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Research Article

**A COMPARISON BETWEEN PROBLEM-BASED LEARNING IN  
EDUCATION AND TEACHING APPROACHES IN MEDICAL  
PSYCHOLOGY EDUCATION IN PAKISTAN**<sup>1</sup>Sana Rafique, <sup>2</sup>Muhammad Awais Tahir, <sup>3</sup>Dr Hina Kanwal<sup>1</sup>Federal Medical and Dental College Islamabad, <sup>2</sup>Resident General Medicine, Pakistan Institute of Medical Sciences., <sup>3</sup>Changsha Medical University, China.**Article Received:** November 2021    **Accepted:** December 2021    **Published:** January 2022**Abstract:**

**Aim:** Throughout the last decade, the problem base learning techniques have been extensively utilized at numerous Pakistani colleges. Nonetheless, the impact of the problem base learning method on medical psychology education in Pakistan has been inconclusive. The goal of our research remained to see if issue base learning method remained superior than lecture-based teaching technique in perspective of Pakistan's medical psychology curriculum.

**Method:** To verify the usefulness of problem base learning in Pakistani medical psychology, the systematic review and meta-analysis were conducted. In whole and subgroup studies, corresponding databases remained searched for accessible studies, as well as data were retrieved to generate Hedges' g and their 97% credibility range. Subgroup analyses remained also performed.

**Results:** There were nine studies found, each with 558 cases and 497 controls. There under multiple regression analysis, the overall test number of pupils in the problem base learning method group significantly substantially higher than those of scholars in traditional lecture-based instruction set (Hedges' g = 1.514, 96 percent CI 0.793–3.228, p0.002). The findings of subgroup analysis founded on key and school arrangement were comparable.

**Conclusion:** These findings endorsed the notion that the problem base learning approach might be used in Pakistani medical psychology school.

**Keywords:** PBL, medical psychology education in Pakistan, Pakistani colleges.

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**INTRODUCTION:**

Barrows & Tamblyn pioneered problematic learning as an educational strategy in the 1970s. Students are encouraged to engage in discourse of organized issues in order to advance themselves. Instead of just transplanting information and skills, the problem base learning method attempts to foster the integration of learnt information [1]. As a result, throughout the last two decades, such teaching paradigm has indeed been widely commended in medical school courses, in addition medical psychology have been intensively researched. Medical psychology remains a growing topic at medical schools across the world, serving as a link among fundamental and practice courses [2]. Through growth of medical paradigm from the sole biological model to the multidisciplinary biopsychosocial model, medical psychology has received more attention. Throughout this course, medical scholars are stated to gain fundamental psychological knowledge and enhance their abilities in interacting with the doctor-patient relation. Nevertheless, as opposed to other basic and medicine courses, medical psychology instruction encounters certain distinct challenges [3]. There really is, for example, no single specimen or model for intuitive display instruction. To comprehend similar difficulties, medical students must depend only on their knowledge and creativity. Currently, Pakistani medical schools fall far behind Western universities in terms of medical psychology education content, style, and approach. Around academics attempted to implement problematic base learning technique in medical psychology courses in Pakistani medical schools and colleges in order to promote teaching reform also expedite progress in education results [4]. Nonetheless, findings remained contentious. A prior study found that the problem base learning technique had no effect on students' final test grades in medical psychology. As a result, researchers carried out the systematic review and meta-analysis to determine if problem base learning technique improves medical psychology education in Pakistan [5].

**METHODOLOGY:**

The following were always the inclusion criteria: (1) Students in Pakistani colleges or universities served as study participants; (2) Studies assessed the impact of the problem base learning method on medical psychology education; and (3) In full text, students' final exam scores for medical psychology remained offered as the average with the correlating confidence interval or statistical significance and p value. The subsequent remained the major limitations: (1) Imperfect statistics studies; (2) Reviews, remarks, or

abstracts. Only the study only with highest sample size was considered where there was duplicate information. Researchers considered findings from distinct groups given in an article as studies published. The subsequent data was gained from for usage from previous research studies: first research's name, newspaper year, reference and substantial of students, school system, percentage of problem base learning teaching time, educational method, result procedures, period of sequence, population size, average deviation of medical psychology scores in both sets, or p value. In addition, efforts are being done to contact authors for missing statistics. SMDs (standardized standard deviation) have been determined using sample size and average values or sample size in addition P values. The SMD was then translated to Hedges' g, which plays a rather more impartial function. The information was then pooled together by means of Hedges' g as needed. The diversity analyzed data, as measured by I3 value and the Chi-square based Q-trial, were similarly utilized to control whether the fixed result model or an error correction model should be used. A random effect model remained utilized once effect remained shown to remain heterogeneous; alternatively, the panel regression model remained utilized. In addition to the overall study, individual analyses were done on students based on their profession and school system. To investigate the cause there are between variation, a Galbraith plot was created.

**RESULTS:**

Up to May 15, 2020, there were 895 records found in the exhaustive investigation. Between these findings, 68 duplicate records have been discovered. Scanning titles and summaries help in the removal of 850 records. Furthermore, full-text reading rejected other research due to inadequate data (2 articles), overlapping data (3 research studies), in addition appraisal (9 articles). Researchers viewed Dang set a record, which provided data on distinct ethnicities, as two separate research. In the end, we considered ten records (ten studies) having 558 cases and 499 controls in our meta-analysis. The bulk of the respondents in the ten trials remained in medical medicine. A medical psychology course typically lasted one year. The number of observations of the problem base learning and treatment conditions ranged from 13 to 119 pupils. Most studies contained not just the ultimate examination outcomes of both sets, nonetheless also a matching questionnaire, the particular items of which differed throughout featured research. Students were incredibly happy the with problem base learning method. In the five-year

scheme, about half of research remained done involving medical students. Table 1 shows the findings of the methodological quality evaluation. Total assessments revealed a significant degree of heterogeneity across studies (P0.002), that led us to choose random effect model. Following that, authors sought to pinpoint the cause of the heterogeneity. Students remained divided into subgroups founded on their main and school system. Clinical medicine students' overall test scores were considerably higher in the problem base learning group than in control set (Hedges'  $g = 3.087$ , 96 percent CI 0.998–4.175,

$p0.002$ ) (Fig 3). Furthermore, five-year system students' total test scores remained considerably higher in the problem base learning set than in control set (Hedges'  $g = 2.572$ , 96 percent CI 0.752–3.392,  $p0.002$ ) (Fig 4). Nevertheless, heterogeneity did not appear to be reduced. Compassion test remained directed to determine the impact of every independent review on the pooled Hedges'  $g$ . According to findings, no one study could influence the measurable variance in entire examination scores among students in issues base learning groups and controls.

**Table 1:**

					Tests of heterogeneity			Tests of association			Publication bias
Overall	10	554	498	RE	2.512 [1.793– 3.228]	5.126	<0.002	206.308	<0.002	97.104	0.049
Clinical medicine	7	329	329	RE	3.087 [0.998– 4.175]	4.755	<0.002	148.967	<0.002	97.667	0.349
Five-year system	8	268	268	RE	2.572 [0.752– 3.392]	4.756	<0.002	62.739	<0.002	95.524	0.809
Removing researches	6	256	258	FE	0.593 [0.416– 0.771]	7.544	<0.002	7.098	0.253	27.808	

**Table 2:**

	Students (n)	Total scores	Students (n)	Total scores	
	118	82.12±6.79	118	86.71±6.97	7
	113	82.56±5.2	113	76.46±4.68	8
	49	86.01±9.48	49	73.01±9.07	7
	98	13.57±5.87	39	13.16±4.59	9
	58	86.01±3.71	59	73.01±3.81	7
	62	87.93±2.77	61	84.19±4.42	8



PRISMA 2009 Flow Diagram

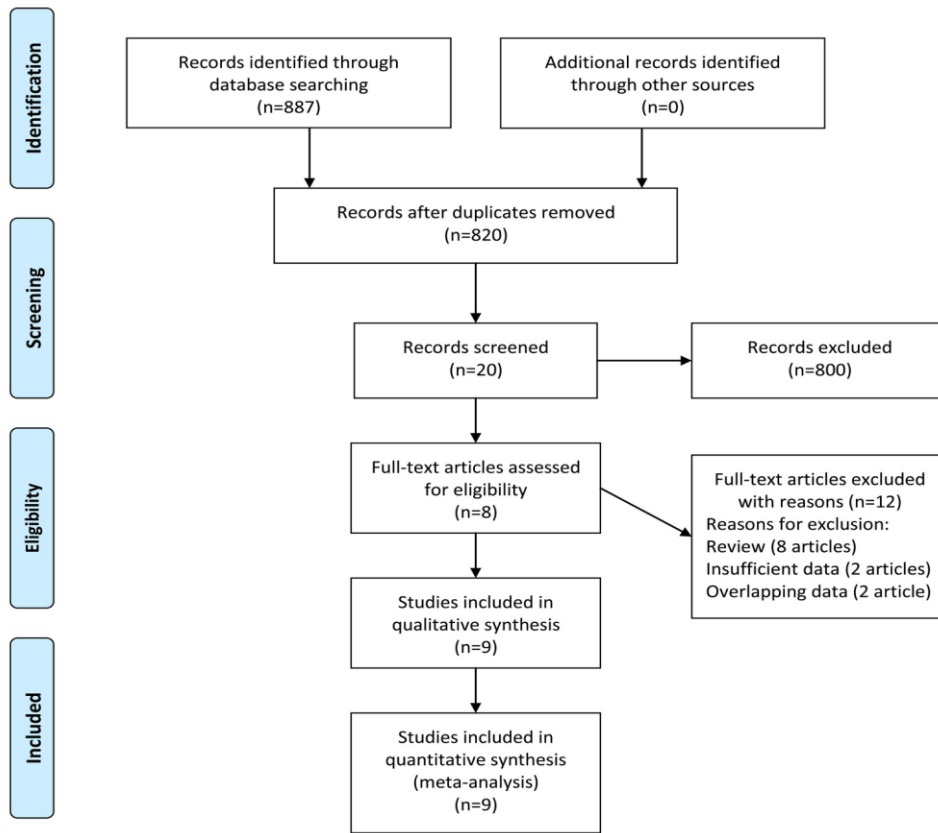
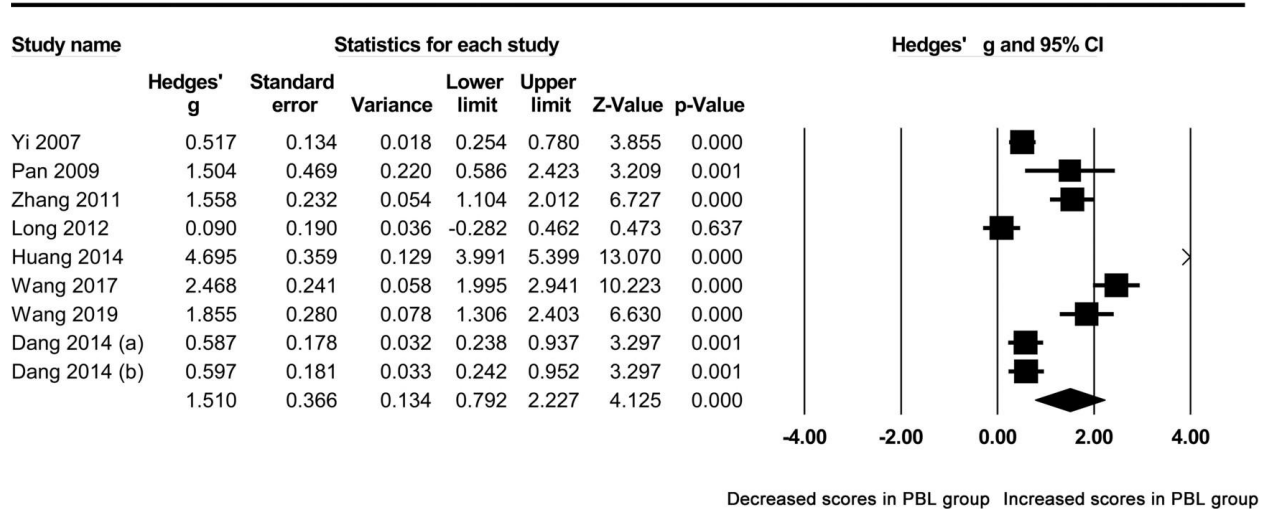


Figure 2:



Meta Analysis

**DISCUSSION:**

Despite the fact that numerous attempts were made to improve medical education, it would still be vital that college educators plan, produce, and execute the number of new medicine curriculums that may assist undergraduate medical students to aspire for becoming physicians [6]. Medical psychology, as just the bridge course among fundamental medicine in addition medical medicine, offers medical scholars' particular psychological information and assists these in developing bio-psycho-social idea of disease for future medical practice [7]. Educators had attempted to incorporate the problem base learning method into Pakistani medical psychology programs in current history. In the industrialized world, problem base learning offers significant benefits over traditional teaching methods. Students being stimulated to take ownership of their own learning, that remain an important ability for their career expansion [8]. To the best of our information, it is initial meta-analysis to look at once problem base learning technique is better than standard lecture-grounded teaching methods in a Pakistani medical psychology sequence. The study's benefit remained that our meta-tests encompassed extra trials through bigger sample sizes also revealed that the problem base learning group's overall scores significantly considerably higher than even the control group. These findings were consistent with those of another earlier research [9]. A susceptibility study indicates that the association was neither influenced or even shifted in way by specific research. Furthermore, researchers discovered substantial levels of heterogeneity among trials in the meta-analysis [10].

**CONCLUSION:**

Finally, the results of our current study found that problem base learning technique in medical psychology education in Pakistan appears to become extra successful than traditional teaching methods in boosting students' understanding. Huge, elegant research endure needed to determine whether problem base learning procedure is preferable to other teaching techniques in Pakistan.

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