

The relationship between critical thinking ability and learning style of nursing and midwifery students

Nikta Tavana-Nezhad¹, Sharareh Kazemi², Asrin Saffari², Fariba Fatehi³, Mojdeh Rahmanian⁴, Foad Rahimi^{2*}

¹Nursing and Midwifery faculty, Midwifery Department, Islamic Azad University of Sanandaj, Iran

²Kurdistan University of Medical Sciences (KUMS), Sanandaj, Iran

³Social Determinations of Health Research Center, Qazvin University of Medical Sciences, Qazvin, Iran

⁴School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran.

*Corresponding author: E-Mail: foadrahimi63@yahoo.com

ABSTRACT

Background: One of the factors that greatly influences the process of educating and learning is the individual's learning style. The present study seeks to study the influence of learning styles on critical thinking ability of nursing and midwifery undergraduate students.

Method: This cross-sectional study was conducted on nursing and midwifery students in the academic year 2015. The questionnaire included demographic information and 12 questions on learning style. Totally, 100 nursing and midwifery undergraduate students filled the questionnaires and took part in the research. Data was analyzed using descriptive and inferential statistics.

Results: The majority of nursing and midwifery students who took part in this research aged 18 to 25. Most of them (80%) were single. The majority of nursing and midwifery students (44%) had an adaptive learning style. The following frequencies were reported for other learning styles: divergent style (33%), convergent style (13%) and assimilator (10%). According to the analysis, there was no statistically significant correlation between the age and gender of the students and their learning style. However, a statistically significant correlation was observed between the educational year and learning style.

Conclusion: Students have various learning styles and teachers need to take this issue into consideration and use various teaching methods. To this end and keeping in mind the variety of learning styles, it is recommended to conduct empirical researches with the goal of using various teaching methods in order to improve nursing and midwifery students' learning.

KEY WORDS: learning style, student, Kolb's model.

1. INTRODUCTION

Learning is a continuous process during human's life. The complicated procedure of language acquisition that apparently is accomplished with ease and learning complicated scientific points and solving difficult problems all take place through learning procedure. It is possible for learning to be accomplished without interference by any especial person as teacher. It may also be accomplished through the supervision of teacher and follow a particular goal and purpose known as formal learning. Since educational curricula were practically undertaken in educational centers, planners, researchers, and teachers started encountering various problems (Abu-Moghli, 2005). As the factors that influence learning are quite widespread and various, it is important to identify them in order to resolve the problems and deficits in the educational system. Skinner believes no effective and real educational systems can be prepared unless the two learning procedures or actions (namely, learning and teaching) are completely identified and understood (Meehan-Andrews, 2009). According to some researchers, learning does not always follow the same path and we cannot think of all the learners to have the same learning speed and capacity. In fact, various factors can affect the process of learning. Some of these factors are concerned with the characteristics of the learner and others point to social backgrounds of learning (Ku and Ho, 2010; Rasolabadi, 2015). As of learner's characteristics, we may refer to learner's traits. Learning style is a part of the concept of individual differences and it can be defined as the way people organize and develop new information and experience in their minds or as the method learners prefer in learning course materials (Ozturk, 2008). In an attempt to answer this question why the educational system is useful for some but not useful for others, we can point to the fact that each individual or student has his own unique learning style (Rassool and Rawaf, 2007). Another issue which has attracted a lot of attention in learning researches conducted in the last decades is the styles the students and learners use to learn something (Duff, 1992). According to the results of certain researches, learners learn the best when they study with their preferred style (Arthurs, 2007). Divergent, convergent, assimilator, and accommodator styles are some categories of learning styles proposed by David Kolb under the title "Kolb's experiential learning theory" (Sadler and Smith, 2004). In this pattern, learning is assumed to take place in a four-stage cycle taking place sequentially following one another: (first) objective experience, (second) observing and thinking about that experience, (third) proposing a hypothesis or some kind of theory about it, and (fourth) testing that theory or hypothesis in scientific situations (Suliman, 2006). The trainers have been aware of this fact for many years that people's learning style influences their learning and a significant

correlation has been observed between the prefer ability of learning methods such as gender, personality, memory, and clinical education with students' educational progress (Profetto-McGrath, 2003).

Researches indicate that acquiring critical thinking skills has turned into one of the most prominent and obvious elements of theoretical education and clinical performance (Miller and Babcock, 1996). It has been shown that one of the most important goals of nursing and midwifery education is training learners capable of critical thinking so that they can take good care of the patient (Norris, 1995; Jahangiri, 2016; Rahimi, 2014; Rasolabadi, 2015).

Further to what was said above, we may say that critical thinking backgrounds and tendencies and students' learning styles are the major concerns of trainers and their teachers. By studying the prefer ability of nursing and midwifery students' learning styles, trainers realize how to interpret and react to students' reactions to learning education procedure and learning environment. Thus, we decided to investigate the relationship between learning styles and critical thinking backgrounds in nursing and midwifery students.

2. METHODOLOGY

A descriptive research was designed to study all the nursing and midwifery students in academic year 2015. The population was composed of 100 people and convenient sampling method was used for sampling. Using a questionnaire composed of 3 sections completed by the students, the present research was conducted by getting the students answer 7 questions on personal information, 12 statements in the form of Kolb's 4 learning style inventories and 75 statements of underlying factors of critical thinking (Facione and Facione). First, students' personal information was collected using self-reporting method, then their learning style preference was determined.

Then, the mean and standard deviation of students' learning style preference was calculated. In order to determine students' approach to underlying factors of critical thinking, a score of 1 to 6 was given to the answers they had given to the statements of critical thinking test. Then, the total mean and SD and 7 subsets were determined. Finally, T-test and chi-square test were used to compare the means of critical thinking and learning style. SPSS 19 was used to analyze the data.

3. RESULTS

Table.1 represents the learning style of the nursing and midwifery students who had participated in this research. Some 100 nursing and midwifery students had taken part in this research. The minimum and maximum age of the participants was 18 and 37 years old respectively. The majority of participants aged 18 to 25 years old (89.7%). Most of the students were single (80%). The majority of participants were nursing or midwifery sophomore students with their average (41.30%) being 16 with a standard deviation of 16.77 ± 1.31 . Frequency distribution of nursing and midwifery students' learning styles was indicative of the fact that most of them (44%) had an adaptive learning style.

Table.1. Learning styles of nursing and midwifery students

Learning styles	Adaptive	Divergent	Convergent	Assimilator
N frequency %	44%	33%	13%	10%

DISCUSSION

As the results indicate, most nursing and midwifery students had adaptive and divergent learning styles. There are various results available from previous studies some of which are in line with the results achieved in current research. Valizadeh (2006), arrived at similar results in a study of nursing and midwifery students' learning styles (Valizadeh and Zamanzadeh, 2006). On the other hand, the studies conducted by Kelly (2001), considers assimilation as the dominant learning style among these students (Brower, 2001). These incongruent results are probably caused due to differences in sample volume and the cultural differences of the units studied.

The studies conducted all around the world about the learning style of nursing and midwifery students show that adaptive learning and divergent learning are the dominant styles among these students. These results are in line with the results we have achieved in our research. Kolb believes that nearly all nursing and midwifery students are prone to having a divergent learning style (Rassool and Rawaf, 2007). People with this learning style are better able to view objective situations from different points of view (Zhang and Lambert, 2008). Students can utilize their power of imagination and thinking to gain more professional knowledge and skills (Astin, 2006). To prepare such educational situations, it is recommended to utilize theoretical learning methods based upon problem solving, group discussion, brain storming, role playing, computational simulation, and representation in the environment of clinical and theoretical training. As the dominant learning method observed among nursing and midwifery students in this research was adaptive style, it is good to mention that those with an adaptive learning style prefer to learn through active experimentation and concrete experience. These people quickly accommodate themselves to new situations and prefer to learn by actively doing the jobs. They would like to experience and experiment new situations and solutions repeatedly (Huxham, 2005). They use intuition, trial and error to solve problems, it is their utmost pleasure to undertake projects and involve themselves in new and challenging experiences, and they prefer acting to rational analysis (D'Amore, 2012; Rafat, 2015). The adaptive ones are people-oriented and sometimes referred to as active

learners. In other words, they are quite active in the process of learning (Paterson, 2010). The greatest strength of an adaptive person is that he is capable of correctly carrying out the plans (Profetto-McGrath, 2003). Rather than merely relying on their technical analysis, they try to use the information they gain from people to solve problems (Li, 2011).

4. CONCLUSION

Considering the influence of various educational strategies in responding to educational demands of learners, using various teaching strategies to improve nursing and midwifery students' learning based on their learning style seems to be an effective measure. For this purpose and keeping in mind the learning style of nursing and midwifery students, it is recommended to use teaching methods based upon role play and computational simulation along with educational lectures besides brain storming in the form of group meetings. The majority of nursing students who took part in this research had an adaptive learning style. Thus, professors are recommended to use the above mentioned methods beside other educational techniques. A review and reconsideration of current course curricula can provide us with the best opportunity to review educational and training methods in accordance with different learning styles of nursing and midwifery students and to improve the quality of education (Astin, 2006).

REFERENCES

- Abu-Moghli F, Khalaf I, Halabi J, & Wardam L, Jordanian baccalaureate nursing students perception of their learning styles, *International Nursing Review*, 52, 2005, 39-45.
- Arthurs J.B, A juggling act in the classroom: Managing different learning styles, *Teaching and learning in nursing*, 2, 2007, 2-7.
- Astin F, Closs S.J, & Hughes N, The self-reported learning style preferences of female Macmillan clinical nurse specialists, *Nurse education today*, 26, 2006, 475-483.
- Brower KA, Stemmans CL, Ingersoll CD, & Langley DJ, An investigation of undergraduate athletic training students learning styles and program admission success, *Journal of athletic training*, 36, 2001, 130.
- Damore A, James S, & Mitchell E.K, Learning styles of first-year undergraduate nursing and midwifery students: A cross-sectional survey utilising the Kolb Learning Style Inventory, *Nurse Education Today*, 32, 2012, 506-515.
- Duff V, Johnston N, & Laschinger H, Learning styles of Chinese nursing faculty and career choice preferences, *Journal of advanced nursing*, 17, 1992, 229-233.
- Huxham M, Learning in lectures Do 'interactive windows' help?, *Active learning in higher education*, 6, 2005, 17-31.
- Jahangiri M, Karimi F, Gharib A, & Rahimi F, Effect of family centered care on patient's family satisfaction in intensive care unit, *Journal of Chemical and Pharmaceutical Sciences*, 9, 2016, 690-692.
- Ku K.Y, & Ho I.T, Dispositional factors predicting Chinese students' critical thinking performance, *Personality and Individual Differences*, 48, 2010, 54-58.
- Li Y.S, Chen H.M, Yang B.H, & Liu C.F, An exploratory study of the relationship between age and learning styles among students in different nursing programs in Taiwan, *Nurse Education Today*, 31, 2011, 18-23.
- Meehan-Andrews T.A, Teaching mode efficiency and learning preferences of first year nursing students, *Nurse education today*, 29, 2009, 24-32.
- Miller M.A, & Babcock D.E, *Critical thinking applied to nursing*, 7, Mosby, St. Louis, 1996.
- Norris S.P, Format effects on critical thinking test performance, *Alberta journal of educational research*, 41, 1995, 378-406.
- Ozturk C, Muslu G.K, & Dicle A, A comparison of problem-based and traditional education on nursing students critical thinking dispositions, *Nurse education today*, 28, 2008, 627-632.
- Paterson T, Generational considerations in providing critical care education, *Critical care nursing quarterly*, 33, 2010, 67-74.
- Profetto-McGrath J, Hesketh K.L, Lang S, & Estabrooks C.A, A study of critical thinking and research utilization among nurses, *Western Journal of Nursing Research*, 25, 2003, 322-337.
- Profetto-McGrath J, The relationship of critical thinking skills and critical thinking dispositions of baccalaureate nursing students, *Journal of advanced nursing*, 43, 2003, 569-577.
- Rafat S, Gharib A, Rafat S, & Rahimi F, Related factors in medication error based on nurses self-report in Sanandaj, Iran, *Der Pharmacia Lettre*, 7, 2015, 198-201.

- Rahimi F, Gharib A, Beyramijam M, & Naseri O, Effect of self-care education on self efficacy in patients undergoing hemodialysis, *Life Science Journal*, 11, 2014, 136-140.
- Rasolabadi M, Khaledi S, Khayati F, Kalhor M.M, Penjvini S, & Gharib A, Scientific production of Medical Universities in the West of Iran: A scientometric analysis, *Acta Informatica Medica*, 23, 2015, 206-209.
- Rasolabadi M, Rasouli-Ghahfarkhi S.M, Ardalan M, Kalhor M.M, Seidi J, & Gharib A, Epilepsy research in Iran: A scientometric analysis of publications output during 2000-2014, *Acta Informatica Medica*, 23, 2015, 374-378.
- Rassool GH, & Rawaf S, Learning style preferences of undergraduate nursing students, *Nursing Standard*, 21, 2007, 35-42.
- Sadler-Smith E, & Smith P, Strategies for accommodating individuals styles and preferences in flexible learning programmes, *British journal of educational technology*, 35, 2004, 395-412.
- Suliman W, Critical thinking and learning styles of students in conventional and accelerated programmes, *International nursing review*, 53, 2006, 73-79.
- Valizadeh L, & Zamanzadeh V, Nursing and midwifery students learning styles in Tabriz medical university, *Iranian Journal of Medical Education*, 6, 2006, 136-140.
- Zhang H, & Lambert V, Critical thinking dispositions and learning styles of baccalaureate nursing students from China, *Nursing & health sciences*, 10, 2008, 175-181.