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Gender differences in acute and perceived stress, bullying, and academic motivation among nursing and midwifery students

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Abstract

Background College-aged students are at risk for experiencing negative events that may influence their future health and life. Those negative events or stressors may vary in type and severity. Stress and bullying are prevalent among nursing students that may affect their academic motivation. Our aim was to examine the gender differences in acute and perceived stress, bullying, and academic, motivation among nursing and midwifery students in Saudi Arabia.

Methods A cross-sectional design was utilized in this study to examine 391 nursing and midwifery students in four different universities in Saudi Arabia. The following scales were used to collect data: the college students acute stress scale, perceived stress scale, bullying behaviors in nursing education, and short version of academic motivation scale.

Results Students reported relatively low acute stress and moderate perceived stress. Students did not generally experience considerable bullying. Only female students reported that they experience significant bullying in form of attacking academic motivation. Academic motivation among participating students were relatively high. Female students reported higher scores than male students on all variables; all differences are statistically significant except for bullying.

Conclusion The findings of this study contribute to the literature on the prevalence of stress and bullying among nursing and midwifery students and their influence on academic motivation. Also, the results provide further evidence to the gender differences in stress, bullying, and academic motivation among them. The study highlights the importance of supporting nursing and midwifery students, specifically female student, by providing supportive and encouraging environment to help them succeed in their study and love their future career.

Keywords Acute stress, Perceived stress, Bullying, Academic motivation, Nursing, Midwifery, Students, Gender

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Background

College-aged students face a range of negative events and stressors that can impact their health, well-being, and future life outcomes [1]. These stressors, which vary in type and severity, include acute stress, perceived stress, and bullying. Such challenges can adversely affect students' academic performance, personal growth, and overall achievements [2, 3]. Furthermore, gender differences may influence how students perceive and respond to these stressors, shaping their coping mechanisms and academic motivation. Recognizing and addressing these disparities is critical for designing effective, targeted interventions to support the educational success and mental well-being of nursing and midwifery students.

Bullying

Bullying is a major public health issue among college students [4]. Bullying has been described as an ongoing pattern of behavior aimed at another individual, which involves degradation, intimidation, maliciousness, or offensiveness. This behavior undermines the recipient's confidence and self-esteem [5]. It also may refer to a repeated aggressive behavior carried out by an individual or a group of individuals over a prolonged period of time. The victims of bullying often lack the means to protect themselves or fight back against their aggressors [6]. Bullying has long-term influence on the psychosocial functioning, study ability, and academic motivation of students from school to higher education [7–10]. Several studies have shown that bullying exists among higher education students, and the rate of bullying varies significantly among studies [11, 12]. An example of a bullying is verbal bullying (e.g., inappropriate, ugly, impolite, or hostile statements; name-calling; mocking or criticism relating to personal attributes), which has been reported the most in many studies [11, 13, 14]. Bullying experiences at universities may vary based on gender and cultural background. Studies show that males and females in the USA report bullying victimization at similar rates, but males claim a greater rate of bullying perpetration among university students [11]. In a study conducted in Greece with 464 university students, male students were more likely than female students to engage in bullying and cyberbullying, both as offenders and victims [13]. Additionally, a study conducted in Saudi Arabia [5] reported that female students experienced more bullying than male students.

Stress

Stress can be defined as the presence of mental or physical tension or strain [15]. High levels of stress can lead to various health problems, both physical and mental [16]. It also can have a negative impact on students' behaviors, affecting their nutritional intake, productivity at work, and social interactions [17, 18]. Studies have shown that

nursing students frequently encounter stress in three domains: academic concerns, clinical practice, and social factors [18–20]. In addition, stress can cause a range of negative side effects among nursing students, including anger, anxiety, sadness, lack of sleep, poor attention, memory loss, and learning difficulties [16, 21].

Academic motivation

Academic motivation or achievement is the result that reflects a person's level of proficiency in the learning process according to objectives established for the teaching environment in schools, colleges, and universities [22]. Academic success is greatly influenced by motivation in any form [23]. For instance, when students lack motivation and are placed in circumstances that make them reluctant to study, their academic performance suffers. Being exposed to stressors such as being bullied can also affect students' motivation resulting in less academic achievement [4].

Current study

Several gender differences in academic, clinical, psychological, nursing profession identity, and health concept elements have been found according to the reviewed international literature. Some of these variances may be influenced by other variables, such as culture and family background. For example, a literature review study found that male students tend to more frequently be victims of bullying than their female counterparts, but no considerable difference was found [11]. Furthermore, a recent study conducted in China found that male students are at higher risk for being bullied on social media [3]. Regarding stress, a study conducted in China found no differences between male and female students on stress [2]. Another study conducted in the USA reported that female students had higher levels of stress than males [24].

While there are several studies on gender differences in bullying behavior, stress, and academic motivation among college students, little is known about these factors in Saudi Arabia, specifically among nursing and midwifery students. Therefore, this study aims to examine the gender differences in bullying, stress (acute and perceived), and academic motivation among nursing and midwifery students in Saudi Arabia.

Methods

Study design

We utilized a cross-sectional study design, which involves collecting data at a single point in time to capture a snapshot of variables within a population. This approach is particularly useful for identifying patterns, relationships, and differences among groups [25]. In this study, we gathered information from female and male nursing

and midwifery students to examine gender differences in acute and perceived stress, bullying, and academic motivation. The cross-sectional design allowed us to efficiently compare these variables across genders within the study population.

Participants and setting

Participants were undergraduate nursing and midwifery students from four universities in Saudi Arabia. The four universities located in different geographical areas and have different characteristics. Two universities are in a large city in Saudi Arabia with high population density. These two universities are considered large universities in terms of their colleges, programs, and campus size. One university is in a relatively large city but with lower density than the other city. This university is also considered a large university. The last university is in a suburban small area, and it is considered relatively a new university. All universities offer undergraduate nursing programs, and two of them offer an undergraduate midwifery program. Students who were not enrolled into a nursing or a midwifery program, and/or did not wish to participate were excluded from the study.

Measures

College Students Acute stress scale (CSASS)

The CSASS is 13-item self-report scale designed to measure students' life stressors over the past week [26]. The scale utilizes a 5-point Likert scale (0=no stress to 4=constant stress) and results in a total score range of 0–52, which higher score indicates greater amount of stress. The scale has two subscales, namely: social stressors and nonsocial stressors. The CSASS was valid to use among college students in the United States and demonstrated an adequate internal consistency reliability among three samples (α ranged from 0.68 to 0.88) for the total scale and subscales for all samples [26]. The current study also showed an adequate internal consistency reliability for the CSASS ($\alpha = 0.82$).

Perceived stress scale (PSS)

The PSS is a 10-item self-report scale designed to measure a person's perception of stress over the past month [27]. The scale uses a 5-point Likert scale (0=never to 4=very often) and results in a total score range of 0–40. Scores ranging from 0 to 13 indicate low stress, 14–26 indicate moderate stress, and 27–40 indicate high perceived stress. The PSS is a widely used scale and had adequate reliability and validity across many study, of which 12 studies had adequate reliability ($\alpha > 0.70$) [28]. The current study also showed an adequate internal consistency reliability for the PSS-Arabic version ($\alpha = 0.72$).

Bullying behaviors in nursing education (BBNE)

The BBNE is an 18-item self-reported scale designed to identify bullying behaviors experienced by nursing students in the education environment [29]. The scale utilizes a 6-point Likert scale (0=never experienced to 5=experience a few times a day) and results are summed and divided by the number of items yielding a mean score. A mean score of one or more indicates experiencing bullying behaviors in education environments. The scale has four subscales, namely: isolation of students from the education environment (4 items), attack on academic achievement (4 items), attack on personality (6 items), and direct negative behaviors (4 items). BBNE scale had an adequate internal consistency reliability for the total scale ($\alpha = 0.88$), and for the four subscales (α ranged from 0.73 to 0.77) [29]. The current study also showed an adequate internal consistency reliability for the BBNE total scale ($\alpha = 0.88$).

Short version of academic motivation scale (SAMS)

The SAMS is a 14-item self-reported scale designed to measure students' academic motivation [30]. This scale is a shorter version of the original AMS 28-item scale developed by [31]. SAMS uses a seven-point Likert scale (1=does not correspond at all to 7=corresponds exactly), and results in a total score ranges between 14 and 98, with higher scores indicating greater levels of academic motivation. The scale has seven subscales, namely: intrinsic motivation to know (IMK), intrinsic motivation toward accomplishment (IMA), intrinsic motivation to experience stimulation (IMS), identified regulation (IDR), introjected regulation (IJR), external regulation (ER), and amotivation (AM), with two items for each subscale. The SAMS had an adequate internal consistency reliability of ($\alpha = 0.85$) [30]. The current study also showed an adequate internal consistency reliability for the SAMS ($\alpha = 0.88$).

For the current study, we have translated the following scales: CSASS, BBNE, and SAMS into the Arabic language. The translated versions of the above-mentioned scales has been reviewed by experts in the field. Regarding PSS, we used the Arabic version that were translated into the Arabic language by [32].

Data collection

We used a non-probability convenience sampling method to recruit students for this study at the four universities mentioned above. All authors participated in the data collection processes. Authors invited students, briefly explained the study aims to them, then granted eligible students to access the survey by scanning a quick response (QR) code using their cellphones. Prior to completing the survey, students were required to electronically consent to voluntary participation. Anonymity and

confidentiality were strictly maintained throughout the data collection process. No personal identifying information was collected, and all responses were stored securely. The survey was designed to ensure that participants' answers were anonymous, with no traceable links to their identity. The students began answering the survey online, starting with the demographic information and proceeding to the main questions. The data were collected between January and March of 2023.

Data analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 28. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were calculated for demographic information and study variables to provide an overview of the sample characteristics. To examine the study's

Table 1 Students' demographic characteristics (N=391)

Variables	Female (n=275) N (%)	Male (n=116) N (%)	Total
Age (Range = 18–26)	248; M=20.25	110; M=20.62	358; M=20.36
Marriage	275	116	391
Single	266 (96.7)	114 (98.3)	380 (97.2)
Married	8 (2.9)	2 (1.7)	10 (2.6)
Divorced	1 (0.4)	0	1 (0.3)
Working beside school	275	116	391
No	260 (94.5)	96 (82.8)	356 (91)
Yes	15 (5.5)	20 (17.2)	35 (9)
University	264	111	375
University 1	1 (0.4)	56 (50.5)	57 (15.2)
University 2	163 (61.7)	0	163 (43.5)
University 3	24 (9.1)	21 (18.9)	45 (12)
University 4	69 (26.1)	31 (27.9)	100 (26.7)
Others	7 (2.7)	3 (2.7)	10 (2.7)
Study year	275	116	391
Year 1	5 (1.8)	19 (16.4)	24 (6.1)
Year 2	107 (38.9)	43 (37.1)	150 (38.4)
Year 3	128 (46.5)	12 (10.3)	140 (35.8)
Year 4	23 (8.4)	40 (34.5)	63 (16.1)
Internship year	12 (4.4)	2 (1.7)	14 (3.6)
Time spent studying per week	274	116	390
Less than 1 h	9 (3.3)	5 (4.3)	14 (3.6)
1–3 h	52 (19)	35 (30.2)	87 (22.3)
4–6 h	80 (29.2)	37 (31.9)	117 (30)
7–9 h	57 (20.8)	17 (14.7)	74 (19)
More than 10 h	76 (27.7)	22 (19)	98 (25.1)
Major	275	116	391
Nursing	197 (71.6)	116 (100)	313 (80.1)
Midwifery	78 (28.4)	0	78 (19.9)
GPA (Range = 2.25–4.9)	266; Mean = 3.83	111; Mean = 3.88	377; M = 3.85

main objectives, an independent sample t-test was conducted to compare differences between female and male students on bullying, perceived stress, acute stress, and academic motivation. The alpha level was set at ≤ 0.05 to determine statistical significance. Additionally, data were presented alongside confidence intervals where appropriate to provide a more comprehensive understanding of the results. All analyses were performed with a significance level of 0.05 unless otherwise specified.

Ethical consideration

The design and data collection for this study were approved by the Shaqra University Standing Committee on the Ethics of Scientific Research (ERC#: ERC_SU_20220097). A written informed consent was obtained from the participants. In addition, this study was conducted in accordance with the guidelines of the Declaration of Helsinki. Participating students were made aware of the aims of the study, that their participation is voluntary, and they have the right to withdraw from the study at any time without consequences. Authors did not obtain identifiers or personal information to maintain full privacy and confidentiality of participants.

Results

Demographic characteristics of participants

The total participating students were 391. The students' age ranged from 18 to 26 with an average of 20.36 years old. Most of the students were female (70.3%), single 97.2%, had no work beside school (91%), and enrolled into a nursing program (80.1%). The participating students were mainly in the second and third year of their programs (38.4%, 35.8%, respectively), and they are varied in terms of spending time in studying per week (Table 1).

Acute and perceived stress, bullying, and academic motivation among participants

Table 2 displays the scores of acute and perceived stress, bullying, academic motivation among participating students, and their subscales. Acute stress was relatively low among participating students ($M = 8.49$); nonsocial stressors contributed more than social stressors to students' stress. However, the results of perceived stress indicated moderate stress among participating students ($M = 20.40$). In terms of bullying, students' total mean score was below one ($M = 0.68$) which implied that they did not generally experience considerable bullying. Only female students reported that they experienced significant bullying in the form of attack on academic achievement ($M = 1.07$). On the hand, academic motivation scores among participating students were moderate ($M = 62.95$); external regulation guided students' academic motivation the most ($M = 11.21$). Female students

Table 2 Mean scores of CSASS, PSS, BBNE, and AMS by gender

Variables	Female (n=275) M	Male (n=116) M	Total (n=391) M
CSASS	(N=266) 9.03	(N=111) 7.20	(N=377) 8.49
Social stress	3.82	3.40	3.69
Nonsocial stress	6.96	5.20	6.44
PSS	(N=258) 21.21	(N=108) 18.47	(N=366) 20.40
BBNE	(N=246) 0.72	(N=102) 0.60	(N=348) 0.68
Isolation of Students from the Education Environment	0.80	0.66	0.76
Attack on Academic Achievement	1.07	0.80	0.99
Attack on Personality	0.51	0.46	0.49
Direct Negative Behaviors	0.32	0.36	0.33
AMS	(N=240) 65.27	(N=97) 57.19	(N=337) 62.95
Intrinsic Motivation to Know (IMK)	9.90	8.93	9.62
Intrinsic Motivation toward Accomplishment (IMA)	9.62	8.50	9.30
Intrinsic Motivation to Experience Stimulation (IMS)	7.99	6.62	7.60
Identified Regulation (IDR)	10.89	9.34	10.44
Introjected Regulation (IJR)	11	9	10.42
External Regulation (ER)	11.84	9.64	11.21
Amotivation (AM)	4.02	5.16	4.35

Table 3 Gender differences of mean scores of CSASS, PSS, BBNE, and AMS

Variables	Female (n=275) M	Male (n=116) M	t	p	95% CI
CSASS	9.03	7.20	2.29	0.023*	0.26–3.40
PSS	21.21	18.47	3.76	<0.001**	1.30–4.17
BBNE	0.72	0.60	1.53	0.127	–0.04 –0.28
AMS	65.27	57.19	3.62	<0.001**	3.67– 12.48

* $p < .05$; ** $p < .001$

reported higher scores than male students on almost all variables including subscales scores (Table 2). Further details about gender differences are provided in following results.

Gender differences in CSASS, PSS, BBNE, and AMS

T-tests were performed to examine if there were statistically significant gender differences in students' acute and perceived stress, bullying, and academic motivation scores. The results revealed statistically significant differences between female and male students on all variables except bullying, and female students had higher scores on all variables. Regarding acute stress, female students reported higher mean scores compared to male students ($M=9.03$, $M=7.20$, respectively; $p < .05$). Similar

with perceived stress, female students reported higher scores compared to male students ($M=21.21$, $M=18.47$, respectively; $p < .001$). Finally, academic motivation was reported higher among female students than to male students ($M=65.27$, $M=57.19$, respectively; $p < .001$; Table 3).

Discussion

The study aimed to examine gender differences in acute and perceived stress, bullying, and academic motivation among nursing and midwifery students. The study revealed that female students had higher scores on all variables, and the differences were all statistically significant except for bullying. Additionally, the study showed that acute stress was relatively low among participating students. Nonsocial stressors contributed more to students' stress than social stressors. Nevertheless, participating students reported moderate perceived stress, and they did not generally experience considerable bullying.

The results of our study showed that female students reported statistically significant higher scores of acute and perceived stress than their male counterparts. Other studies reported that approximately half of nursing students reported moderate levels of stress, and a quarter of them had high levels of stress [33]. Our results were consistent with a study conducted among over 800 nursing students that found female students reported higher stress scores than males [34]. It is also similar to a study conducted among over 300 students from different majors [35]. However, our results were inconsistent with a study conducted in China [2], where they found no differences between female and male college students regarding stress. The literature reveals a range in the incidence of stress among nursing students, which may be a result of the various academic programs offered around the world and the various scales used to assess it [36, 37]. Additionally, the various ways that stress is viewed across cultures and by different people can also have an impact on stress levels [33]. Higher education requires greater psychosocial demands on students, and this particular college-aged group is at risk for experiencing other stressors that may include social and nonsocial stressors [1].

Our study revealed that bullying was not considerably experienced by students, with no notable differences between female and male students. Furthermore, our results were consistent with a study conducted among university students in the United Arab Emirates where the researchers found limited experiences of bullying with approximately 26% reported being exposed to or engaged in bullying [38]. Slightly higher rates were observed among Bhutanese college students, with up to 36% experiencing at least one form of bullying [39]. In contrast, another study conducted in Saudi Arabia

found that approximately 50% of medical and nonmedical students have experienced bullying [5]. Similar rates have been reported among nursing students in Australia [40], and slightly higher rates in Turkey [41]. In Canada, almost 88% of nursing students experienced at least one act of bullying [42]. Although the difference between female and male students was not noticeable in our study, female students reported higher rates of bullying, and only “attack on academic achievement” was statistically significant reported by female students. Generally, female students experience more bullying than their male counterparts [5]. Additionally, a study conducted in the USA found that female nursing students experienced higher rates of bullying than male students, and they were bullied by patients, nurses, and other hospital staff [43]. Bullying can occur for a variety of reasons, potentially creating an unwelcoming educational setting or clinical practice for nursing students [44]. In addition to addressing bullying directly, factors such as strong educational support systems, mentorship programs, and access to mental health resources can influence students’ experiences and outcomes [45]. Therefore, nurse educators and others in charge of education should focus on fostering a supportive and enriching environment that not only mitigates bullying but also promotes positive learning experiences and enhances the quality of graduates. It is important to note that the variation in bullying rates reported in the literature could be attributed to differences in the measurement tools used, variations in how bullying is defined, students’ perceptions of bullying behaviors, cultural norms, and individual student characteristics.

Regarding academic motivation, the results of our study showed that students had moderate levels of academic motivation, and female students reported statistically significantly higher scores than male students. The literature reports on gender differences in academic motivation are inconsistent. For example, among over 1100 Italian and Russian students, female students had higher scores on intrinsic and extrinsic motivation, whereas male students reported higher scores on amotivation [46]. However, other studies, such as [47] that was conducted in Turkey, found that male students had higher intrinsic and extrinsic motivation than their female counterparts. Indeed, academic motivation and accomplishment are related to individuals’ characteristics such as non-cognitive traits (e.g., motivation, integrity, and interpersonal interaction) [48, 49].

Indeed, sociocultural influences markedly affect the disparities in stress, bullying, and academic motivation. Gender norms, societal expectations, and cultural views on emotional expression may elucidate the higher levels of stress and motivation reported by female students. Cultural disparities in the perception of bullying and the

propensity to disclose such incidents may account for discrepancies in study findings [1, 50]. Identifying these elements is crucial for formulating treatments that cater to varied student requirements and promote conducive learning environments.

Limitations of the study

The study has several limitations that should be noted. Although it was conducted across four universities in Saudi Arabia, these universities were located in only three regions of the country, and all were governmental institutions. Including both private and governmental universities from all the Kingdom regions would provide more generalizable results. Additionally, the study employed a cross-sectional design and self-reported measures, which only allow for the examination of associative relationships and may introduce reporting biases or errors. A convenience sampling technique was used for data collection, which resulted in a higher proportion of female respondents. This gender imbalance may introduce bias in the findings. A more structured sampling technique could help mitigate this limitation and ensure a more diverse respondent pool, improving the study’s generalizability. These factors, including the reliance on self-reported data and the overrepresentation of female participants, should be carefully considered when interpreting the results.

Conclusion

In conclusion, our study sheds light on the gender differences in acute and perceived stress levels, bullying, and academic motivation among nursing and midwifery students. Female nursing and midwifery students are facing higher levels of acute and perceived stress. Furthermore, female students reported higher levels of academic motivation compared to male students. The findings of this study contribute to the literature on gender differences among nursing and midwifery students. The study highlights the importance of supporting nursing and midwifery students, specifically female student, by providing a supportive and encouraging environment to help them succeed in their study and foster motivation for their future career.

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Author contributions

HFA and FMA: Conceptualization, Methodology, Writing- Original draft, Formal Analysis. AFA, MTA, NSA, AMA, and AKA: Investigation, Visualization, Writing- Review & Editing.

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Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The design and data collection for this study were approved by the Shaqra University Standing Committee on the Ethics of Scientific Research (ERC#: ERC_SU_20220097). A written informed consent was obtained from the participants. In addition, this study was conducted in accordance with the guidelines of the Declaration of Helsinki. Participating students were made aware of the aims of the study, that their participation is voluntary, and they have the right to withdraw from the study at any time without consequences. Authors did not obtain identifiers or personal information to maintain full privacy and confidentiality of participants.

Consent for publication

Not Applicable.

Competing interests

The authors declare no competing interests.

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