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Original Research Article

Attitude and Perception of Undergraduate Dental Students towards Problem-Based Learning in Tunisia: A Cross Sectional Study

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Abstract: ***Objective:*** The purpose of this study was to assess 6th year students' attitudes and perceptions towards problem-based learning sessions during their clinical internship. ***Methods:*** A cross-sectional study was conducted among undergraduate dental students at the hospital Farhat Hached Sousse in Tunisia from February to August 2023. Use questionnaires to survey students' attitudes and perceptions about problem-based learning sessions. Data were analyzed using SPSS 21. ***Results:*** 6th year dental students reported positive attitudes toward all programs, including self-directed learning, critical thinking, integrating fundamental concepts into clinical science, identifying knowledge gaps, and improving problem-solving skills. ***Conclusions:*** Most undergraduate students preferred PBL and felt it should be included in the curriculum along with other teaching methods.

Keywords: Problem-based learning (PBL), 6th year dental students, Perception, Attitude.

INTRODUCTION

Problem-Based Learning (PBL) was first suggested by Burrows at McMaster University in Canada in the 1960s. It has since been adopted by several medical and dental schools around the world to support the transformation of medical programs from traditional teacher-centered to student-centered learning strategies and integrate them into the structure of medical education [1]. Problem-based learning is a revolutionary approach to learning active in medical education that can lead to many benefits such as better understanding of fundamental scientific concepts, integration of basic and clinical science, and improved problem-solving skills. It also encourages self-directed learning (SDL) [2]. Promotes communication, interpersonal and presentation skills that increase students' enthusiasm and motivation to learn and understand. PBL is a group learning activity in which students investigate an open-ended topic similar to an actual clinical case [3]. In addition to the knowledge students learn in PBL, some skills such as continuous learning, critical thinking, and teamwork become important features compared to traditional lecture-based teaching. Another standout aspect is the interactive and stimulating educational environment of clinically oriented cases in PBL, enabling learners to identify their own needs and learn how to address them [4]. A student's confidence to interact in a group and the ability to express themselves is closely related to self-concept, which is defined as a person's perception of himself and his ability to assess his own strengths and weaknesses, which reflect students' attitudes toward themselves [5].

But despite all these privilege, the biggest challenge of PBL is making sure the group is functioning properly. Therefore, it is important to recognize the variables that lead to positive and goal-oriented group dynamics. In addition, several studies have shown that PBL is very time-consuming as a teaching modality and has no significant impact on knowledge acquisition. Tutors help students achieve their goals by keeping them focused on their work [6]. A PBL course involves the different roles of each participant in the group, clearly defined discussion steps, and learning objectives based on the problem to be solved. Therefore, a competent tutor is crucial to the success of a PBL progression. Various studies conducted globally have concluded that PBL, or problem-based learning, has a positive impact on learning. Nevertheless, a few research on medical students' attitudes and perceptions of the PBL session have been conducted in Africa, particularly in Tunisia. Therefore, this present investigation was conducted to explore the perceptions and attitudes of 6th year dental students towards PBL sessions during their clinical internship at the hospital Farhat Hached Sousse in Tunisia [7].

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MATERIALS AND METHODS

At the dental department of the hospital Farhat Hached in Tunisia, a cross-sectional study was carried out to evaluate perceptions and attitudes of 6th year dental students towards PBL learning. An anonymous and self-administered questionnaire was used for this purpose. Over a period of six months, a PBL case was presented weekly. Each case was accompanied by a two-hour tutorial, which was split into two sessions led by a trained tutor. Students were given a one-hour self-study period between tutorial sessions. Each PBL session comprised a group of 10 to 12 students. Prior to the commencement of the research, every student underwent a briefing that outlined the purpose of the study and provided a clear explanation of the survey questions. All participants were made aware that any data collected would be madepublic and presented. Written informed consent was obtained from each participant before the questionnaires were distributed. Out of 95 complete participants, 80 students finished the questionnaires entirely. The information was being analysed with SPSS model 21. 0. The fivepoint Likert magnitude responses were merged into 3 distinct categorical factors: "agree"(strongly concur plus agree),"neutral," and "disagree"(strongly disagree plus disagree) since the concurred narrated items highlighted the gain for a group of statements.

Statistical Analysis

SPSS version 21 was used to analyse the data. For each individual item, the results of the descriptive analysis were tabulated as a percentage, mean, and standard deviation. A five-point Likert scale was used to determine satisfaction. To compare differences between male and female students, the chi-square test was used. At $p < 0.05$, the results were deemed significant.

RESULTS

This study included 80 undergraduate dental students (males 38.1% and females 61.9%). The participants' average age was 24.34± 1.14 (23-28) years. There were no gender-specific differences in the responses to the statements. The students' perceptions and attitudes towards PBL sessions were generally favorable. According to 86.25% of students, PBL is an interesting and engaging method of teaching and learning, while only 8% disagree. Moreover, 92.5% of students believed that PBL promoted communication skills and confidence in decision-making and 68% of students reported that PBL improves their group skill and student–student interaction. 97.5% of respondents observed that PBL was useful in identifying knowledge gaps. Nearly 88.75% of the students agreed that PBL promotes better content and knowledge retention through active participation in the learning process. According to 97.5% of undergraduate students, PBL makes the topic more interesting and fun to learn. Approximately 80% of students reported PBL motivated their self-directed learning, but 12.5% are unsure and 7.5% disagree. Another significant aspect is that 88.75% of students agreed that it integrates clinical knowledge with basic science and 90% agreed that PBL should be combined with traditional curriculum. There was no statistically significant difference between male and female undergraduate dental students in terms of perception and attitude.

Table 1: Demographics of the study participants

Demographics	No of students n(%)
Number of students	80
Age(years)	24.34± 1.14 (23-28)
Gender: Male Female	 38.1% 61.9%
Faculty of dental medicine Of Monastir -tunisia Foreign faculty (romania-ukraine....)	 58% 42%

Table 2: Perceptions and attitude of 6th ear dental students toward PBL(n=80)

S. N	Statement	Category	N (%)	Mean+-SD	p-value
1	The PBL session is interesting and engaging	Agree Neutral Disagree	69(86.25%) 3(3.75%) 8(10%)	1.19+-0.51	0.78
2	PBL improves my communication skills and my confidence in decision-making	Agree Neutral Disagree	74(92.5%) 4(5%) 2(2.5%)	1.67+-0.63	0.66
3	PBL improves my group skill and student–student interaction	Agree Neutral Disagree	68(85%) 10(12.5%) 2(2.5%)	1.57+-0.53	0.59
4	Identifies my knowledge gaps (PBL helped me to identify my strength and weaknesses)	Agree Neutral Disagree	78(97.5%) 1(1.25%) 1(1.25%)	1.49+-0.78	0.77

S. N	Statement	Category	N (%)	Mean+-SD	p-value
5	PBL improves the retention of knowledge	Agree Neutral Disagree	71(88.75%) 6(7.5%) 3(3.75%)	1.07+-0.43	0.49
6	PBL makes the topic more interesting and fun to learn	Agree Neutral Disagree	78(97.5%) 0(0%) 2(2.5%)	1.77+-0.89	0.69
7	PBL improves my self-directed learning on the topic	Agree Neutral Disagree	64(80%) 10(12.5%) 6(7.5%)	1.19+-0.51	0.78
8	PBL integrate basic science with clinical knowledge	Agree Neutral Disagree	71(88.75%) 3(3.75%) 6(7.5%)	1.24+-0.96	0.55
9	PBL should be combined with traditional curriculum	Agree Neutral Disagree	72(90%) 3(3.75%) 5(6.25%)	1.47+-0.73	0.69

PBL=problem based learning /p-value <0.05significant percentage and frequency was used

DISCUSSION

PBL has been established in numerous medical schools and universities around the world, and medical educators are working hard to promote its establishment in response to some of the problems related to medical education. These issues include a preference for memorizing facts over problem-solving skills, a lack of direct integration of initial academic training into clinical careers, and the need to develop lifelong literacy habits. Many exams have recognized PBL as one of the leading educational strategies to support healthcare professionals in developing advanced cognitive, communication and reasoning skills. Medical education needs to be constantly improved to keep up with the ever-changing demands of the ultra-modern age. According to our findings, PBL is very interesting because of the high level of sophistication of the scientists involved in PBL sessions [8]. Likewise, the reason for their strong interest in PBL courses may be due to the well-planned PBL script, which helps to stimulate scientists' interest in their field of expertise from the morning of their careers. Combined with the insights we have gained, these results provide compelling scientific support for the fascinating perspective of PBL in the medical discipline. In this study, 72.8% of the scholars believed that PBL improved their problem-solving ability and were satisfied with PBL literacy strategies [9-11]. Students in this study set up PBL to more effectively meet content literacy goals, which is comparable to a study conducted in Nigeria where more mature stakeholders felt that PBL programs were more effective in session literacy goals are more effective in aspects, and literacy subjects are superior to writing subjects, have a better fact-based understanding of deconstruction, and promote better participation of students in the educational process [12].

This study yielded another remarkable result compared to ours, which may be attributed to the fact that it included only one subject. In the study, the scientists argued that preparation boosted their confidence when mentoring others because it encouraged them to spark enthusiasm for revising previous knowledge and identifying gaps in knowledge to build new knowledge, which motivated them all to learn, which is consistent with the results of a study by de Jong and colleagues [13]. The students in this study also agree that PBL improves knowledge retention by incorporating it into the literacy process [14]. Although PBL was designed to be genuinely effective in promoting long-term knowledge retention, meta-analysis studies found that this review contradicted the evidence that PBL is used as a primary tutoring system to promote achievement improvement and long-term knowledge retention. PBL can help shift coaching from mere reproduction of learned effects and themes to sound development and critical thinking [15]. Current research highlights the important role of PBL in facilitating scientists' critical thinking and literature retrieval. This is consistent with the findings of another Ugandan study [16]. Students in this study agreed that PBL improved their independent reading and writing skills. This is consistent with previous explorations [17, 18]. Numerous studies have demonstrated the absence of a consensus on the effectiveness of PBL in fostering and advancing tonal learning capacities [19]. Our own research aligns with that of Callis et al., who discovered that students enrolled in a hybrid PBL course exhibited a greater ability to apply basic knowledge principles to a clinical scenario and improved communication skills compared to students in traditional lecture-based courses ; this resulted in an improvement in communication and decision-making abilities, which are essential skills for students to interact with other healthcare professionals[19].

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CONCLUSION

According to our research, most of the students enrolled in the college expressed a positive attitude towards PBL. When determining the overall satisfaction of students with PBL, 86.25% of the student population was either content or very content with the method. This study offers a scientific foundation for the need and practicability of incorporating PBL, alongside the traditional curriculum, as a modern pedagogical technique in the Tunisia dental faculty.

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