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RESEARCH ARTICLE

Educational Environment of Nursing Undergraduates in University of Ruhuna: Effect of Gender

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Abstract: A considerable increase in male admission into the nursing profession demands a better understanding of gender influences on nursing education and practice. This research explores how male and female nursing students perceive the new educational environment created by the curriculum introduced for B.Sc. Nursing Degree programme in the University of Ruhuna. Prospective study using the already validated Dundee Ready Education Environment (DREEM) questionnaire was administered to all B.Sc. Nursing undergraduates enrolled in academic years 2008/9 (first batch) and 2009/10 (second batch), respectively. The DREEM questionnaire, consists of 50 items each having a scoring range of 0-4 Likert type scale, was completed by 55 nursing students. Mean±SD DREEM scores were 112.0±15.6 and 106.90±1.54 for the male and female nursing undergraduates (p=0.22), respectively, indicating relative satisfaction with the perceived environment.The academic self-perceptions of male undergraduates fall more towards the positive side (mean score of 19.50±2.27) and that of females (mean score of 17.16±3.52; p=0.005) fall towards the negative side. The social self-perception of females of the first batch of nursing students was significantly low (mean score =13.65) when compared with that of females of the second batch of students (mean score =15.40; p=0.02). The male students of the second batch were having overall higher perception (mean score of 118.2) when compared with females of the same batch (mean score of 107.8; p=0.06). This study identifies the issues pertaining to the perception of learning and academic self-perception in the nursing programme. Further, use of DREEM as a monitoring tool would be useful to re-evaluate the environment for appropriate intervention.

Key words: Academic **p**erception, Educational environment, DREEM, Nursing undergraduates, Gender

Introduction

Historically, academic disciplines have been designed and continue to be androcentric from social and educational perspectives (Acker, 1994). Over the years, it has been reported that the influence of a male authored academic curriculum and its critical effect on the way male and female students and faculty behave and perform. Male and female students learn and process information differently and their educational needs can be met with gender sensitivity. The challenges faced by male students in a nursing curriculum and how they perceived the nursing profession was reported by Fooladi (2003). According to his report, male students perceive the profession as having two roles, ‘‘masculine’’ and ‘‘feminine’’. For instance, acute care, administration, and military health service are “masculine” roles whereas labor and delivery, pediatrics, and community health are feminine nursing roles. This view may enhance the faculty’s understanding of students’ perception of nursing education and practice.

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A considerable increase in admission of male students into the nursing profession demands a better understanding of gender influence on nursing education and practice. Gender significantly influences one's perspective on life. The concept of gender sensitivity is defined as an operational term to describe an acute awareness of gender in organizing, teaching, evaluating, and practicing nursing (Fooladi, 2003).

The medical profession, largely through the Dundee Ready Education Environment Measure (DREEM), has been able to apply a much greater degree of empirical introspection when it comes to learning environments of its students (Roff et al., 1997). The DREEM was originally used to evaluate learning environments of medical students, whose course curriculum had rapidly changed during a period of major reforms in traditional teaching methods up until and during the 1990s; particularly a trend towards a more student centred curriculum. A Delphi technique, involving a panel of 30 faculty members from around the world, was used to generate criteria indicative of desirable education climates for health professions in light of the new curriculum standards including allied health sciences (Brown et al., 2011). To the best of our knowledge, no previous research has used the DREEM to assess perceptions of Allied Health students regarding educational environment at medical schools in Sri Lanka other than evaluating medical students' perceptions on their degree programme (Jiffry et al., 2005). Previous studies (Al Rukbani et al., 2010; Al-Ayed & Sheik, 2008; Bassaw et al., 2003; Till, 2004) showed that there are no statistically significant differences between male and female medical students. In Nigeria, a statistically significance difference between the mean scores of male and female students is reported in only 5 of the 50 items of the inventory (Roff *et al*., 2001).

The educational environment makes an important contribution to student learning. Many academic aspects of current nurse education programmes appear to cause stress to nursing students. Those educators responsible for curriculum design need to take cognizance of the possible emotional consequence of a challenging curriculum. The aim of this research examines student perception of the educational environment created by a new nursing curriculum before any changes were made to remedy problems and explores how male and female nursing students perceive the new educational environment in B.Sc. Nursing Degree programme in the University of Ruhuna.

Methodology

The DREEM contains 50 statements relating to a range of topics directly relevant to the educational climate. Each item should be scored in the range 0 – 4 with Strongly agree = 4, Agree = 3, Unsure = 2, Disagree = 1 and Strongly disagree = 0. Nine of the 50 items are negative statements and they are scored in reverse order so that the higher the score, the more positive the perception for all items. The inventory encompasses items under five domains, namely, students' perception of learning (12 items/ maximum score of 48), students' perception of teachers (11 items/ maximum score of 44), students' academic self-perception (8 items/ maximum score 32), perception of atmosphere (12 items/ maximum score of 48) and the student's social self-perception (7 items/ maximum score of 28). Total of all 50 items has a maximum score of 200. The survey of the educational environment was conducted within the Allied Health Programme of the Faculty of Medicine, University of Ruhuna, during the month of March, 2011 after obtaining clearance from the Ethical Review Committee of the Faculty of Medicine. The DREEM was administered to all students who were studying in their third and second years (first and second batch of students, respectively) of the study programme. Students were given a 30 minute break during a lecture to respond to the questionnaire. All students present in the class on the day of the survey were asked to respond to the items on the 5 point Likert-type scale described above. Total of 62 students were following the B.Sc. Nursing Degree programme at the time of the survey and 55 of them participated. The study group included 29 students in the second year (second batch) and 26 students in the third year (first batch) and the total consisted of 34 females and 21 males.

SPSS version 14.0 was used to calculate the mean value for the total perception and sub areas of students' perception of learning, students' perception of teachers, students' academic self-perception, perception of atmosphere, and the students' social self-perception. Items and scale scores of the two batches were compared and gender was at 5% significance level when applying the student's t-test.

Results and Discussion

Initially, policy makers proposed a four year curriculum in the developmental phase of Allied Health Sciences degree courses in Sri Lanka. However, after two years they changed the decision and instructed universities to redesign a curriculum for a three year general degree with an additional one year for those students who wish to pursue a special degree. On both instances, almost half of the course comprised of basic sciences and pathophysiology course and the remainder were on clinical training. The interpretations were defined as if overall perception between 0-50 as very Poor; between 51-100 as plenty of problems; between 101-150 as more positive than negative; and if within 151-200 as excellent (Roff et al., 1997). Overall mean±SD DREEM score of nursing students was 108.71±15.54 and it could be interpreted as 'more positive environment than negative'. This may reflect that the present program is fairly innovative in terms of providing a student centered approach to education. Further, it can suggest that the environment is perceived positively by the students and that health science courses at Ruhuna are also student centered. These factors are likely to have positive impact on student achievement, satisfaction and success. The results generated by this analysis show that (Table 1) there were no significant differences in overall DREEM score between male (112.4±15.6) and female (106.90±1.54; p=0.22) students. Academic self-perception among male undergraduates was more towards the positive side (mean score of 19.50±2.27) whereas the females' (mean score of 17.16±3.52; p=0.005) felt towards the negative side (Table 1). There were no such significant differences in other domains of interest between male and female participants.

Female nursing undergraduates of the first batch of students could have felt their social self- perception as 'not a nice place to be' (with mean score less than 14.00), whereas males had mean score of 15.00 which could be defined as 'not too bad' (Table 2). The second batch of male students were having overall high perception (mean score of 118.2) when compared with female undergraduates of the same batch (mean score of 107.8; p=0.04) (Table 3). Further, male students had higher mean scores in all domains with statistically significant differences in perception of learning (p=0.01), perception of teachers (p=0.02) and academic self-perception (p=0.03) when compared with female counterparts of the same batch.

Table 1. Nursing students' perception to the learning environment – gender wise[1]

	Males (n=18)	Females (n=37)	p-value[2]
Perception of learning	28.56 ± 4.10	26.46± 4.43	0.09
Perception of Teachers	27.39 ± 4.16	26.05± 3.70	0.26
Academic self-perception	19.50 ± 2.26	17.16± 3.52	0.005
Perception of atmosphere	21.61 ± 6.07	22.62± 5.25	0.55
Social self-perception	15.39 ± 2.17	14.59± 2.33	0.22
Overall perception	112.4 ± 15.6	106.9± 1.54	0.22

[1]Results presented as mean±SD
[2]p-value is from the independent sample t-test.

Table 2. Perception of the academic environment among the first batch of nursing students[1]

	First batch of nursing students' perception		p-value[2]
	males	females	
Perception of learning	27.11± 4.94	25.76± 4.40	0.50
Perception of Teachers	26.00± 5.10	25.94± 2.80	0.98
Academic self-perception	18.78± 1.79	17.47 ± 2.70	0.15
Perception of atmosphere	20.22± 6.48	23.00 ± 4.90	0.28
Social self-perception	14.56 ± 2.30	13.65 ± 2.18	0.34
Overall perception	106.70 ± 17.62	105.80 ± 14.24	0.90

[1]There were 11 males and 15 females in the 3rd year; results presented as mean± SD
[2]p-value is from the independent sample t-test.

Table 3 Perception of the academic environment among the second batch of nursing students[1]

	Second batch nursing students' perception		p-value[2]
	males	females	
Perception of learning	30.00 ± 2.60	27.05 ± 4.61	0.01
Perception of Teachers	28.78 ± 2.54	26.15 ± 4.37	0.02
Academic self-perception	20.22 ± 2.54	16.90 ± 4.14	0.03
Perception of atmosphere	23.00 ± 5.06	22.30 ± 5.63	0.66
Social self-perception	16.22 ± 1.79	15.40 ± 2.19	0.17
Overall perception	118.20 ± 11.54	107.80 ± 16.63	0.04

[1]There were 10 males and 19 females in the 2nd year; results presented as mean ± SD
[2]p-value is from the independent sample t-test.

Table 4 Perception to the education environment among male nursing students[1]

	Male nursing students' perception		p-value[2]
	Second batch	First batch	
Perception of learning	30.00 ± 2.60	27.11 ± 4.94	0.05
Perception of Teachers	28.78 ± 2.54	26.0 ± 5.10	0.07
Academic self-perception	20.22 ± 2.54	18.78 ± 1.79	0.15
Perception of atmosphere	23.00± 5.06	20.22 ± 6.48	0.47
Social self-perception	16.22± 1.79	14.56 ± 2.30	0.05
Overall perception	118.2± 11.5	106.7 ± 17.6	0.10

[1]There were 10 males in the 2nd year and 11 males in the 3rd year; results presented as mean± SD
[2]p-value is from the independent sample t-test.

With regard to the individual subscales, perception of learning shows higher disparity between genders. Mean scores on this subscale are more than two points higher for males than females. This suggests that male students perceived factors such as curriculum, structure, focus and goals more positively than their female counterparts. This trend, that males perceive their course environments more favourably overall, may not be generalized to other nursing institutions. However, there is long-standing evidence that males and females typically exhibit different learning styles (Philbin et al., 1995), which could partly explain differences in the way learning, and the environments generally, are perceived in the present study.

The total DREEM domain score was higher for first year students than students receiving clinical teaching (Abraham et al., 2008) according to a study done in an Indian school. In some of the areas surveyed by the DREEM inventory, the first year students might not have been too sure how to respond to the survey, although that might have simply meant that the first year students were not yet too stressed from their studies. In the study, it became clear that the students lost some neutrality that they exhibited in the first year and became more critical of the educational environment as they progressed through the programme. It could also have been due to their enthusiasm and the illusion as first year students on successfully gaining entry into a new degree programme. However, a study of Nepalese students reported a trend towards improved perceptions in years 2 and 3 over year 1 as reflected in different DREEM totals from the 3 years (Roff et al., 2001). Male students of the second batch were having overall higher perception (mean score of 118.2) when compared with first batch of male students (mean score of 106.7; p=0.12) (Table 4). The mean scores of each sub domain were higher among second batch of male students when compared with the first batch of males, but none of these domains were shown a significant difference. Female nursing students of the second batch had overall high perception (mean score of 107.8) in areas of learning, teachers, and social self-perception when compared with that of the first batch of females (overall mean perception of 105.8; p=0.70) (Table 5).

Table 5 Perception to the education environment among female nursing students[1]

	Female nursing students' perception		p-value[2]
	Second batch	First batch	
Perception of learning	27.05± 4.61	25.76 ± 4.40	0.38
Perception of Teachers	26.15± 4.37	25.94 ± 2.80	0.81
Academic self-perception	16.90 ± 4.14	17.47 ± 2.70	0.42
Perception of atmosphere	22.30 ± 5.63	23.00 ± 4.90	0.71
Social self-perception	15.40 ± 2.19	13.65 ± 2.18	0.02
Overall perception	107.8 ± 16.6	105.8 ± 14.2	0.70

[1]There were 19 females in the 2nd year and 15 females in the 3rd year; results presented as mean ± SD
[2]p-value is from the independent sample t-test.

Perception of atmosphere of the nursing students was also in agreement with that in Bassaw et al., in 2005. For the subscale of students' social self-perceptions, a very low proportion agreed that there was a good support system for stressed students, which coincides with previous findings (Roff et al., 2001; Hazmi et al., 2004). Similar to previous studies (Fooladi, 2003; Roff et al., 1997; Till, 2004; Roff et al., 2001; Pimparyon et al., 2001), our results too indicated a need for the creation of a supportive environment as well as designing and implementing interventions to remedy unsatisfactory elements of the environment if effective and successful learning to be realized. The nature of self-reporting of questionnaires imposed some limitations to the conclusions of this study. The validity and accuracy of students' perceptions of their learning and the learning environment has been questioned (Guest, 1999).

Al-Sketty (2003) compared students' perceptions of the educational environment at three institutes of nursing in the Sultanate of Oman using the Arabic version of DREEM. He was able to make recommendations for enhancement of the learning environment for each institution and for sub-groups of his cohorts according to year, gender and institutional variables. This 'local' comparison between three nursing schools could form the basis for standard setting for nurse education in Oman and as a baseline for longitudinal studies. They were also able to show statistically significant gender differences for a system where female students are segregated from male students and often receive instruction by audio-visual links from male faculty members when males having direct contact with their teachers. Teacher student relationships are another source of stress to many students and having adequate support structures for students while on clinical placements are essential. Furthermore, all personnel involved with teaching nursing students need to be adequately prepared for dealing with students and become aware of their own impact on students.

Conclusion

This study attempted to highlight some issues related to the educational environment. It was not free from limitations. One of which was the sample size. Item scores indicate that some of the aspects, such as lack of confidence in passing the exam and quality of social life, could be treated separately for female students. Also, the number of participants varied considerably between year levels. Individual items were not analyzed and qualitative data were not collected in order to address specific problems or highlight strengths more deeply within the course. However, there was nothing to suggest that it cannot be carried out in the near future. Finally, for ethical reasons, convenience sampling was used to recruit participants. This may have inflated scores, as those who were present at the time of administration of survey may have felt more positively towards their course than those who were absent (evidenced by the fact they were in the class), or alternatively may have deflated the scores, as those with less satisfaction may have been keener to take part in order to voice their grievances.

The implications of this study include the need for establishing a supportive, creative and conducive environment, focusing on unsatisfactory elements to bring desirable changes in the educational environment to meet the challenges of health care profession. Further, comparative studies within the system are a necessity to improve the nursing curriculum as well as educational environment. Nursing profession should be provided with best

candidates without any gender segregation for better nursing care.While this study provides a valuable insight into the course environment as perceived by nursing students in a contemporary curriculum setting, it would be valuable to conduct a similar study at other universities as well as on other degree programmes. This would help to establish generalization of current findings to institutions with similar curriculums.

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