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Comparison of nursing and midwifery students' perceptions of the educational environment

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ABSTRACT

Educational environment is an extremely essential part on students' learning and educational activity. Perception of educational environment influences student learning and educational outcomes. Learning is situated within a given environment and cannot be dissociated from the context in which it occurs. The DREEM (Dundee Ready Educational Environment Measure) questionnaire is an essential instrument for measuring educational environment. The aim of the study was to compare nursing and midwifery students' perceptions of through academic years about educational environment. A cross-sectional study was conducted with nursing and midwifery students in Hamadan Nursing and Midwifery Faculty. In this study 308 students including 249 nursing and 59 midwifery students were participated. The Dundee Ready Education Environment Measure questionnaire was applied. 79.65% of participants were nursing students and 20.4% midwifery students. The highest average perception of the education climate was 21.87 as to second nursing semester students. The findings showed that the perception of the lower levels students in regarding learning, instructors, self-studentship, climate of the faculty subcategories had significant difference than high-year students, and in self-social subcategory data showed that there is no significant difference between the perceptions of the students in different academic years. Students in the first, second, third and fourth years had different perceptions towards school environment. It is required that pay more attention to nursing and midwifery education climate and improve the learning environment and educational programs, and pay special attention to the difficulties in third and fourth years nursing and midwifery students.

Keywords: educational environment, midwifery, nursing, student

INTRODUCTION

The educational environment is a crucial component of student learning [1] and a likeness to the quality of the curriculum. Evaluation of the educational environment is important for the providence of a high-quality and student-centered educational program [2]. Perception of the educational environment may be characterized as the educational climate (EC) and has been defined as “the soul and the spirit of the nursing and midwifery faculty environment and curriculum”. Therefore, the EC is reflected to mean “the whole thing that is happening in the teaching space, in a classroom, in a department, in the medical or nursing school, or in the university” [3]. The National School Climate Council [2007] defines “school climate” as “grounded on forms of people’s experiences of school life and reveals norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational constructions.”[4]. It has been found that the quality of school facilities affects students’ achievement [5]. The EC has an essential influence on student learning. Whereas some of the research into faculty climate has emphasized on teachers' perceptions, Several studies have pointed out that students' perceptions of the psychosocial parts of the classroom learning environment are obviously correlated with motivational and achievement consequences [6].

Kalis[1980] proposed that schools keep a school climate exclusive for each organization [7]. Climate concept deals with the total environmental quality in an organization. The scopes of an environment contain the physical and material aspects, the social aspect concerned with the presence of people and groups, the patterned relations of people and groups, and faith systems, values, cognitive constructions, and sense [8]. School climate takes an effect by teaching atmosphere processes [9], and values [10].

The discussion regarding school climate and its influence on students’ success exist among researchers in theory base, quantitative, and qualitative studies [11-13].

In the middle school, students’ perceptions of school environment have an effect on their academic success directly and indirectly through three kinds of school commitment: school involvement, credentials with school, and the usage of self-control approaches, which in turn, affected students’ academic achievement [14].

The World Federation for Medical Education emphasized the learning environment as one of the goals for the appraisal of medical education plans [15]. Assessment of the learning environment is crucial to the delivery of a high-quality, student-centered program [16].

One previous study disclosed that students profited from the improvements implemented following the results of a survey using the DREEM inventory [17]. The aim of this study was to compare nursing and midwifery students’ perceptions of the educational environment through academic years at Hamadan nursing and midwifery faculty.

MATERIALS AND METHODS

Design/Setting

A cross-sectional study was done in Hamadan Nursing and Midwifery Faculty. A structured questionnaire containing background characteristics and DREEM questionnaire was applied and the data was collected. Participants were identified by census sampling.

Sample size and data collection

In this study, 308 students including 249 nursing and 59 midwifery students participated from 2nd semester to 4th year. Students of the first semester were excluded due to lack of knowledge on various aspects of faculty and to reduce bias in the study.

Instrument

The DREEM instrument is constructed to measure students’ perception of the education climate [18]. The Dundee Ready Education Environment Measure (DREEM) tool is a 50-item, self-administered, Likert-style questionnaire extending from 0 (strongly disagree) to 4 (strongly agree). Of the 50 items, 9 are contrary scored; therefore a lesser score is preferred. The DREEM tool is formed to measure student perception of educational environment [19].

The five subscales of the learning environment are identified as students' perception of learning, students' perception of teachers, students' academic self-perceptions, students' perception of atmosphere and students' social self-perceptions [20].

Component of students' perception of learning (SPL) consists of 12 items, students' perceptions of instructors (SPT) was composed of 11 items, students' academic self-perception (SASP) was made of 8 items, whereas students' perceptions of atmosphere (SPA) consisted of 12 items and students' social self-perceptions (SSSP) possessed 7 items [17], and the overall score was 200. This instrument has constantly shown high reliability in many implementations, and has been shown to have high content and construct validity. The DREEM tool has also been used to measure (EC) in nursing schools [17], [19]. Roff[2005] showed the internal consistency reliability of DREEM tool to be 0.91 [18].

The DREEM tool was intentionally designed as an international tool for the measurement of students' perceptions of health professions programs and climate. This tool was carefully chosen for this meticulous study for the reason that it has been proven to be a valid instrument to produce a profile of an organization's strengths and weaknesses and to make comparative analyses of students' perceptions of educational environments both within an organization and among organizations [19].

We used an Iranian- language version of DREEM questionnaire that has been validated and used previously [21]. The internal consistency reliability index in this study was 0.86 (Cronbach's alpha). This version and the original English version were revised by Iranian nursing and midwifery educators to modify idiomatic differences and validation. Prior to administration, a pilot study was done to ensure that the different items were well understood by nursing and midwifery students, and then the final questionnaire was applied in this study.

Data Analysis

The SPSS 16 program was used to characterize the study population, and descriptive statistic, ANOVA and Tukey test was used to analyze the study data.

Ethical Consideration

The study approved through the Medical Research Ethical Committee of the Hamadan University. The participants took part in this study with informed consent and voluntarily, also their identities were not disclosed and the results were published confidentially. The Researcher described the objectives of the study to the students and how the data would be treated, before gathering data.

RESULTS

In this study overall 84.15% of the questionnaires was filled and returned by students as follows: 8.44% first-year nursing students, 24% second- year nursing students, 4.54% second year of midwifery students, 19.2% third-year nursing students, 7.8% third-year midwifery students, 28% fourth year nursing students and 8.12% senior midwifery students. The demographic variables are in table 1, students participating in the study in the table 2, and Average perception by students in table3.

The highest rate of perception in the learning subcategory (28.7) belonged to second year nursing students and the lowest rate (17.4) belonged to fourth year midwifery students. The highest perception rate (23.30) was related to the ratio of instructor subcategory to the second year nursing school students and the lowest rate (15.70) was related to the fourth year midwifery students. The highest perception rate (18.73) in self-studentship subcategory belonged to the first year nursing students and the lowest rate (11.52) belonged to the fourth year midwifery students. The highest perception (28.62) regarding the faculty belonged to the first year nursing students and the lowest rate (21.17) belonged to the fourth year students of midwifery. The highest perception rate (14.04) regarding self-social subcategory belonged to first year nursing students and the lowest rate (12.92) belonged to the fourth year students of midwifery.

Table 1. Summary of demographic variables

Variable	Level of variable	N (%)
field	Nursing	245(79.6%)
	Midwifery	63(20.4%)
Sex	Female	224(72.7%)
	Male	84(27.3%)
Age	19-22	202(65.6%)
	22-25	86(27.9%)
	>25	20(6.5%)
Degree	1	26(8.4%)
	2	88(28.5%)
	3	83(27%)
	4	111(36.1%)
Diploma grade	18.1-20	102(37.2%)
	16.1- 18	107(38.9%)
	14.1- 16	35(15.6%)
	12-14	12(6.2%)
Previous semester grade	18.1-20	6(2.4%)
	16.1- 18	108(35.5%)
	14.1- 16	162(53%)
	12-14	28(9.5%)
part time student work	Yes	26(8.4%)
	No	282(91.6%)

Table 2. Frequency of students participating in the study based on semester

Filed Academic year	Nursing		Midwifery		Total	
	number	percent	Number	percent	number	percent
Second semester	26	8.4%	-	-	26	8.4%
Second year	74	24%	14	4.5%	88	28.5%
Third year	59	19.2%	24	7.8%	83	27%
Fourth year	86	28%	25	8.1%	111	36.1%
Total	245	79.65%	63	20.4%	308	100%

Table3. Average perceived by students to learning, teachers, students self, school climate and social self.

student perception	Average	Learning	Teachers	Self-studentship	School climate	Self-social	Total	Mean
second nursing semester		26	21.96	18.73	28.62	14.04	109.35	21.87
second nursing year		28.27	23.30	16.93	26.12	12.87	107.09	21.4
Third nursing year		24.95	20.48	18.66	25.91	13.28	103.28	20.65
fourth nursing year		22.66	19.22	16.93	22.15	12.97	83.93	18.8
second midwifery year		21.17	19.31	14	24.85	11.71	91.04	18.3
Third midwifery year		23.14	21	17.32	23.86	13.20	98.52	19.7
fourth midwifery year		17.14	15.70	11.52	21.17	11.13	76.66	15.3

Comparison of the data showed that there was a significant difference between the perception of the fourth year midwifery students (the fourth year midwifery students had the lowest perception towards learning) to the perception of the second semester nursing students, second year nursing students, third year nursing students regarding learning ($p = 0.000$). In this study, there was also a significant difference between perception of the fourth-year nursing students and fourth year midwifery students regarding learn ($P = 0.02$)

With regard to the comparison of the perceptions of students with university instructors, the findings showed that the perception of the fourth year of midwifery students had a significant difference than the first year nursing students $p = (0.010)$, second year nursing students $p = (0.000)$, third year nursing students $p = (0.026)$.

With regard to the comparison of the perceptions of students with their self-studentship, the data shows that there is a significant difference between the perception of the fourth year students of midwifery with the perceptions of the first year nursing students $p = (0.001)$, perceptions of second-year nursing students $p = (0.004)$, perceptions of third-year nursing student $p = (0.005)$ and perceptions of the fourth year nursing students $p = (0.005)$.

With regard to the comparison of the perceptions of students regarding the climate of the faculty, the findings suggest that there is a significant difference between the perception of fourth year midwifery students and the first year nursing students $P = (0.023)$.

With regard to the comparison of the perceptions of the students of the second semester of the first year, second year, third year, and fourth year of nursing and midwifery students' perceptions of their self-social data showed that there is no significant difference between the perceptions of the students in different years and groups in this field.

DISCUSSION AND CONCLUSION

Training nursing and midwifery students is very important in public health and if this issue is neglected, the community health, nursing and students' discipline will all suffer. The academic community expects the school climate to encourage learning as much as possible to reduce the risk of failure in school. Using DREEM as a monitoring tool can be an appropriate intermediate to modify educational climate. In this study, in general, 308 (84.15%) of the questionnaires were returned by students, of which 247 (80.2%) returned by nursing students and 61 (19.8%) returned by midwifery students. The reason for this is probably because of more number of admitted students in two semesters and admittance of fewer students in one semester. In addition, nursing students participated more willingly in the study. In this study, 224 (72.7%) of the participants were female and 84 (27.3%) were male. The difference is due to the type and nature of the fields in the School of Nursing and Midwifery and that basically only women can participate in midwifery and that they are also more willing than men to study in nursing. Most students participating in the study, were 86 nursing students (28%), which is probably due to having more experience and the fewest of them were second year Midwifery students 14 (4.54%) which was due to fewer number and less experience for participation in the study.

Global Alliance for Medical Education has emphasized on the suitability of the learning environment and it has introduced learning environment as one of the objectives of the evaluation program [15]. Evaluation of learning environment is essential for the provision of student-centered and high quality educational programs [2]. In this study, the perception of students has been downward from the first year to the fourth year of learning environment. Rothoff et al. [2011] demonstrated that the growing reduction in perception of the students in the learning environment is not only because of the educational facilities and provisions, but due to personal issues such as age, independency and criticizing ability [22].

There was a significant difference between the perception of the first, second and third year students of nursing with the fourth-year midwifery students, regarding learning subcategory, and this is probably because of the type of lessons in these courses, because students in the first three years are younger than the fourth year students and are acquiring theoretical courses like physiology, anatomy, internal nursing and surgery, psychiatric nursing, management in nursing and it seems that the attractiveness of learning these lessons seem to be more than clinical courses. Zawawi and Elzubeir [2012] in their study found a significant difference for learning subcategory of KSAU-HS and KSU students ($p < 0.000$) [23]. Senior students of this study had a different perception toward nursing profession or because of more presence at the university had different expectations towards nursing and their professional future. But the Anion Wu [2005] and Pryjmachuk, Easton and Littlewood [2009] in their study also showed that younger students are more likely to quit the nursing profession than are older students [24-25]. Of course in this study the tendency to quit of the students was not examined, and instead the students' perceptions of the learning environment were examined.

There was a significant difference between the perception of the first, second and third year students of nursing with the fourth-year midwifery students, regarding instructor subcategory, and this is probably because of the type of treatment of instructors, their performance in the authoritarian to cooperative range, having communication skills, giving feedback, making materials understood, anger control, way of preparing for teaching, using modern teaching methods, academic status and experience of instructors and type of courses, because the theoretical instructors are different from the clinical instructors in terms of degree and capability, in addition the type of courses (basic, general and specialized subjects versus the clinical courses) that are taught by teachers can have an impact on this sub-class, it should also be noted that the lower-year students have recently, entered bedside and met clinical educators which affects their perception on instructors, this situation is repeated for the fourth year students, and it has been criticized and they are likely to have different expectations. Jeffrey's study [2005] also showed that there is

a significant difference between the perception of the students regarding the study towards the instructor before, during and after bedside [26].

The perception of the first, second and third year nursing students was different from the fourth-year midwifery students. The reason is probably that the self-studentship expectation of the fourth year students of midwifery is not met. Students in the first, second, third and fourth years had different perceptions towards learning professional activity and growing capacity, they also had different perceptions about new learning methods, readiness to perform professional activities, spirit of cooperation, and problem-solving skills and self-memory in comparison with the fourth year midwifery students. Jeffrey's study [2005] also showed that there is a significant difference between the perception of the students regarding the study towards the self-studentship before, during and after bedside [26].

The perception of the first year nursing students regarding the climate of the faculty was different from the fourth-year midwifery students. This means that the perceptions of the first-year students of nursing regarding the proper and healthy state of mind to learn, proper educational environment, development of personal communication, learning motivation, and supporting resources is different from the fourth year midwifery students. Fourth year students of midwifery, probably due to gaining experience have noticed some of the possible shortcomings in the faculty. Bakhshi, Yaghouti, and Chalaki[2007] in their study determined higher scores for new arrival students and lower scores ($P > 0.05$) for internship period students [27]. This situation is likely created because senior students deem it impossible to promote during this period, and besides criticizing the climate of the faculty, they are more occupied with entering higher levels or entering the labor market, but there is no such possibility in this period, thus progress is more probable for first year students. As new comers, the faculty is new to first-year students and they face with new things and have different perspectives compared to the fourth year midwifery students.

There was no significant difference between the perception of the first, second, third and fourth-year, regarding self-social and this means that most probably the emotional and social status of the students, having good friends, and palatability of facilities for students of Nursing and Midwifery has been identical.

New students by entering the new academic environment and studying in university education have a sense of joy and satisfaction and demonstrate a strong desire for entering the adult world, but the passion and satisfaction of students during the academic course is reduced due to independency and real-world experience and criticism of environment and clinical and educational process. KarimiMoonaghi and coworkers [2014] in their study show that foster professional behavior and responsibility in the students, emotional objectives should be added to the nursing curriculum and put into practice. The faculty should create clinical and theoretical situations to transfer and practice technical knowledge during theoretical situations and internship as well as to provide ground to store and use ethical knowledge by presenting emotional objectives[28]. These students spend most of their time in doing clinical practice in third and fourth year which brings them different experiences in the real world. Flute and Linden [2016] have determined four characteristics of clinical learning that affect gaining learning experiences as physical space, interactive and psychological factors, organizational culture and education and learning components and that the learning outcome determines the success and independence of students [29]. Fourth-year students because spend more time doing clinical practice than lower year students, so they have some criticism to the status of the culture dominating the bedside and teaching and learning, communication development and collaboration on the solvation of clinical problems, acquiring learning experiences and clinical support, that consequently affects the perception of this category of students towards learning environment. Youssefi, Yazdan Nik, and Mohammedi[2015] in their study showed that clinical learning environment in Iran has ambiguous components in the nursing care role, routine-based nursing care, and unreviewable and dependent intellectual climate, incompetency of clinical trainers and patient education [30].

Universities play a vital role in social progress and it is require to makes education and its practice intellectual, high quality and affordable [31]. Policymakers and planners need to pay more attention to nursing education climate and in particular clinical climate of nursing education and besides considering an appropriate physical environment, mental, psychological, and social environment, organizational culture, teaching and learning factors, highly qualified teachers and model role, reevaluate the creation of learning opportunities and make the necessary efforts to improve the learning environment and educational programs. In general, promotion of the educational climate, increases learning. Development of educational climate enhances learning in students [32]. Hassanian and coworkers [2015] stated that in educational communities, knowledge must be create, gather transfer and used, so these functions must to include in the mission and strategic planning of nursing education, and it should be planned through operational

planning in order to enhance learning and create applicable knowledge[33]. Pimparyon's study [2000] showed that students with a positive learning environment were more educationally successful [34].

This study is conducted at the School of Nursing, and it is suggested to conduct this study in other disciplines or in a study with more features in medical students. In this study due to the limited number of samples, the census method was used. In this regard, it is proposed that in a larger study, random sampling be used to verify the validity of the findings of this study. One of the strengths of the study is using a valid tool to collect data, the existence of valid data and using a valid software and preparation of data and information on learning climate in nursing education.

A proper and healthy educational environment as a principle will increase learning and educational outcomes that directly affect public health. It is necessary, to pay more attention to the school climate dimensions including educators, faculty, self-studentship, and especially clinical learning, and pay special attention to the difficulties in third and fourth years nursing and midwifery students. This study showed that the students' perception of learning environment has a significant developmental aspect. The existence of a dynamic climate for students throughout the course, and at the bedside is emphasized particularly in terms of instructors, learning environment, learning and self-studentship. It is essential that corrective measures be applied in the workplace.

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REFERENCES

- [1] Genn J. Europe AfMEi. Curriculum, environment, climate, quality and change in medical education: a unifying perspective. AMEE, 2001.
- [2] Harden R. The learning environment and the curriculum. *Med Teach.* 2001; 23(4): 335-336.
- [3] JM G. AMEE Medical Education Guide No 23 (Part 1) Curriculum environment climate quality and change in medical education - a unifying perspective. *Med Teach.* 2001;23(4): 337-44.
- [4] school-climate-challenge-web.pdf, National School Climate Council, in The School Climate Challenge: Narrowing the gap between school climate research and school climate policy, practice guidelines and teacher education policy. 2007.
- [5] Uline C, Tschannen-Moran M. The walls speak: The interplay of quality facilities, school climate, and student achievement. *Journal of Educational Administration,* 2008;46(1): 55-73.
- [6] Fraser BJ. Science learning environments: Assessment, effects and determinants. *The international handbook of science education.* Dordrecht, The Netherlands: Kluwer; 1998.
- [7] Kalis M C. Teaching experience: Its effect on school climate. *Teacher morale. NASSP Bulletin,* 1980;64(635):89-102.
- [8] Tagiuri R. The concept of organizational climate. In R. Tagiuri & G. H. Litwin, *Organizational climate: Exploration of a concept.* MA: Harvard University, Division of Research, Graduate School of Business Administration. Boston. 1968.
- [9] Teddlie C R D. *The international handbook of school effectiveness research* New York: Falmer Press: 2000:
- [10] Vyskocil JR, and Goens A. Collective bargaining and supervision: A matter of climate. *Educational Leadership.* 1979;37: 175-177.
- [11] Aldridge J M, Fraser BJ, Ala'i K.G. Development of a questionnaire to assess students' views of school climate in Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA. 2011.
- [12] Bryk AS, Sebring P B, Luppescu S, Easton J Q et al. *Organizing schools for improvement: Lessons from Chicago.* Chicago, IL: University of Chicago Press; 2010.
- [13] Cohen J, et al. School climate: Research, policy, practice, and teacher education. *Teachers College Record.* 111;2009.

- [14] Wang M, Holcombe R. Adolescents' perceptions of school environment, engagement, and academic achievement in middle school. *American Educational Research Journal*. 2010;47(3): 633-662.
- [15] Karle H. Global standards and accreditation in medical education: a view from the WFME. *Acad Med*. 2006; 81(12): 543-548.
- [16] Harden R. The learning environment and the curriculum. *Med Teach*. 2001;23(4): 335e336.
- [17] Edgren G, Haffling A-C, Jakobsson U, Mcaleer S, Danielsen N. Comparing the educational environment (as measured by DREEM) at two different stages of curriculum reform. *Med Teach*. 2010;32(6): e233ee238.
- [18] Roff S. The Dundee ready educational environment measure (DREEM)-a generic instrument for measuring students' perceptions of undergraduate health professions curricula. *Med Teach*. 2005. 27(4): 322-325.
- [19] O'Brien A, Chan T, Cho M. Investigating nursing students' perceptions of the changes in a nursing curriculum by means of the Dundee ready education environment measure (DREEM) inventory: Results of a cluster analysis. *Int J Nurs Educ Scholarship*. 2008;5(1): 1-18.
- [20] Roff S, et al. Development and validation of the Dundee Ready Education Environment Measure DREEM. *Med Teacher*. 1997;19: 295-299.
- [21] Soltani Arabshahi K, Kouhpayezadeh J, Sobuti B. The Educational Environment of Main Clinical Wards in Educational Hospitals Affiliated to Iran University of Medical Sciences: Learners' Viewpoints Based on DREEM Model. *Iranian Journal of Medical Education*. 2008; 8(1):43-49.
- [22] Rothhoff T, Ostapczuk MS, De Bruin J DU, Schneider M. Assessing the learning environment of a faculty: psychometric validation of the German version of the Dundee Ready Education Environment Measure with students and teachers. *Med Teach*. 2011;33: 624-36.
- [23] Zawawii Alia H and Elzbeir M. Using DREEM to compare graduating students perceptions of learning environments at medical schools adopting contrasting educational strategies. *Medical Teacher*. 2012;34: S25-S31.
- [24] Anionwu E N, Mulholland J, Atkins R, Tappern M, Franks PJ. Diversity, Attrition and Transition in to Nursing: The DATING Project Final Report. Thames Valley University: London: 2005.
- [25] Pryjmachuk S, Easton K, and Littlewood A. Nurse education: factors associated with attrition. *Journal of Advanced Nursing*. 2009;65(1): 149-169.
- [26] Jiffry M T M Sean McAleer, Sirimali Fernando, Marasinghe R B. Using the questionnaire to gather baseline information on an evolving medical school in Sri Lanka. *Med Teach*. 2005; 27(4): 348- 352.
- [27] Bakhshi H, Abazari F, Bakhshialiabad M H. Nursing Students' Perceptions of their Educational Environment Based on DREEM Model in an Iranian University. *Malays Med Sci*. 2013; 20(4):58-63.
- [28] Karimi Moonaghi H, Ahanchian M R, Hassanian Z M. A Qualitative Content Analysis of Knowledge Storage in Nursing Education System. *Iran Red Crescent Med J*. 2014;16(10): e21835.
- [29] Flott E, ALinden L. The clinical learning environment in nursing education: a concept analysis. *Journal of Advanced N*. 2016;72(3):501-513.
- [30] Mohammadi S, Yazdan Nik A R, Yousefy A, Arazi T. Glimpse in the Challenges in Iranian Academic Nursing Education. *Iranian Journal of Medical Education*. 2014;14(4): 323-331.
- [31] Hassanian ZM, Ahanchian MR, Karimi Moonaghi H. Can Knowledge Management Be Implemented in the Teaching of Medical Sciences? *ACTA FACULTATIS Medicae naissensis*. 2015; 32(4): 231-242.
- [32] Muhamad S B, Yusoff Wan N. Arifin, Educational environment and psychological distress of medical students: The role of a deep learning approach. *Journal of Taibah University Medical Sciences*. 2015;10(4): 411e418.
- [33] Hassanian Z M, Ahanchian M R, Karimi Moonaghi H. Knowledge Creation in Nursing Education. *Global Journal of Health Science*. 2015; 7(2): 44-55.
- [34] Pimparyon P, Roff S, Mcaleer S, Poonchai B, Pemba S. Educational environment, student approaches to learning and academic achievement in a Thai nursing school. *Med Teach*. 2000;22(4): 359e364.