Although significant associations between the two groups were not observed, effective patient counselling is a more practical learning technique to understand diseases in clinical settings.

Keywords: Patient Education and Counselling; Self-learning Strategy; Undergraduate Medical Students

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INTRODUCTION

The importance of experiences in student interactions with real patients is a part of the medical education for a health professional. Early clinical engagement and experience in the healthcare system is mandatory for a sound understanding of medical knowledge and its application.[1]

Medical educators need to understand the learning outcomes from the clinical experience of medical students to design policies and program development that would help in providing better opportunities to medical students, improve patient care, patient satisfaction, and lighten the burden on hospitals in a bigger picture.[2] One component of this process is the benefit of patient counselling to medical students in terms of understanding a disease or service provision to patients.[3] The other components that can be studied are the levels of patient satisfaction and how can some responsibilities of the physicians and surgeons be transferred to medical students which does not come under the subtext of direct intervention rather measures to prevent the complications that can happen from a disease or after a procedure.[3]

The current clinical trends of patient empowerment and a doctor-patient relationship include shared decision-making.[4] In this paradigm, the patient is being educated regarding his/her disease, treatment options, and prognosis.[4] With regards to medical students practicing patient counselling can lead to understanding the various aspects such as improving self-care, health literacy, treatment adherence, and health outcomes.[5,6] With the passage of time medical education has become more inclined towards assigning professional roles to medical students to increase their contact time and exposure to real-time patient.[7,8] The medical teaching strategies similarly are also evolving to encourage and employ self-learning and service learning in clinics.[9] The

possible benefits and outcomes of this learning design have not been thoroughly studied.

Thus, it is proposed that providing medical students with a chance to educate patients about their disease would encourage medical students to study an illness with the mind-frame of being able to educate a patient and be able to answer expected questions. It has been suggested that providing medical students with a chance to educate patients about their illness would stimulate them to study a disease. In order to be able to provide valid information, a student would be keen to learn the possible treatment options, the risks posed to it and the prognosis related to a disease.

Medical students in hospitals during their clinical rotation are mostly involved in practicing clinical examinations, history taking and observing management. Patient education is an important foundation in medical education yet seldomly taught and practiced entity with regards to medical students.

Patient education does not only help the patient understand his/her disease status, affect the patient's level of satisfaction but it can also encourage the medical students to understand the pathogenesis, treatment options and prognosis of a disease in order to be able to educate individuals suffering from a disease[10]. This study aims to address this gap by evaluating the effectiveness of patient counselling as a self-learning strategy for undergraduate medical students. By exploring how this approach influences students' knowledge and their ability to communicate effectively with patients, this research seeks to contribute valuable insights into medical education.

MATERIAL AND METHODS

This study was conducted from June 2023 to November 2023 in the Department of Medicine at Saidu Medical College (SMC), Saidu Sharif, Swat, Khyber Pakhtunkhwa (KP), Pakistan. Ethical approval was obtained from the KMU-IHPER Ethical Board vide Ref No: 1-11/IHPER/MHPE/KMU/23-61 dated 27-12-2023 following ASRB approval during the 135th KMU-ASRB meeting held on May 31, 2023 vide ASRB No. DIR/KMU-AS&RB/DE/002043. Informed consent was obtained from all participants.

Fourth-year MBBS students, attending General Medicine rotation at Saidu Sharif Teaching Hospital, Saidu Medical College Swat, KPK, willing to participate in the study were included in this study. Students who had not completed their pre-clinical years or were on leave during the study period were excluded. A sample size of 60 was selected based using epi info software. Participants were selected using a stratified sampling technique on the basis of scores obtained in the pre-intervention.

The study employed an experimental design to assess the effectiveness of patient education and counselling as a self-learning strategy being employed by a student to acquire knowledge or skills by the his/her own efforts without the direct conventional teaching. Participants were randomly assigned to either a control group or an experimental group after a baseline knowledge score assessment.

The control group received traditional lectures, while the experimental group was provided with written material on self-care for type 2 diabetes. Subsequently, the experimental group conducted a patient counselling/education session with a simulated patient. Post-intervention knowledge was evaluated using a test to measure changes in knowledge scores. Additionally, the experimental group completed a Likert scale feedback form to assess their perceptions of the effectiveness of the patient counselling. After study period, both groups received teaching as per standard planned schedule.

RESULTS

The study assessed the impact of patient education and counselling on the knowledge of undergraduate medical students. Pre-test and post-test mean knowledge scores were compared for two groups: the Large Group Integrated Studies (LGIS) and the Directed Self-Learning (DSL) group. For LGIS, the pre-test score was 30.73±12.11, and the post-test score was 35.40±13.29 (Table-1). The DSL group showed a pre-test score of 31.67±12.75 and a post-test score of 38.95±12.95 (Table-2). Both methods demonstrated a significant increase in knowledge, with *p*-values of 0.001 for both groups. Paired *t*-tests revealed mean differences of 4.67±2.36 for LGIS and 7.28±6.86 for DSL (Table-3), indicating effectiveness in both methods.

Paired *t*-test for the knowledge scores in Pre-test and post-test in the LGIS group showed a mean difference ±SD of 4.67±2.36 with a standard error for the difference of means 0.43 and significant *p*-value of 0.001.

Paired *t*-test for the knowledge scores in Pre-test and post-test in the experimental group showed a mean difference ±SD of 7.28±6.86 with a standard error for the difference of means 1.25 and significant *p*-value of 0.001 as shown in table-3.

The paired *t*-tests for pre-test/post-test scores in the LGIS and DSL group showed that both methodologies are significantly effective in increasing the knowledge scores of the medical students.

An independent *t*-test showed no significant difference between the two methods (p=0.299), suggesting that DSL is as effective as LGIS in enhancing knowledge. Student feedback highlighted the benefits of patient counselling, including improved clinical exposure and self-reflection.

Table-1: Pre and Post intervention knowledge score

		Mean±SD	Sample Size	Standard Error Mean
Pair 1	**Post test (LGIS)**	35.40±13.29	30	2.43
	Pre test (LGIS)	30.73±12.11	30	2.21
Pair 2	**Post test (DSL)**	38.95±12.95	30	2.36
	Pre test (DSL)	31.67±12.75	30	2.33

*LGIS- large group integrated studies. *DSL-Directed self-running group

Paired sample t test, the pre-test and post-test LGIS showed a correlation of 0.987 with a *p* value of 0.001. Paired sample correlations of the pre-test and post-test experimental group showed a correlation of 0.857 with a *p*-value of 0.001.

Table-2: Confidence Interval Estimation for the Difference of Means

		95% Confidence Interval of the Difference	
		Lower confidence limit	Upper confidence limit
Pair 1	**Post test & Pre test (LGIS)**	3.79	5.55
Pair 2	**Post test & Pre test (DSL)**	4.72	9.84

*LGIS- large group integrated studies. *DSL-Directed self-running group

Table-3: **Paired *t*-test for both sample**

		Mean±SD	Standard Error for the difference of Means	*t*-value	df	*p*-value
Pair 1	**Post test - Pre test (LGIS)**	4.67±2.36	0.43	10.842	29	0.001
Pair 2	**Post test - Pre test (DSL)**	7.28±6.86	1.25	5.809	29	0.001

Table-4: Independent t-test for the equality of mean score of two methods

		t-test for Equality of Means				
Impact of two methods	**Equal variances assumed**	**Mean Difference**	**Standard Error of Difference**	***t*-value**	**df**	***p*-value**
		3.55	3.39	1.048	58	0.299

DISCUSSION

Our intervention proved to be successful in terms of increasing the knowledge score of the students in the DSL group with a mean score higher than that noted in the LGIS control group. As was the objective to assess whether patient education as a directed self-learning can be used to teach medical students. A statistically significant knowledge gain was noted in the DSL group. Though upon comparison of the post-test knowledge score, a statistically significant difference between the two groups was not noted.

The post-test mean knowledge score in both groups was however noted to be on borderline of passing in both the groups.

A similar study used simulated standardized patient asthma related patient education as a teaching methodology in 3rd year medical students to assess effectiveness of patient education as teaching methodology in medical education.[11] It also showed similar results and reported an increase in knowledge score, however emphasized that expected goals of comprehension and competency through patient education cannot be achieved in medical students unless consistent reinforcement is being carried out by the teachers during the clinical encounters of medical students.[11]

A quasi-experimental study conducted for three academic years included first year MBBS students in order to compare conventional teaching methodologies to small activity Preclinical task-based learning (TskBL) involving standardized patients in which one of the tasks was to provide information to the patient. It concluded that this specific task may help students in attaining higher knowledge scores recommending that this task can be used to teach students common diseases which medical students encounter in their clinical attachments and would provide opportunities for early clinical exposure.[12]

TsKBL is an advisable learning technique with a high yield for learning and teaching in medical undergraduate students.[13] Another study compared pre and post-exposure scores of the students and reported a significant knowledge gain and competence in performing intended skills.[14] Medical students should be exposed to situations where they are encouraged to understand and provide for the medical needs of the patients[14]. Valuable insights into the relationship between clinical service activities and the development of empathy in medical students have been contributed by research studies.[15,16]

The study's intervention, combining LGIS with a DSL approach, successfully increased

students' knowledge scores compared to the control group. While LGIS alone remains effective, incorporating DSL may further enhance knowledge gain. This suggests dividing disease education into theoretical (LGIS) and practical (DSL) components. Although a standardized simulated patient was used due to time constraints, high satisfaction levels and student motivation were observed. Engaging medical students in educating and counselling patients offers valuable insights into chronic diseases, self-care, and management, fostering practical skills and a sense of real-world impact.

Limitations of the study

It was assumed that the knowledge being gained by the students within the lecture settings and through the written material might have been overwhelming for the students. Since we tried to cover a great chunk of information within a shorter time frame. Another assumption would be since the score in the study did not have an impact on the overall knowledge gain in both groups, it was a mere voluntary activity, they might not have put in a more serious effort to achieve much higher scores.

The study is conducted in one clinical setting and could not be conducted at other medical colleges, dental colleges and allied health institutions.

It is suggested to include these avenues for future research to bridge this gap to get a more holistic understanding of the subject matter. Moreover, future research must explore the challenges in implementing DSL and factors that can cause students to lose motivation and have low self-esteem. The insufficiently clear and precise instructions for introducing self-directed learning in medical education must also be explored and strategies be suggested.

CONCLUSION

Patient education and counselling is an effective self-learning techniques that can be used in medical education. In terms of gaining knowledge, it is as effective as conventional lectures. It is a more practical and engaging learning technique to understand diseases in a clinical setting. Patient counselling as a learning technique is useful in understating a disease and provides an opportunity for, early clinical exposure, self-reflection, critical thinking, experiential learning, clinical knowledge application and confidence-building.

Involving medical students with patient care, patient education and real patient interactions can prove to be a high yield learning methodology and prepare them for their transition from undergraduate level to graduate level.

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Conflict of interest

This manuscript has been extracted from the MHPE thesis of Dr. Humera Gabeen under the supervision of Dr. Usman Mahboob. The results of this research have not been published elsewhere.

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AUTHORS' CONTRIBUTION

HG: Literature search, study design, acquisition of data, write-up, final approval. UM, BJ: Conception of this research. Has given final approval of the version to be published and agreed to be accountable for all aspects of the work in ensuring that question related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. HA: Substantial contribution to data analysis and interpretation of data. Has given final approval of the version to be published. HI: Proof reading, has given final approval of the version to be published. NA: Final write-up, critical review & proof reading and has given final approval of the version to be published

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