



## Effectiveness of "Pbl Hybrid" Method on Nursing Care of Children With Laryngo Tracheo Bronchitis and Diabetes Mellitus Among 3Rd Year General Nursing Diploma Students at Oman Nursing Institute.

**Mrs. Lakshmi Renganathan**

Assistant Tutor, Oman Nursing Institute, Muscat, Oman

### ABSTRACT

*Background: Problem Based Nursing is becoming more popular teaching technique which is very effective in enhancing the knowledge retention of the students. This method also prepares the students to be lifelong learners and good critical thinkers.*

*Methods: PBL Hybrid method was imparted to third year General Nursing Diploma students at Oman Nursing Institute on "Nursing care of children with LTB and DM" through quasi experimental one group post test design considering total population. The quiz was conducted after one week.*

*Results: The result shows that totally 91 percent of the students have passed in LTB and 97 percent have passed in DM respectively. Hence this method is effective by improving the student's academic scores.*

*Conclusion: The PBL is an innovative teaching technique which is effective in improving the knowledge of the nursing students.*

**KEYWORDS : Diabetes mellitus (DM,) Effectiveness, General Nursing Diploma Students, Laryngo Tracheo Bronchitis (LTB) Oman Nursing Institute (ONI), Problem Based Learning (PBL) hybrid method**

### INTRODUCTION

The present day nursing world has a huge paradigm shift hence the novel approaches to teaching and learning are emerging to develop necessary knowledge and skills for the nurses to be critical thinkers, independent lifelong learners and good decision makers (Rideout.E and Carpio.B 2001). The PBL is a student-centered instructional strategy in which students collaboratively solve problems and reflect on their experiences (Stuan.M,et al., 2009). It also includes that involves confronting students with real life problems that provide a stimulus for critical thinking and self-taught content. Student assumes an active role in seeking and acquiring new knowledge rather than being passive recipients of knowledge (Gabr and Neamat Mohammed, 2011).

### LITERATURE REVIEW

Most of the literatures in nursing education portrays that the use of PBL in a small group format with one faculty tutor for 8-12 students. It permits for closer assessment and evaluation of the group process. Moreover the PBL thought to be foster critical thinking attributes, problem solving skills, group communication skills and a commitment to lifelong learning. PBL also facilitate the development of abilities to become self directed in learning and fosters a deep approach to learning (Wafaa GM, and Nahed A.M.S, 2010)

The PBL hybrid model has fixed sessions like lectures and PBL is used as additional instructional method (SavinB.M, and Wilkie K, 2004). The PBL model is mainly based on constructivist learning theory where the learner construct new knowledge using cognitive skills based on individual experience (Kala.N and Horrock,C, 2010). Many literatures revealed the advantages of PBL was found to improve student's knowledge , critical thinking skills, academic performance, autonomy, problem solving skills, motivation, communication skills and team work ( Zahra, 2012).

Therefore, the present study attempts to understand the effectiveness of PBL method among nursing student's knowledge on nursing care of children with LTB and DM.

### AIM

The overall aim of the study is to assess the effectiveness of PBL method on the level of academic performance of the 3rd year General Nursing Diploma Students at ONI.

### OBJECTIVES

1. Introducing the PBL hybrid method on "Nursing care of children with LTB and DM" among 3rd year General Nursing Diploma students at ONI
2. Assessing the effectiveness PBL hybrid method on the student's level of performance through the quiz.

### HYPOTHESIS

"PBL hybrid" method will significantly improve the student's academic performance.

### METHODS AND MATERIALS THE CONTEXT

The Oman Nursing Institute (ONI), Muscat, at Sultanate of Oman is a Ministry of Nursing teaching institution which functions under Director General of Education and Training Department (DGET) administer three years nursing program. One hundred twenty seven (127) 3rd year nursing students undergoing Child Health Nursing course were participated in the study. The Interrupted time series design which is categorized under Quasi Experimental Design (One group Post test Design) was adopted in the study.

### INTERVENTION

PBL hybrid method was implemented to the students on nursing care of children with LTB and DM disorders. The PBL hybrid method was given through many scenarios (Annexure-1). The students in each class room (28-33 students) were divided in to subgroups (5-7 students). Each group elected the leader. For each group the PBL scenarios were given. The scenario-1 was given to the students identify the answers on their own. If they identify the correct answer then the scenario-2 was given to find out the solutions. If the group didn't find the right solution, the facilitator/ teacher given the suggestions how to get the answers right and not giving answers directly to the students. Initially LTB scenarios were given followed by DM. The entire PBL process took 12 weeks to complete. The quiz was given on LTB and DM after a week interval to test the effectiveness of the PBL method.

### DATA ANALYSIS

The data analysis was done to test the hypothesis. The percentage calculation and frequency distribution was also done. Although pretest was not given but the previous test score were taken just to compare the quiz results through z- test. The scores were compared between LTB and DM as well. The effect of teaching method was assessed by performance of students in the quiz.

**ETHICAL CONSIDERATION**

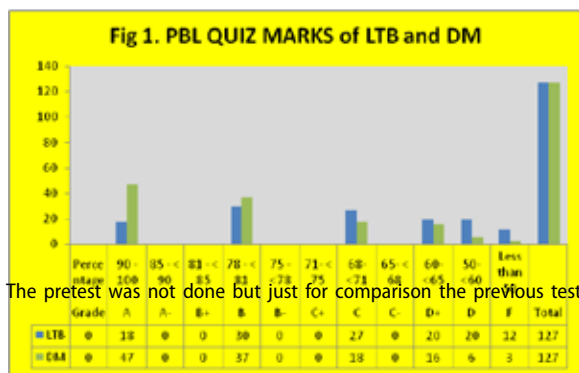
Ethical committee approval was obtained from the Research and Ethical Review Committee of Ministry of Health in Oman. An official permission obtained from the Dean of Oman Nursing Institute.

**RESULTS**

**Table 1**  
**QUIZ MARKS of "PBL HYBRID" METHOD of 3<sup>rd</sup> YEAR NURSING STUDENTS**

Grade	Percentage	LTB		DM	
		No. of Students	Percentage	No. of Students	Percentage
A	90 - 100	18	14	47	37
A <sup>-</sup>	85 - < 90	0	0	0	0
B <sup>+</sup>	81 - < 85	0	0	0	0
B	78 - < 81	30	24	37	29
B <sup>-</sup>	75 - < 78	0	0	0	0
C <sup>+</sup>	71 - < 75	0	0	0	0
C	68 - < 71	27	21	18	14
C <sup>-</sup>	65 - < 68	0	0	0	0
D <sup>+</sup>	60 - < 65	20	16	16	13
D	50 - < 60	20	16	6	5
F	Less than 50	12	9	3	2
Total		127	100	127	100

The table.1 illustrates the scores of 3<sup>rd</sup> year students in PBL quiz on LTB and DM. The frequency distribution table showed there was a good improvement in academic scores in both LTB and DM however the scores of DM were better compared to LTB. The graph illustrated that there was upward trend for grade A and B and downward trend for grade C, D+, D and F grades which is an outstanding feature. Compare to LTB the DM got improvement which means PBL method if given continuously improves the academic achievements (Fig 1).



The pretest was not done but just for comparison the previous test

marks were taken. To compare the present PBL scores with the previous test scores the z test was done. The mean difference in marks of previous test score and the PBL quiz on LTB and DM were significant at (p < 0.001) level.

**DISCUSSION:**

The findings of this research study revealed that the 115 students (91 percent) have passed in LTB and nearly 124 students (97 percent) have passed in DM. This shows that there is an improvement in the student's academic performance.

The mean difference in marks of previous test score and the PBL quiz on LTB and DM were significant at (p < 0.001) level. The hypothesis is accepted. Henceforth it can be concluded that the 'PBL hybrid' method is one of the effective methods.

Similar results were obtained in a quasi experimental study conducted at Saudi Arabia for nursing students. The post test mean score was noticeably higher than that at the pre test (p = .001) hence it could be concluded as the PBL method is an effective approach to foster learning (Wafaa G.M.A and Nahed A.M.S, 2010) Copious studies had evaluated PBL for its effectiveness with a wide range of research designs and results (Lake,D.A, 2001; Beers,G.W 2005; Chaves,et al., 2006). Those multitude of studies compared PBL to traditional methods of teaching using test taking and knowledge retention as an outcome measure. The results of those studies have been mixed with respect to the effectiveness of the teaching strategy.

**LIMITATION**

The study was conducted in only in one institution and only hybrid model of PBL method was used hence it is not possible to generalize the findings. Furthermore these results are not adequate to authentically say that PBL hybrid method is the best.

**CONCLUSION**

The purpose of this study was to investigate the effect of PBL hybrid method on nursing student's academic improvement. In this study, the nursing students improved their knowledge, and communication skills. Only knowledge assessment was done in the study which showed the increased knowledge retention. We need to implement many innovative teaching styles and make the learning student centered.

**RECOMMENDATIONS**

This method can also be compared with conventional (Lecture) teaching method. It will be effective if the study is conducted through pure experimental design. More than one PBL hybrid method can be tried to compare the effectiveness. The Pure PBL method could have been used for the entire semester to see the better result. The study need to be done in many nursing institutes for a more authentic result.

**CONFLICT OF INTEREST**

None

**REFERENCES**

1. Beers,G.W.(2005).The effect of teaching method on objective test scores: Problem Based Learning Vs Lecture. *Journal of Nursing Education*, 44(7), 305-309. | | 2. Chaves et al., (2006).Self Peer and Tutor assessment of MSN competencies using the PBL evaluation. *Journal of Nursing Education*, 45(1), 25-31. | | 3. Gabr, Hala., and Neamt Mohammed..(2011).Effect of Problem-Based Learning on Undergraduate Nursing Students Enrolled In Nursing Administration Course. *International Journal of Academic Research*.3 (1):154-162. | | 4. Kala,N, and Horrock,C.(2010). Interviews in qualitative research, Sage, London. | | 5. Lake.D.A (2001).Student Performance and Perception of a Lecture Based Course compared with the same course utilizing group discussion, *Physical therapy*,81(3) 896-902. | | 6. Rideout,E., and Carpio,B.(2001) The problem-based learning model of nursing education in: *Transforming nursing education through problem based learning* ed, E.Rideout, Jones and Bartlett publishers, Sudbury, pp 21-50. | | 7. Savin-Baden,M., and Wilkie,K. (2004). *Challenging Research in Problem –Based learning*, Open University Press. | | 8. Stuan,M., Bergstrm, B and Wadensten,B. (2009). Evaluation of a PBL strategy in clinical supervision of nursing students, Patient- centered training in student-dedicated treatment rooms, *Nursing Education Today*. Doi:10.1016/j.nedt.2009.12.013. | | 9. Wafaa Gameel.M.A. and Nahed A M S. (2010). Effect of Problem-Based Learning on Nursing students'approaches to learning and their self directed learning abilities. *International Journal of Academic Research*, 2(4),188-195. | | 10. Zahra M.J. (2012). MSc Dissertation on "An exploration of nurse educator's perceptions of problem based learning as a potential teaching and learning strategy for pre registration Omani Nursing Students. Glasgow Caledonian University, |