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Effective Teaching Methodology at Clinical: CIM or Written Assignments?

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Abstract

Objectives: The objective of this study was to compare Clinical Integrative Map (CIM) with the written assignment as a best teaching and learning methodology for nursing students on clinical side.

Methods: Quasi experimental study was conducted in both public and private nursing colleges. 53 students selected through convenient sampling participated in the study. Students' pre-knowledge about a specific disease was assessed through a written test. The students were randomly divided into two groups. Group-A was taught through CIM and group-B was taught through written assignment. Again the post session knowledge was tested and mean differences in pre and post knowledge was identified.

Results: The mean score of the pre-test CIM group was 7.17 ± 2.87 ; while their post-test score was 15.29 ± 2.81 . In contrast the mean score of the pre-test Written Assignment group was 6.41 ± 2.96 ; whereas their post-test written assignment was 14.31 ± 2.17 . A significant difference between pre and post-test CIM (-8.12) and written assignment (-7.89) was found. It shows that CIM is a bit more effective method than written assignment.

Conclusion: The result of this study concluded that Clinical Integrative Map (CIM) produced a bit better result as compared to written assignment. Therefore CIM shall be adopted as teaching method at clinical teaching for improving students' knowledge.

Keywords: Clinical teaching; Clinical integrative map; Written assignment

Introduction

For the last two decades, there have been dramatic advances in nursing science, so it has become more complicated in many aspects, especially in patient care. To provide competent, knowledgeable and skillful care to patients, nursing education must be improved in graduate

nursing students. In order to enhance the students' knowledge of quality care at bachelor level, educators are striving to choose the best means and methods of teaching. Most of the literature emphasizes on changing the trends in the clinical teaching and adopting the most effective methods of teaching to improve clinical learning [1].

Now-a-days, effective clinical teaching is more focused in nursing education [2]. The quality of clinical teaching needs to be improved by analyzing its current condition and evaluating its strengths and weaknesses [3]. Multiple teaching strategies are being applied at clinical side to guide bachelor students. These strategies include clinical assignments, care plans, clinical integrative maps, group discussions, and reflective logs [4]. For the purpose of identifying effectiveness in clinical teaching, two strategies (Clinical Integrative Map and Written Assignment) were selected for compare and contrast. These strategies are most common in clinical sitting; therefore, they could be used to identify the best teaching and learning method [5].

Clinical Integrative Map (CIM) is also known as care pathway, integrated care pathway, critical pathway, care map or concept mapping. Concept mapping (CM) enhances direct learning. Concept mapping is a teaching tool that links knowledge and ideas in meaningful and visual way to enhance learning of science students [6,7]. When faced with new knowledge, students gravitate to their dominant learning styles and successfully assimilate new information when the teaching strategies utilized are in harmony with their preferred style [8]. It is used in nursing education to help students visualize their mental processes and improve critical thinking ability [9].

An assignment is a specific task or duty that has been assigned to, and is given by an instructor. Clinical assignments include identifying the patient's problems, designing and implementing care plan and writing clinical logs [10]. Written assignment may create and develop critical thinking, and it may also promote the understanding of content. McCutcheon et al. [11] suggested that online learning for teaching clinical skills is no less effective than traditional means. Hence, it is generally complementary to clinical experiences, and it includes journal, clinical logs, care plans, concept map and short papers [12].

A quasi experiment study was conducted by Moattari et al. [13] with the purpose to assess whether clinical-concept-mapping improve discipline based critical thinking of nursing student. Thirty-two nursing students of fourth year participated in the study. The students were randomly divided into control and experimental groups. Based on the results of this study, the application of concept mapping resulted in the increase of abilities in students. The study also showed the role of concept mapping in the improvement of clinical thinking skills and habits of mind. Another study by Harrington et al. [14] also found flipped classroom to be an effective strategy for nursing education.

A comparative randomized control trail was conducted by Saeidifard et al. [15] with the aim of comparing concept mapping with lecture-based method in teaching. 76 students participated in the study. Students were divided into intervention and control group. In total score, intervention group had higher with 78% than that of control group who had 72% score. The result of the study shows that concept mapping as educational method was better than lecture based method. Additionally, evidence as per a study by Huang, et al. [16] suggests the use of simulation and competency-based paradigms in teaching procedures, and these approaches should be the mainstay of programmes that train physicians and nurses to perform procedures.

A quasi experimental study "Concept mapping as an innovative teaching strategy to enhance cognitive learning in nursing administration course" was conducted by Dr. Salman [17] in Helwan University Egypt. Study was done on 102 nursing students of 4th year. A significant difference was found in experimental students before and after awareness sessions. Knowledge about concept mapping and meaningful learning of students was improved in post-test.

Another quasi experimental study "Does concept mapping enhance learning outcome of nursing students" was conducted in Iran by Jaafarpour et al. [18]. A total of 64 nursing students, 30 male and 34 female, was included in the study. Using a crossover design, participants were divided into two groups. Group A was asked to create concept map and group B was evaluated with traditional method of quiz. The results of that study showed that the mean score for cumulative tests was higher in the group that engaged in map construction as compared to that of the group that took only quizzes. Also, a gradual increase in the mean score of developed map was found during the eight session of intervention.

A qualitative study design was conducted in Texas Teach Health Sciences Center, USA by Scott et al. [19] with the purpose of assessing the use of concept mapping integrative learning on students of allied health profession. The result of the study showed that group mapping activities could help individual student to learn new ways to link concepts.

Similarly, an integrative review of literature was done by Khrais and Saleha [20] with the purpose of reviewing the current state of knowledge about the effectiveness of concept mapping in nursing education. Literature was studied

thoroughly, and ten studies were found relevant to the topic. This study identified four main themes from the relevant studies:

- (1) From passive to active learners,
- (2) Stabilizing new knowledge,
- (3) Improving cognitive abilities and
- (4) Self confidence in clinical work.

The result of this study shows that literature supports the importance of concept mapping in nursing education.

An action research on developing and evaluating written assignment in clinical teaching was done in Iran by Valizadeh et al. [11]. The study showed that both the students and the instructors found the written assignment advantageous. The study also showed the students' perceived care competency before and after intervention which was statistically significant $p < 0.05$.

Objectives

To identify the best teaching and learning methodology at clinical side for nursing students.

Hypothesis

Ho: Teaching through CIM and written assignment has no difference in result.

Ha: CIM and written assignment causes difference in result.

Methodology

Study design

Design used for the current study was quantitative non-randomized quasi experimental study.

Study population and sitting

The population of current study was students of BSN semesters IV and VI. Data was collected from both private and public nursing colleges of Peshawar.

Sampling techniques

Using convenient sampling, Students of Baccalaureate of Science in Nursing were selected as interventional study.

Sampling size

Sample size was calculated using Raosoft software. Population size was 95, with confidence level 95%, margin of error 5%, and Non-response rate 10% was taken. Sample size calculated was 57.

Inclusion and exclusion criteria

Semester IV and semester VI students of BScN were included in the study. Those who were not willing to participate were excluded from the study.

Data collection tool

Questionnaire was developed for pre and post assessment of knowledge based on specific diseases taught. The pre and post-test consisted of twelve questions about effective teaching methodologies.

Data collection procedure

The study was conducted in both public and private nursing colleges of Peshawar from March to April, 2018. To evaluate pre-knowledge before teaching effective clinical methodologies, students were given pre-test on specific disease taught in that semester. Then, they were divided into two groups. One group was taught Clinical Integrative Map (CIM), and they were asked to draw CIM on patients with same disease in their clinical rotation; while the other group was taught and given written assignment. Four clinical instructors were involved to check students CIM and written assignment. Post-test was given to students after the completion of their tasks, and results were compared.

Ethical consideration

Approval letter for the data collection was signed from the principals of the colleges. A brief explanation was given to participants (students) about informed consent. Subjects were assured to be kept anonymous and confidential during and after the study.

Data analysis

SPSS version 22 was used for analysis of data. Mean and standard deviation were calculated for continuous variable, while percentage and frequencies were calculated for ordinal and nominal variables in Descriptive statistics. Paired T-test was applied in inferential statistics and results were shown in charts and graphical form.

Results

Demographic features

The study consisted of 53 participants including 15 (28.3%) males and 38 (71.7%) females. Marital status of the participants was 2 (3.8%) married and 51 (96.2%) unmarried. Mean age of the participants was 21.15 with the standard deviation of 1.21 years. Classes of the participants were semester IV n19 (35.8%) and semester VI n34 (64.2%).

Besides, these participants were also identified for their responses about teaching methods which they liked the most. 22.6% of the participants liked traditional lecture, 73.4% par liked group discussions and 3.8% liked other teaching methods

(Table 1). Students were also asked about the teaching method that was more effective on clinical side. 62.3% marked CIM as the most effective teaching method, 35.8% marked written assignment and 1.9% marked both the methods (Figures 1 and 2).

Table 1 Preferred teaching methodology.

Preferred Teaching methodology	Frequency	Percent
Traditional lecture	12	22.6
Group discussion	39	73.6
Any other	2	3.8
Total	53	100.0

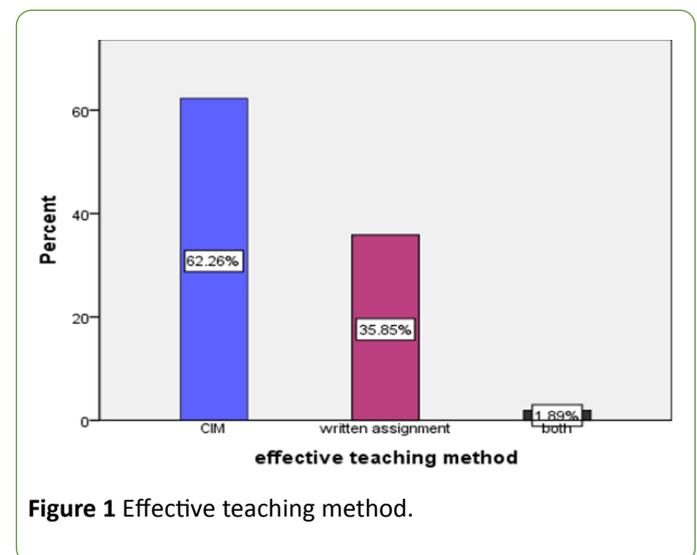


Figure 1 Effective teaching method.

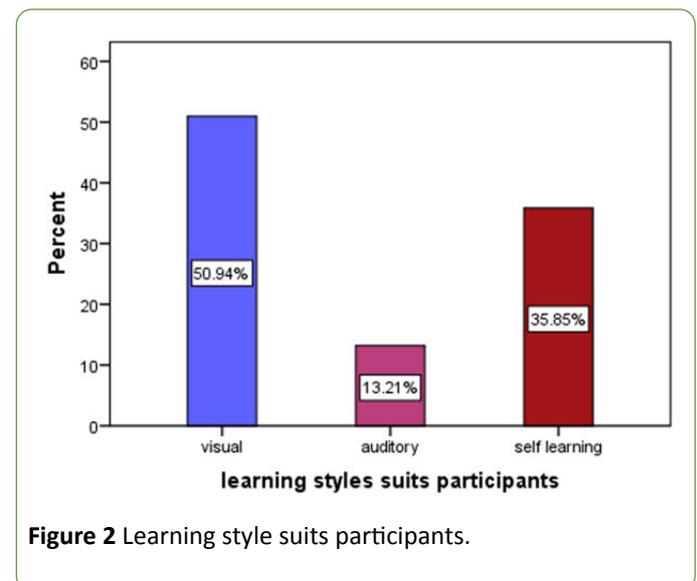


Figure 2 Learning style suits participants.

Comparison between pre and post-test CIM and written assignment

The mean and standard deviation of pre and post-test CIM and written assignment were calculated and they are given in below Tables 2 and 3. The mean score of the pre-test CIM was

7.17 ± 2.87, while mean of the post-test CIM was 15.29 ± 2.81. In contrast to the CIM, mean score of the pre-test written assignment was 6.41 ± 2.96, while mean of the post-test written assignment was 14.31 ± 2.17.

Moreover, Paired T tests were also applied to check the mean difference between CIM and written assignment. Result showed that the mean difference between pre and post-test CIM was -8.12 +3.47 and that of the written assignment was -7.89 + 3.12. From the result, it is clearly observed that CIM is a better tool that should be used in clinical teaching for baccalaureate nursing students.

Table 2 Mean score of CIM.

Test Description for Pair 1	Mean	Std. Deviation
Score of the participants in pre-test (CIM)	7.17	2.87
Score of the participants in post-test (CIM)	15.29	2.81

Table 3 Mean score of written assignment.

Test Description for Pair 1	Mean	Std. Deviation
Score of the participants in pre-test (Assignment)	6.41	2.96
Score of the participants in post-test (Assignment)	14.31	2.17

Discussion

The current study shows a bit better result of CIM as compare to written assignments. In study, "The outcome of integrating mapping in nursing education" by Khrais and Saleha [20] reviewed literature about the effectiveness of concept mapping. Ten reviewed articles adopted quantitative, qualitative and mixed method design. The study identified four main themes from the reviewed articles:

- 1) From passive to active learners,
- 2) Establishing new knowledge,
- 3) Improving cognitive abilities, and
- 4) Self-confidence in clinical work.

It concluded that nursing literature supports the importance of concept mapping in nursing education.

On other hand, Dr. Taie [17] in his "Concept mapping as an innovative teaching strategy to enhance cognitive learning in nursing administration course" did a study on 4th year nursing students to know the impact of awareness session on them. The students were given two types of questionnaire; one was on knowledge about concept mapping and the other was about students' achievement test. Student's knowledge about concept mapping and meaningful learning was significantly improved in post-test. Also a high significant difference was found between experimental students before and after awareness sessions.

A quasi experimental study "Does concept mapping enhance learning outcome of nursing students" was conducted in Iran by Jaafarpour et al. [18] showed that the mean score for cumulative tests was higher in the group that engaged in map construction as compared to that of the group that took only the quizzes.

Quasi experimental study 'Clinical concept mapping: Does it improve discipline-based critical thinking of nursing students?' was done in Iran by Moattari et al. [13]. The study was only post-test design, and its result showed that there is a significant difference between two groups divided. This study concluded that Concept mapping is valuable strategy for improvement of critical thinking of nurses.

An action research about "Developing and evaluating clinical written assignment in clinical teaching for the senior B.S nursing students" was conducted in Tabriz University of Medical Science Iran by Valizadeh, Zamanzadeh and Virani [11]. 64 nursing students and clinical instructors were involved in the study. Both qualitative and quantitative methods were used, and result showed significant difference of ($p < 0.05$). The researchers recommended clinical written assignment and other strategies for nursing students to be applied in clinical teaching.

The current study was aimed to reveal the best teaching methodology to be used on clinical side to prepare skillful, knowledgeable and competent nurses. Study was done in both private and public nursing colleges of Peshawar. Analysis showed difference in pre and post-test CIM and written assignment. It concluded that CIM is a best teaching methodology that should be used in clinical side to prepare skillful, knowledgeable and competent student nurses to give effective care to patients.

Recommendation

The study recommends that the utilization of CIM at clinical side is more effective teaching and learning methodology than the written assignment. Literature also supports the appliance of clinical integrative map as effective clinical teaching on clinical side.

Conclusion

Two teaching methodologies (CIM and written assignment) were applied at clinical side. Both of the methods were effective, but the result showed that CIM is more effective methodology than written assignment. So, it is concluded that CIM should be applied on clinical side to improve students' learning as well as to prepare skillful, knowledgeable and competent student nurses to provide effective patient care.

References

1. Hall JM (2004) Dispelling desperation in nursing education. *Nurs Outlook* 52: 147154.
2. Beitz JM, Wieland D (2005) Analyzing the teaching effectiveness of clinical nursing faculty of full- and part-time generic BSN,

- LPN–BSN, and RN–BSN nursing students. *J Nurses Prof Dev* 21: 32-45.
3. Hosseiny N, Karimi Z, Malekzade J (2005) The situation of clinical education based on nursing students' opinion in Yasuj nursing and midwifery school. *Iran J Med Edu* 5: 171-175.
 4. Patel NK, Murphy CI, Nagai K, Canton S, Herbst E, et al. (2018) Passive teaching is not as effective as active teaching for learning the standard technique of pivot shift test. *J ISAKOS* 3: 193-197.
 5. Boitel C, Farkas K, Fromm L, Hokenstad MC (2009) Learning transfer principles in a comprehensive integration model. *J Teaching Social Work* 29: 400-417.
 6. Novak JD (1991) Clarify with concept maps: A tool for students and teachers alike. *The Science Teacher* 58: 44-49.
 7. Novak JD (2004) Concept maps and how to use them. *Insight* 6: 15-16.
 8. Hultquist BL (2016) Innovative teaching strategies in nursing and related health professions. Jones & Bartlett Publishers.
 9. Paucard-Dupont S, Marchand C (2014) Exploratory study of clinical reasoning among nursing students using the concept map. *Recherche en soins infirmiers* 117: 85.
 10. McCutcheon K, Lohan M, Traynor M, Martin D (2015) A systematic review evaluating the impact of online or blended learning vs. face-to-face learning of clinical skills in undergraduate nurse education. *J Adv Nurs* 71: 255-270.
 11. Valizadeh L, Zamanzadeh V, Virani F (2012) Developing and evaluating clinical written assignment in clinical teaching for the senior B.S. nursing student. *Res Dev Med Educ* 1: 55-60.
 12. Billings DM, Halstead JA (2009) *Teaching in nursing: A guide for faculty*. 3rd edition. St. Louis: Elsevier.
 13. Moattari M, Soleimani S, Moghaddam NJ, Mehbodi F (2014) Clinical concept mapping: Does it improve discipline-based critical thinking of nursing students?. *Iran J Nurs Midwifery Res* 19: 70-76.
 14. Harrington SA, Bosch MV, Schoofs N, Beel-Bates C, Anderson K (2015) Quantitative outcomes for nursing students in a flipped classroom. *Nurs Educ Persp* 36: 179-181.
 15. Saeidifard F, Heidari K, Foroughi M, Soltani A (2014) Concept mapping as a method to teach an evidence based medical topic: A comparative study in medical students. *J Diabetes Metab Disord* 413: 86.
 16. Huang GC, McSparron JI, Balk EM, Richards JB, Smith CC, et al. (2016) Procedural instruction in invasive bedside procedures: A systematic review and meta-analysis of effective teaching approaches. *BMJ Qual Saf* 25: 281-294.
 17. Taie ES (2014) Concept mapping as an innovative teaching strategy to enhance cognitive learning in nursing administration course. *Int J Innov Educ Res* 2: 12-25.
 18. Jaafarpour M, Aazami S, Mozafari M (2016) Does concept mapping enhance learning outcome of nursing students?. *Nurse Educ Today* 36: 129-132.
 19. Scott D, Pelley J, Taylor L (2006) The use of concept mapping in integrative learning with allied health profession students. *Proc Second Int Conference Concept Mapping*.
 20. Khrais H, Saleh A (2017) The outcomes of integrating concept mapping in nursing education: An integrative review. *O J Nurs* 7: 1335.