Assessment of educational environment among undergraduate nursing students’, A Moroccan multicentre study

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**Keywords**: Educational environment, DREEM scores, students, perception.

**Abstract:** This study aimed to assess nursing students’ perceptions of their educational environment in Morocco. This multicentre cross-sectional study was conducted during the academic year 2018/2019. At the public nurse education institutes in Morocco. The sample included 1460 nursing undergraduate students. A set of socio-demographic criteria were collected, and the version of Dundee Ready Educational Environment Measure (DREEM) questionnaire was used to assess the educational environment in the institutes. The overall mean DREEM score was

108.1 (21,2). The DREEM scores for the five subscales: The score for students’

perceptions of learning 26,16 (6,3); students’ perceptions of teachers 23,5 (6,0); students ‘academic self-perceptions 20,3(5.0); students’ perceptions of atmosphere 23,9 (6,2); students’ social self-perceptions 14,2(3,8). The associate factors with significant higher DREEM scores were the international students, the students of the first- year level.

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# Introduction

The main objective, in nursing education, is to produce nursing graduates with competence who can provide quality care to the population. An educational environment with a favorable design can contribute to a positive result for students; and affected positively student motivation, achievement, success and satisfaction (Chan et al., 2018). The Dundee Ready Educational Environment Measure (DREEM) questionnaire is designed to evaluate perceptions by undergraduate professional health students of the educational environment. This includes all aspects involving teaching and learning in the health profession schools and both academic and clinical practice aspects.

An abundance of studies concerning the assessment of educational environment have been conducted in different faculty through the world (Al-Hazimi et al., 2004; Chan et al., 2018). In Morocco, the only published study concerning the perception of the educational environment by medical student realized by Belayachi et al. in 2015. However, no data regarding nursing profession student perceptions in Morocco has been published.

This study aimed to assess nursing, student’s perceptions of the education environment in Morocco using the DREEM questionnaire, and to compare self-perception scores according to student’s characteristics. This assessment of educational environment was used to identify problem areas to be considered and in the future for improvement and to apply a plan to improve educational environment.

# Methods

*Study design, settings and sample*

This was a multicentre, cross-sectional study conducted in 2018/2019. The study setting was in the 22 higher institutes of nursing professions and health technique in Morocco, with the aim of assessing of the educational environment. Presently, nursing students are admitted to these institutes with the license, master’s and, PhD degrees.A total of 1,460 participants were enrolled, comprised of undergraduate Nursing students. Convenience sampling was used to choose participants from each site.

*Instrument*

The demographic questionnaire (age, student’ residence of, nationality, and level of study) and the DREEM (McAleer & Roff, 2002) were used to collect the study data. DREEM assesses the educational environment in educational institutions and consists of 50 items. Each item scored on five-point Likert scale from 0 to 4 with scores of 0 = strongly disagree, 1 = disagree, 2 = unsure, 3 = agree, and 4 = strongly agree. Nine items were scored in reverse. McAleer & Roff. (2002) have also proposed a guide to interpreting the five subscales

*Data collection*

This research was conducted between September 2018 and July 2019. The researcher provides participants with an explanatory statement outlining the study and explaining that all data collected is anonymous. The DREEM questionnaire and socio-demographic criteria were also collected: age, the field of study, level of study.

The current study was carried out in compliance with the provisions relating to ethical requirements. Notably, favourable permission was obtained to conduct this study from the Rabat Ethics Committee for Biomedical Research. Informed free consent was obtained from every student who took part in this study. Voluntariness, confidentiality and anonymity were guaranteed to all participants.

*Data analysis*

The data were analyzed using descriptive statistics (mean, frequency). Frequency and percentage was used for describing categorical variables. The comparison was carried by the Student’s t-test and one-way analysis of variance (ANOVA) tests to determine significant variations in their scores among student characteristics. The Statistical Package for Social Sciences (SPSS) version 23 (IBM CORP, Armork, USA) was used to analyze the data with a 95% confidence and the significance threshold is set at 0.05.

# Results

A total of 1516 students were invited to participate. Among 1460 students completing the

questionnaire, 392 (26.85%) were male and 1068 (73.15%) were female. Students’ mean age was

19.8 ± 1.4 years, ranging from 17 to 40 years and median 20 years.

Descriptive characteristics of undergraduate nursing students are reported in table 1. The overall mean (± SD) DREEM score for the participants was 108.1±21.1.

The mean score (± SD) of the dimension “Students’ perception of learning” was 26.1 ± 6.3. indicating a more positive perception. For the dimension « Students’ perceptions of teachers”, the mean score (± SD) was 23.5 ± 6.0, suggest that teachers are taking steps to the right direction. Regarding to the dimension "Students' academic self- perceptions, the mean score (± SD) was 20.3 ± 5.0, showing a feeling more on the positive side among students. Concerning the Student’s perception of atmosphere dimension, the mean score (± SD) of 23.9 ± 6.2 indicated that there are many issues that need changing according to the participants. The last dimension Students’ social self-perceptions had a mean score (± SD) of 14.2 ± 3.8, denoting that institute wasn’t too lousy a place as reported by students.

Table 2 presented the percentages of categories of DREEM subscales and total score

The findings as presented indicated that nursing male students had better perception than female nursing students. While the first year students and third-year students were the most satisfied with their educational environment, followed by second-year.

Both international students compared to the national students had better perception and was statistically significant. Students who live away from their parents perceive their educational environment as better than those residing with their families but not significantly different.

# Discussion

Our survey covered the largest higher institutes of nursing professions and health techniques. Therefore, this work would provide a realistic view of how Moroccan nursing students evaluate their educational environment using DREEM.

As stated in the practical guide by McAleer & Roff, (2002), our findings reveal that students' perceptions of their educational environment were more positive rather than negative. The overall mean DREEM score was found to be 108.1±21.1. This result corroborates with a systemic review

(Chan et al., 2018) where 80.6% of studies observed a mean total DREEM score of more positive than negative. Our results were higher compared to a study at Nursing and Midwifery School of Tehran University of Medical Sciences (Imanipour et al., 2015); and lower compared to other studies, notably, At an Iran undergraduate medical sciences students (Bakhshialiabad et al., 2015), at the Aga Khan University Schools of Medicine and Nursing (Farooq et al., 2018), and at United Kingdom in one Higher Education Institution (Ousey et al., 2014).

Regarding to gender, our findings consists with Abraham et al. (2008) who find that no significant difference in students’ perceptions between genders.

The total scores of first year students were significantly higher perception of educational environment than students of the other years. This result consisted of studies that reported a trend for reduced scores in seniors in a systematic review (Chan et al., 2018). There was a decline in the students’ perception of all domains from the first to second study years. This finding was consist with another study conducted of nursing faculty (Irfan et al., 2019).

The strengths of this survey were mainly that it was conducted in all public higher institutes. This is the first study assessing the educational environment of Nursing students in Morocco using the DREEM inventory. The generalization of results could be made after recruiting in all fields at the Moroccan higher institutes and also the convenience sampling was a limit to this generalization.

# Conclusion

These results showed and identified areas requiring improvement and revision. The students assessed the educational environment at higher institutes as more positive than negative. Considering what students need from their educational environment and decreasing the gap between the actual and expected environments is necessary. Thus, continued studies are required to verify the results of this study, and to broaden the area of investigation to the nursing professions and technique health.

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# Conflict of interest

The authors declared that there are no conflicts of interest.

# References

Abraham, R., Ramnarayan, K., Vinod, P., & Torke, S. (2008). Students’ perceptions of learning environment in an Indian medical school. *BMC Medical Education*. https://doi.org/10.1186/1472- 6920-8-20

Al-Hazimi, A., Al-Hyiani, A., & Roff, S. (2004).

Perceptions of the educational environment of the medical school in King Abdul Aziz University, Saudi Arabia. *Medical Teacher*. https://doi.org/10.1080/01421590410001711625

Bakhshialiabad, H., Bakhshi, M., & Hassanshahi, G. (2015). Students&rsquo; perceptions of the academic learning environment in seven medical sciences courses based on DREEM. *Advances in Medical Education and Practice*. https://doi.org/10.2147/amep.s60570

Belayachi, J., Razine, R., Boufars, A., Saadi, A., Madani, N., Chaouir, S., & Abouqal, R. (2015). Moroccan medical students’ perceptions of their educational environment. *Journal of Educational Evaluation for Health Professions*. https://doi.org/10.3352/jeehp.2015.12.47

Chan, C. Y. W., Sum, M. Y., Tan, G. M. Y., Tor, P. C.,

& Sim, K. (2018). Adoption and correlates of the

Dundee Ready Educational Environment Measure (DREEM) in the evaluation of undergraduate learning environments–a systematic review.

*Medical Teacher*, *40*(12), 1240–1247. https://doi.org/10.1080/0142159X.2018.1426842

Farooq, S., Rehman, R., Hussain, M., & Dias, J. M. (2018). Comparison of undergraduate educational environment in medical and nursing program using the DREEM tool. *Nurse Education Today*. https://doi.org/10.1016/j.nedt.2018.06.031

Imanipour, M., Sadooghiasl, A., Ghiyasvandian, S., & Haghani, H. (2015). Evaluating the Educational Environment of a Nursing School by Using the DREEM Inventory. *Global Journal of Health Science*. https://doi.org/10.5539/gjhs.v7n4p211

Irfan, F., Al Faris, E., Al Maflehi, N., Karim, S. I., Ponnamperuma, G., Saad, H., & Ahmed, A. M. (2019). The learning environment of four undergraduate health professional schools: Lessons learned. *Pakistan Journal of Medical Sciences*. https://doi.org/10.12669/pjms.35.3.712

McAleer, S., & Roff, S. (2002). A practical guide to using the Dundee Ready Education Environment Measure (DREEM). In *AMEE Medical Education Guide* (Vol. 23, p. 5). [www.gppro.co.uk/swacpo/document/dreems2.doc](http://www.gppro.co.uk/swacpo/document/dreems2.doc)

Ousey, K., Stephenson, J., Brown, T., & Garside, J. (2014). Investigating perceptions of the academic educational environment across six undergraduate health care courses in the United Kingdom. *Nurse Education in Practice*, *14*(1). https://doi.org/10.1016/j.nepr.2013.06.012

Table 1: Descriptive statistics on the students' characteristics and their association with DREEM scale and sub- scales scores

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | n (%) | SPoL | SPoT | SASP | SPoA | SSSP | Total score |
| DREEM score | 1460 | 26.1±6.3 | 23.5±6.0 | 20.3±5.0 | 23.9±6.2 | 14.2±3.8 | 108.1±21.1 |
| Interpretation |  | A more positive perception | Moving in the right direction | Feeling more on the positive side | many issues that need changing | Not anice place | More Positive than Negative |
| Gender |  |  |  |  |  |  |  |
| Male | 392 (26.85) | 26,2 (6,4) | 23,6 (6,2) | 20,1 (4,7) | 24,5  (6,4) | 14,2  (3,9) | 108,7(21,4) |
| Female | 1068(73.15) | 26,1 (6,3) | 23,5 (6,0) | 20,3 (5,1) | 23,7  (6,2) | 14,2  (3,8) | 107,9(21,1) |
| P value |  | 0.16 | **0.04** | 0.15 | 0.58 | 0.39 | 0.19 |
| Nationality |  |  |  |  |  |  |  |
| international | 22 (1.5) | 30,8(6,3) | 27,7(5,3) | 24,7(3,9) | 29,6(6,1) | 14,7(3,2) | 127,5(16,8) |
| Moroccan | 1438 (98.5) | 26,1(6,3) | 23,5(6,0) | 20,2(5.0) | 23,8(6,2) | 14,2(3,9) | 107,8(21,1) |
| P value |  | **< 0 .001** | **< 0 .001** | **< 0 .001** | **< 0 .001** | **0.048** | **< 0 .001** |
| Student’s residence |  |  |  |  |  |  |  |
| Away from parents | 567 (38.8) | 26,9(6,0) | 24,5(5,8) | 20,8(4,8) | 24,8(6,1) | 14,3(3,8) | 111,4(20,3) |
| With parent | 893 (61.2) | 25,7(6,4) | 22,9(6,1) | 19,9(5,0) | 23,3(6,3) | 14,1(3,8) | 106,0(21,5) |
| P value |  | < 0 .001 | < 0 .001 | < 0 .001 | < 0 .001 | 0.24 | < 0 .001 |
| Study level |  |  |  |  |  |  |  |
| 1st year | 717 (49.1) | 27,2(6,2) | 24,8(5,9) | 20,54(4,9) | 24,5(6,2) | 14,5(3,7) | 111,5(21,2) |
| 2 nd year | 448 (30.7) | 25,3(6,1) | 22,5(6,0) | 19,82(4,9) | 22,8(6,1) | 13,8(4,1) | 104,2(20,8) |
| 3rd year | 295 (20.2) | 24,9(6,2) | 21,9(5,7) | 20,4(5,1) | 24,2(6,3) | 14,2(3,6) | 105,7(20,4) |
| P value |  | < 0 .001 | < 0 .001 | 0.100 | 0.001 | 0.009 | < 0 .001 |
| Students’ perceptions of learning (SPoL) ; Students’ perceptions of teachers (SPoT); Students’ academic self-perceptions (SASP); Students’ perceptions of atmosphere (SPoA) ; ;Students’ social self-perceptions (SSSP). | | | | | | | |

Table 2: Percentages of categories of DREEM subscales and total score

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Interpretation | | | | |
|  | **1** | **2** | **3** | **4** |
| **Dreem total score** | Very Poor; **0.55%** | Plenty of Problems **30.6%** | More Positive than Negative **66.5%** | Excellent  **2.5%** |
| **SPoL : Self**  **Perceptions of learning;** | Very Poor 1**.6%** | Teaching is viewed negatively  **34.52%** | A more positive perception **63.29%** | indicated:  Teaching highly thought of.**1.64%** |
| **SPoT : Self Perceptions of teaching;** | Abysmal **3.42%** | In need of some retraining; **37.05%** | Moving in the right direction **55.28%** | Model teacher  **4.25%** |
| **SASP: Self Academic self-**  **perceptions;** | Feelings of total failure; **1.65%** | Many negative aspects  **20.07%** | Feeling more on the positive side  **58.01%** | Confident **20.27%** |
| **SPoA : Self Perceptions of atmosphere;** | A terrible environment **4.18%** | There are many  issues which need changing **47.53%** | A more positive attitude **46.71%** | A good feeling overall **1.58%** |
| **SSSP : Self Social**  **self-perception** | Miserable; **4.4%** | Not a nice **47.5%** | Not too bad; **45.9%** | Very good socially  **2.2%** |