



“EFFECT OF POST LEARNING WAKEFUL RESTING ON MEMORY RETENTION AMONG FIRST YEAR BSC NURSING STUDENTS AT SELECTED COLLEGES IN PERINTHALMANNA”

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Abstract:

The present study was conducted to assess the effect of post learning wakeful resting on memory retention among first year BSc Nursing students at selected colleges in Perinthalmanna. Objectives of the study were assessing the post-test level of memory retention among first year BSc Nursing students in experimental and control group of selected colleges in Perinthalmanna, to find out the effect of post learning resting on memory retention among first year BSc Nursing students at selected colleges in experimental group, and to find out association between post-test level of memory retention and selected demographic variables of both experimental and control group. The investigators adopted the quantitative approach and the study design was quasi experimental post-test only research design. The investigators had chosen Al Shifa College of Nursing, Perinthalmanna. The investigators had chosen 80 samples by using non-probability purposive sampling technique. The participants of experimental and control group have given with a planned teaching session on unfamiliar medical terminologies, which is followed by a post learning wakeful resting of 10 minutes to experimental group and mathematical calculations to the control group. A post test was conducted to both group in which self-administered structured questionnaire were distributed to the participants. The collected data were

analyzed by using descriptive and inferential statistics. And the result of the study was post learning wakeful resting is effective on memory retention.

Key words: post learning wakeful resting, memory, memory retention, BSc nursing students

INTRODUCTION: Memory is one of the important cognitive functions of human being. Human beings have a unique feature of storing their experiences. Thus every experience leaves an impression on the mind and the memory deals with the reproduction of events and experiences. It may be defined as the reproduction of past events without the presence of actual stimulus.¹

The period between learning and recall critically affects memory performance. Evidence exists that a brief period of rest after learning leads to lower forgetting rates than working on a task. Recent findings indicated that post-encoding distraction has a detrimental effect on subsequent memory performance regardless of whether distractors are similar or dissimilar to the learning content. In other words, forgetting can be induced by any mentally effortful post-encoding distraction task, irrespective of its content. This view is supported by studies in different populations, with different learning materials and post-encoding distraction tasks. Moreover, various post-encoding interventions have shown a negative effect on memory retention.²

Memory is the ability of an organism to store information from earlier learned responses, experience, retention, and reproduce that information in answer to specific stimuli.³ Invariably memory depend upon retention. Retention is the process of presenting material learnt. Retention is very essential to retain in mind the things learnt. Memory retention is the act or instance of remembering or recollection of information over a period of time.

The act of memory consists of retaining and recalling the impressions. Retention is inactive and remembering in active. Both are covered under general heading of memory and when we remember the process is often highly selective, so we recall some some aspects of our experience but not other

If we trace history it may see that interest in the field of memory was availed even in mediaeval philosophers. Plato (427- 347 BC) described the mind as a block of wax into which sensory experiences can be imprinted. Aristotle (384 – 382 BC) maintained that we remember things by virtue of contiguity, similarity and contrast. However the credit for first systematic experimental study of memory goes to Ebbinghaus who devised 23,000 nonsense syllables as a unit of memory. Experimenting on himself, Ebbinghaus memorized and then recalled hundreds of nonsense syllables meaningless combination of letters such as T, B, Q or P, X ,T. He developed a systematic procedure for measuring memory. He was first to plot forgetting curve which shows the rate at which humans are able to retain list of nonsense syllables after various interval of time. He found that we forget materials we have memorized quite rapidly. Later, forgetting proceed more slowly⁶.

The forgetting curve is the evidence that shows how long we can retain our memory on a new learning. Forgetting curves shows that within one hour people will have forgotten an average of 50 percent of the information. Within 24 hours, they have forgotten an average of 70 percent of new information, and within a week, forgetting claims an average of 90 percent of it⁷.

NEED AND SIGNIFICANCE: Memory retention is the ability to remember or recall information over a period of time. In long term memory is important for the retention of learned information allowing for a genuine understanding and meaning of ideas and concepts⁸.

According to the American statistics 54 (2), 136-140, 2000 An experimental was carried out to investigate the long-term effects of active learning methods of student retention in an introductory engineering statistics class. Two classes was taught using traditional lecture-based learning and the other class stressed group projects and co-operative learning based methods. Retention was measured by examining the students immediately after the course finished; the findings suggest that active learning can help to increase retention for students with average or below average scores⁹.

Another study shows that resting can support memory retention (Cowan et al. 2004; Della Sala et al. 2005; Dewar et al. 2012a; for a different view see Varma et al. 2017). A brief period of rest after learning new information leads to better delayed recall performances than switching to another task, termed resting effect. Explanations for the resting effect can be found in retroactive interference and consolidation theories. Retroactive interference states that memory formation is disturbed by material encoded after learning of a memorandum leading to a loss of the memory content⁹.

These all studies shows that memories take time to consolidate that is to transferred in to long term memories and providing a wakeful resting period show support in memory consolidation and retention. Nowadays most of our young generations are facing the difficulty of short memory retention. This is because of their inattentive behavior towards particular activities they are doing. During the exam periods the students tend to work hard on their studies instead of taking small breaks and will skip their sleeping hours. These all

eventually causes less memory retention and is primarily due to lack of resting period between studies¹⁰.

In nursing students, memory retention is needed for making their profession wonderful. Everything that they studied has to be practiced in their daily life and job setting. So nothing is there to discard. But due to hectic syllabus and busy schedule nursing students are not getting enough time to memorize and revise what they learnt. So here we are trying to find a simple solution which can be applied in their classes itself.

POPULATION: Population is the entire set of individuals or objects having some common characteristics. The population selected for the study was first year Bsc nursing students (first semester and second semester students) of selected Colleges, Perinthalmanna

SAMPLE: A sample is a subset of population elements. The quality of the sample for quantitative study depend on how typical, or representative, the sample is of the population with respect to the variables of concern the study.⁷

The sample used for the study was first year Bsc nursing students (first semester and second semester students) at Al Shifa college of Nursing, Perinthalmanna who adhere to eligibility criteria

SAMPLE SIZE: Sample size was estimated based on a similar study cochran formula for sample size calculation which is mainly used for descriptive studies. From a previous study it is calculated the values such as $r=2.8416$, $p=0.0315$ and $q=0.285$ and sample size was estimated at 35 Using the power analysis also estimated the sample size with power level of 0.20 an alpha level 0.02 and an effect size of 0.10, the estimated sample size was 35. Based on an average number of students, the sample size was approximated and determined as 40.

SAMPLING TECHNIQUES: Sample size was estimated based on a similar study cochran formula for sample size calculation which is mainly used for descriptive studies. From a previous study it is calculated the values such as $r=2.8416$, $p=0.0315$ and $q=0.285$ and sample size was estimated at 35 Using the power analysis also estimated the sample size with power level of 0.20 an alpha level 0.02 and an effect size of 0.10, the estimated sample size was 35.

Based on an average number of students, the sample size was approximated and determined as 40.

SETTING OF THE STUDY : Settings are the physical location and condition in which data collection take place in a study.³⁶ The study was conducted in Al Shifa college of nursing, Perinthalmanna. The setting of the study were conveniently selected in terms of feasibility and availability of subjects.

THEORETICAL FRAMEWORK : To describe the relationship of the concepts of this study, Baddeley and Hitch's Interference theory has been utilized.

CRITERIA FOR SAMPLE SELECTION:

These are the certain criteria, which is used for selecting the samples suitable for conducting the study. It includes inclusion criteria & exclusion criteria.

- Inclusion criteria

First year Bsc nursing students

- o who are available during data collection
- o who are willing to participate in the study

- Exclusion criteria

First year Bsc nursing students

- o who are participating in another research study
- o who are having disorders affecting memory
- o who are taking medications that affect memory

TOOLS OR INSTRUMENTS

Tool used for the study was:

- **Tool 1:** Self-administered structured questionnaire for assessing demographic variables
- **Tool 2:** Self-administered structured questionnaire for assessing level of memory retention
- **Tool 3:** Self-administered structured questionnaire of mathematical calculations

DESCRIPTIVE STATISTICS

The investigator adopted

- o Measures of central tendency, to find the average score of the test results.
- o The selected socio demographic data was analyzed by using frequencies and percentages.

INFERENTIAL STATISTICS

The investigator adopted

- o Independent t test, to compare the results of Experimental and Control groups.
- o Chi square test, to determine the association between the dependent variable (memory retention) and the selected demographic characteristics under study

THE RESULTS ARE PRESENTED IN

SECTION 1: Distribution of demographic characteristics of first year BSc nursing students

SECTION 2: Assessment of post-test level of memory retention among first year BSc nursing students in experimental and control group.

SECTION 3: Analysis of effects of wakeful resting on memory retention among first year BSc nursing students in experimental and control group.

SECTION 4: Assessment of association between post test level of memory retention and selected socio-demographic variables of both experimental and control group.

SECTION 1

Distribution of demographic characteristics of first year BSc nursing students

The characteristics of the participants were as follows

- Out of 80 students from selected colleges in Perinthalmanna, in the control group 6% of students belongs to 17-18 years, and 32 % belongs to 19-29 years, 2% belongs to 20-21 years and in experimental group 18% students belongs to 17-18 years, another 18% belongs to 19-20 and 4% belongs to 20-21years.

- Out of 80 students from selected colleges in Perinthalmanna, in the control group 14% belongs to male gender group and 26% belongs to female gender group. In experimental group 8% belongs to male gender group and 32% belongs to female gender group.
- Out of 80 students from selected colleges in Perinthalmanna, in the control group 7% students have 4-5 hours, and 26% have 5-7 hours of sleep and another 7% have 7-9 hours of sleep. In experimental group 7% have 4-5 hours of sleep, 31 % have 5-7 hours of sleep and 2% have 7-9 % of sleep.
- Out of 80 students First year BSc nursing students in selected colleges in Perinthalmanna none of them are using any medication such as anti- anxiety, anti-depressants and sleeping pills.
- Out of 80 students First year BSc nursing students in selected colleges in Perinthalmanna nobody have any disease that affect memory such as hypothyroidism hyperthyroidism and vitamin B12 deficiency.

SECTION 2: Assessment of post-test level of memory retention among first year BSc nursing students in experimental and control group.

- In control group 2 (5%) students have mild memory retention, 30 (75%) have moderate memory, and 8 (20%) have high memory retention. In experimental group, 1 (2.5%) have moderate memory, 39 (97.5 %) have high memory retention.

SECTION 3: Analysis of effects of wakeful resting on memory retention among first year BSc nursing students in experimental and control group.

- The post-test score shows that the calculated value (5.05) is higher than table value (2.00) which indicates that there is high level of memory retention among first year BSc Nursing students in experimental group than control group. It implies that post learning wakeful resting is effective in memory retention

SECTION 4: Assessment of association between post-test level of memory retention and selected socio-demographic variables of both experimental and control group.

- Chi square value for level of memory retention and age is 19.02, which is greater than table value (9.49). Hence we rejected H₀ which implies there is a significant association between memory retention and age.
- Chi square value for level of memory retention and gender is 22.58, which is greater than table value (5.99) hence we rejected H₀ which implies that there is a significant association between gender and memory retention.
- Chi square value for level of memory retention and hours of sleep is 11.31, which is greater than table value (9.49) hence we rejected H₀ which implies that there is a significant association between hours of sleep and memory retention.
- There are two more demographic variables such as usage of medications and diseases that affecting the

memory retention. The samples who participated in this study did not use any kind of medications or not having any kind disease conditions which affects memory. And hence there is no association can be found between level of memory retention and these two variables.

DISCUSSION

present study was aimed to assess the effect of post learning wakeful resting on memory retention among First year BSc Nursing students in selected colleges at Perinthalmanna. The study assessed the post test level of memory retention and also assessed the effect of post learning wakeful resting on memory retention by comparing control and experimental group of First year Bsc nursing students in selected college at Perinthalmanna.

The study findings revealed that, in control group 2 (5%) students have mild memory retention, 30 (75%) have moderate memory, and 8 (20%) have high memory retention. In experimental group, 1 (2.5%) have moderate memory, 39 (97.5 %) have high memory retention.

Analysis of effects of wakeful resting on memory retention among first year BSc nursing students in experimental and control group depict that the calculated t value (5.05) is higher than table value (2.00) which indicates that there is high level of memory retention of first year BSc Nursing students in experimental group than control group. It implies that post learning wakeful resting is effective in memory retention. The result resembles to the study; Effects of wakeful resting versus social media usage after learning on the retention of new memories in which result showed that social media usage, compared with wakeful resting, had detrimental effects on memory performance over both retention intervals and suggest that learners opt for wakeful resting over social media usage as a learning-break activity

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