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Psychometric properties of the Arabic version of the bullying behaviours instrument in nursing education

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المخلص

أهداف البحث: قيمت هذه الدراسة الخصائص قياس العمليات النفسية باستخدام النسخة العربية لسلوكيات التنمر في تعليم التمريض عند استخدامها بين طلاب التمريض.

طرق البحث: قمنا بتكييف تصميم دراسة كمية، وصفية، ومقطعية واخترنا عينة ملائمة من ١٨٩ طالب تمريض في جامعة حكومية في المملكة العربية السعودية. قمنا باستخدام استطلاع عبر الإنترنت لجمع البيانات من يناير إلى مارس ٢٠٢٠. تم استخدام مؤشر صحة المحتوى على مستوى العنصر ومؤشر صلاحية المحتوى على مستوى المقياس باستخدام طريقة المتوسط لصلاحية المحتوى. تم استخدام معامل الارتباط ألفا كرونباخ وداخل الصف للتأكد من موثوقية الاختبار إعادة الاختبار للتحليل الإحصائي. قمنا بتحليل المكون الرئيس مع دوران فاريماكس لبناء الصلاحية. تم استخدام اختبار أنوفا وتوكي لتحديد ارتباط المتغيرات.

النتائج: كشف التحليل عن ثلاثة عوامل مختلفة تشرح ٥٩.٧٪ من التباين. وكان إجمالي كرونباخ ألفا باستخدام النسخة العربية لسلوكيات التنمر في تعليم التمريض ٠.٨٨٦، وتراوح ثلاث عوامل من ٠.٧١٦ إلى ٠.٨٤٧. بالنسبة لموثوقية الاختبار وإعادة الاختبار، وكان معامل الارتباط داخل الصف بالمقياس العام ٠.٩٣٩. كان هناك فرق كبير في الدرجات الإجمالية لسلوكيات التنمر في تعليم التمريض النسخة العربية في سنوات الدراسة المختلفة. ولوحظ أيضا اختلاف كبير في درجات سلوكيات التنمر في تعليم التمريض النسخة العربية من حيث المكانة في الأسرة.

الاستنتاجات: أظهرت النسخة العربية من مقياس سلوكيات التنمر في تعليم التمريض محتوى مقبولا وبناء لخصائص القياس النفسي. يمكن استخدام هذه الأداة لإجراء تقييم دقيق لسلوكيات التنمر التي يعاني منها طلاب التمريض في

المملكة العربية السعودية. كما يمكن أن تكون النتائج أساسا لتطوير إرشادات لمكافحة التنمر لإنشاء بيئة تعليمية سريرية إيجابية وغير ضارة لتعزيز احترام طلاب التمريض لذاتهم ومشاركتهم المهنية.

الكلمات المفتاحية: التنمر؛ التكيف الثقافي؛ طلاب التمريض؛ الخصائص النفسية؛ المملكة العربية السعودية

Abstract

Objectives: This study assesses the psychometric properties of the Bullying Behaviors in Nursing Education Arabic (BBNE-A) version when used among nursing students.

Methods: We adopted a quantitative, descriptive, and cross-sectional study design and selected a convenience sample of 189 nursing students in a governmental university in KSA. We utilised an online survey to collect data between January and March 2020. The item-level content validity index and scale-level content validity index utilising the averaging method were used for content validity. The Cronbach's alpha and the intra-class correlation coefficient for the test-retest reliability were used for statistical analysis. We performed a principal component analysis with varimax rotation for construct validity. ANOVA and Tukey HSD tests were utilised to determine the association of variables.

Results: The analysis revealed three distinct factors explaining 59.7% of the variance. The overall Cronbach's alpha of BBNE-A was 0.886. The three factors ranged from 0.716 to 0.847. For the test-retest reliability, the ICC of the overall scale was 0.939. There was a significant difference in the BBNE-A overall scores in different years of study ($F = 3.57, p = .030$). A significant difference was also observed in the BBNE-A scores regarding positions in the family.

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Conclusion: In our study, the BBNE-A demonstrated acceptable content and constructed psychometric properties. This tool can be utilised to accurately assess the bullying behaviours experienced by nursing students in KSA. The results can provide a basis for developing an anti-bullying guideline to make an optimistic, harmless clinical learning milieu in promoting nursing students' self-esteem and professional engagement.

Keywords: Bullying; Cultural adaptation; KSA; Nursing students; Psychometric properties

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Introduction

Bullying in nursing education, particularly among students and between teachers and students, is a significant issue that has not been properly addressed. Bullying occurs frequently, and no solution is provided to address these incidents.¹ This study shows that bullying by fellow students and the nursing faculty is common, and policies are required to address the difficulty faced by institutions. Student nurses admitted that they experienced bullying on a daily or weekly basis.² Bullying is the repeated abuse of power over a person, whether it be physical, verbal, or social.³ In this study, researchers define bullying as the repetition of violent actions, verbal abuses, offensive writing, and social aggression that can negatively affect student nurses. Bullying in nursing education must be prevented because of its negative effects on students' learning process, which can have an impact on them in the workplace in the future. Methods that will stop bullying behaviours and promote a workplace desirable for learning must be implemented in academe.⁴

Numerous tools were recognised worldwide to assess the bullying experience in nursing education. The 'Bullying, Harassment, and Horizontal Violence' tool created by Geller⁵ assesses this behaviour displayed by each student nurse only in the practical setting.⁶ However, nursing students can also experience bullying from other persons, including medical doctors, nurses, and clinical instructors.¹ Instruments that can help assess the bullying experienced by student nurses are limited. A good example is the 'Bullying Behaviors in Nursing Education (BBNE)' tool by Cerit, Keskin, and Ekici.⁴

In KSA, studies on nursing students' bullying-related experiences are limited, and this paper attempts to fill the gap, in accordance with the country's culture. This

investigation is the first attempt to provide evidence on the psychometric analysis of an adapted version of the BBNE. Its results can provide an accurate assessment tool to assess the bullying experienced by student nurses, which may affect their physical and mental well-being.

Background of the study

Bullying is a global phenomenon that manifests even in the nursing career.⁷ However, definite statistics on global bullying incidents have yet to be established. Decades ago, reports on bullying in the nursing profession increased, and they involve behaviours such as humiliation, intimidation, threats, and demeaning actions.⁸ In their study on the perception of nurses' management capability for verbal abuse situations, Sofield and Salmond⁹ reported that 56% of the surveyed nurses could not control malicious conditions. The primary problem was how they receive verbal abuse. Randle¹⁰ revealed that bullying was a major theme that students reported when they became a nurse.

Although the occurrence of bullying differs in each study, this behaviour happens in the nursing setting. In the clinical area, nurses working in a toxic area see the students as an added problem to their workload.¹¹ Student nurses encounter this behaviour because they also have inadequate knowledge and are pressured by the new setting.¹² Bullying nursing students begin when educators show abusive power and superiority, thus displaying excessive control over students.¹³ In the studies of Ibrahim & Qalawa,¹⁴ Vink,¹⁵ and Clark & Springer,¹⁶ the behaviour of teachers was perceived by the nursing students as a form of incivility. Celik and Bayraktar¹⁷ specified that students identified their classmates as the main source of bullying. Thus, bullying often begins when student nurses experience it from their fellow students. Lastly, gender, academic achievements, and academic settings influence incivility towards students.^{14,18}

Bullying greatly influences the lives of children and adolescents.¹⁹ It can be constant across all ages, and it lasts until late adolescence. Bullying can influence severe psychological manifestations, including self-inflicted harm, negative attitudes, and psychotic signs. Fleming and Jacobsen²⁰ regarded these effects as distressing, consequently negatively affecting people's relationships, health practices, and psychological state.

Several methods were found to be effective against bullying in an academic setting. Peer support systems have been documented as positively impacting the victims, people who help, and the college.^{21,22} Students' evaluation of an innovative blended learning resource effectively dealt with bullying, improving coping strategies.²³ In the study of Palumbo,²⁴ the incivility e-learning module in their curriculum provided effective education against incivility.

Materials and Methods

Design

We used a quantitative, descriptive, cross-sectional study in a governmental nursing university in Riyadh, KSA.

Sample characteristics

By using convenience sampling, 189 students in the nursing department were selected as the study population. This number was sufficient for factor analysis (1 item is to 10 samples).²⁵ We included the following criteria in selecting the sample: (1) Saudi nationality, and (2) nursing students in the 2nd to 4th year. First-year students were not included in the study because they had no major nursing subjects.

Translation and cultural adaption steps

The BBNE-A was translated from English based on the suggested procedures for cross-cultural instrument translation.²⁶ Stage I: Initial Translation: Two language experts, whose primary language was Arabic, individually translated the English version into Arabic. The first translator was a Saudi nursing professor teaching in a university. The second translator was a Saudi translator who was unaware of the topic being studied. Stage II: Synthesis of The Translations: In this step, the two versions of the Arabic translation were compared and discussed by the two translators, and a common translation was obtained. Stage III: Back Translation: After finalising a version, it was translated back to English by a language expert, unaware of the research topic and the original tool, translated it back to English. In this stage, it was ensured that the translated version would reflect similar items as the original version. Stage IV: Expert Committee: In this stage, the expert committee consolidated the two versions and developed a pre-final version for testing. Five expert panels reviewed the experiential meaning in language, uniqueness, and similarities of the two versions. They assessed each item's applicability using a four-point Likert scale ranging from "1 (not relevant) to 4 (highly relevant) for content validity". Stage V: Test of the Pre-final Version: In this step, the pre-final version was evaluated by 30 nursing students for acceptability and comprehensiveness of the scale. The students were asked to determine their opinions about the suitability, difficulty, relatedness, and ambiguity of the survey items. The respondents found the questionnaire understandable, and the form was finalised by the committee based on the results. The final version was prepared and was tested for validity and reliability.

Procedures

We started our data collection from January to March 2020. An online survey, which comprised three parts, was used for data collection. Part one contained the study information and the consent form. Part two asked the following information: gender, academic year level, family structure (nuclear or extended family), family income

(<10,000 SAR, 10,000–14,999 SAR, 15,000–19,999 SAR, and 20,000 SAR and above), and position in the family (first, second, third, or fourth born, and above).

Part three contains the Arabic-translated questionnaire of BBNE based on the study by Cerit, Keskin & Ekici.⁴ The tool consists of four domains and an 18-item scale assessing the bullying experiences of student nurses in the academic set-up. The four domains are labelled as follows: "isolation of students from the education environment" (four items), "attack on academic achievement" (four items), "attack on personality" (six items), and "direct negative behaviours" (four items). The rating scale is as follows: "0 — never experienced, 1 — experience for a few times a year, 2 — experience for a few times a month, 3 — experience for a few times a week, 4 — experience once a day, 5 — experience a few times a day". The BBNE's Cronbach's α coefficient was .88, whereas its reliability was .92. Therefore, it was a valid and reliable tool.⁴

The study is a part of a research project approved by the XXXXX. We adhered to the guidelines and proper ethics in researching the study. Online recruitment was done, and we sent a survey link to the respondents. A research information page comprising the brief overview, importance and the purpose of the study, students' participation, the students' rights, and the voluntary nature of participation were included in the online survey's primary part. The students were requested to proceed with the online investigation if they agreed to join. No identification information was collected from the students to ensure privacy and confidentiality throughout the study. However, unique codes were assigned to every student for matching the data in the test and retest. Data were also protected by password, and only the researchers had access to online documents. Completed surveys were automatically registered online.

Statistical analysis

We utilised the SPSS version 22.0 for the statistical interpretation. Descriptive statistics, such as frequency, mean, and standard deviation, were utilised.

Content validity

The item-I (I-CVI) and scale-level content validity index utilising the averaging method (S-CVI/Ave) were used to verify content validity. Scores of one in I-CVI and ≥ 0.90 in S-CVI/Ave were considered satisfactory.²⁷

Construct validity

Kaiser–Meyer–Olkin (KMO) and Barlett's tests of sphericity were used to identify the adequacy of the sample size (KMO value ≥ 0.60) and applicability of the factor model ($p < .05$) before the exploratory factor analysis (EFA). An item-to-total correlation (ITC) of < 0.30 or > 0.80 was used as a basis for the validity of the internal structure.²⁸ We performed principal component analysis (PCA) with varimax rotation for construct validity.²⁹ Factors with an eigenvalue > 1 and factor loading > 0.40 show adequate construct validity.²⁹

Reliability

Cronbach's $\alpha \geq 0.70$ was adequate, and an intraclass correlation coefficient (ICC) ≥ 0.80 of the tool was obtained for reliability.²⁷ We requested students to fill in the BBNE-A again for the tool's reproducibility within two weeks. A total of 59 respondents were included for test-retest reliability. We utilised Cronbach's alpha (α) and the ICC for test-retest reliability.

Tests of association and differences

ANOVA and Tukey HSD tests were utilised for the tests of association and differences of variables.

Results

The ages of the nursing students ranged from 18 to 26 years (average 21.33 ± 1.21 years). Most students were female (56.6%), from a nuclear family (55.5%), and had a

family monthly income of less than 10,000 SAR (53.8%). About 39.0% of the students were in the third year, whereas 34.6% and 26.4% were sophomores and juniors. Almost half of the respondents (48.9%) were the fourth child and above in the family (Table 1).

Content validity of the BBNE-A

Five experts evaluated the content validity of the BBNE-A. All 18 items obtained the I-CVI value of one except for one item, and the S-CVI/Ave was 0.986. Item 9, "not making eye contact while talking," received an I-CVI of 0.75. Hence, it was omitted from the scale. The S-CVI/Ave after removing this item was one.

Construct validity

The 17 items were entered into an EFA with varimax rotation to examine the underlying factors of the BBNE-A. In the first EFA, the KMO value was 0.856, and Barlett's test of sphericity was substantial ($p < .001$). The first EFA yielded the following factors with eigenvalues above one: Factor 1 included items 14, 13, 12, 5, 6, 7, and 11 (factor loading range = 0.471–0.789); Factor 2 included items 18, 17, 16, 15, 11, and 10 (factor loading range = 0.565–0.803), Factor 3 included items 2, 3, 4, and 10 (factor loading range = 0.486–0.800); and Factor 4 included items 8, 1, and 11 (factor loading range = 0.429 to –0.587). Item 11 cross-loaded to Factors 1 (0.471), 2 (0.580), and 4 (0.429). Item 10 cross-loaded to Factors 2 (0.565) and 3 (0.486). Items 11 and 10 were retained in this factor because heavily loaded on Factor 2. However, we decided to drop items 1 and 8 for the following reasons: (a) the Cronbach's α of this factor was only 0.125, and (b) only two items were present in Factor 4.

After removing items 1 and 8, we conducted an EFA with the remaining 15 items. Table 2 shows that the means of the 15 items ranged from 0.22 ± 0.75 to 1.02 ± 1.50 . The ITC values were from 0.417 to 0.696. None of the items, if deleted, caused a 10% increase in the Cronbach's α scale. In the second EFA, the KMO value was 0.854, and Barlett's test of sphericity was significant ($p < .001$). Three factors emerged with eigenvalues above one, explaining 59.7% of the variance. Table 3 shows that Factor 1

Table 1: Demographic variables of the respondents (n = 182).

Variables	Mean (SD)	Range
Age	21.33 $\pm$ 1.21	18–26
Sex	n	%
Male	79	43.4
Female	103	56.6
Year of study		
Second year	48	26.4
Third year	71	39.0
Fourth year	63	34.6
Family structure		
Nuclear	101	55.5
Extended	81	44.5
Family income		
<10,000 SAR	98	53.8
10,000–14,999 SAR	39	21.4
15,000–19,999 SAR	21	11.5
20,000 SAR and above	24	13.2
Position in the family		
First	35	19.2
Second	25	13.7
Third	33	18.1
Fourth and above	89	48.9

Table 2: Descriptive analysis result, item–total correlations, and alpha is an item that is deleted (n = 182).

Item	Mean	SD ^a	ITC ^b	α if item is deleted
Not being accepted to the group of friends	0.71	1.28	0.494	0.882
Being left alone during breaks	0.79	1.39	0.424	0.886
Intentionally leaving the environment when you enter an environment	0.39	1.14	0.514	0.880
Limiting self-expression	1.02	1.50	0.417	0.888
Not being trusted in the competence related to lectures	0.60	1.14	0.507	0.881
Being forced to do a job that will negatively affect your self-confidence	0.36	1.01	0.612	0.876
Talking in a humiliating and degrading style	0.49	1.21	0.611	0.876
Questioning your honesty and reliability	0.54	1.08	0.652	0.874
Being scolded loudly in public	0.44	1.05	0.593	0.877
Using degrading mimics or body language	0.43	0.96	0.696	0.874
Talking bad or unfounded behind you	0.40	0.85	0.627	0.877
Making practical jokes	0.51	1.08	0.629	0.875
Being exposed to verbal or behavioral sexual implications	0.22	0.75	0.632	0.878
Mild violence to intimidate (slamming a file, pushing with hands, and so forth)	0.27	0.93	0.533	0.880
Being exposed to physical violence	0.27	0.94	0.570	0.878

Note. ^aStandard deviation, ^bItem-total correlation.

Table 3: Result of the factor analysis (n = 182).

Item	Factor 1	Factor 2	Factor 3
14. Talking bad or unfounded behind you	0.804		
13. Using degrading mimics or body language	0.760		
12. Being scolded loudly in public	0.731		
7. Being forced to do a job that will negatively affect your self-confidence	0.599		
6. Not being trusted in the competence related to lectures	0.567		
5. Limiting self-expression	0.544		
18. Being exposed to physical violence		0.813	
17. Mild violence to intimidate (slamming a file, pushing with hands, and so forth)		0.774	
16. Being exposed to verbal or behavioural sexual implications		0.665	
15. Making practical jokes		0.647	
11. Questioning your honesty and reliability	0.491	0.598	
10. Talking in a humiliating and degrading style		0.563	0.506
2. Not being accepted to the group of friends			0.810
3. Being left alone during breaks			0.728
4. Intentionally leaving the environment when you enter an environment			0.723
Eigenvalue	6.24	1.49	1.23
Variance explained (%)	41.6	9.9	8.18
Cumulative variance explained (%)	41.6	51.5	59.7

comprises six items with factor loadings from 0.491 to 0.804, thereby contributing 41.6% of the variance. Factor 2 has six items with factor loadings from 0.563 to 0.813, thereby explaining 9.9% of the variance. Four items loaded in Factor 3 with loadings ranging from 0.506 to 0.810 explain 8.18% of the variance. Two items cross-loaded to two factors: item 11 loaded to Factors 1 (0.491) and 2 (0.598), and item 10 loaded to Factors 2 (0.563) and 3 (0.506). We decided to retain items 11 and 10 to Factor 2.

Reliability of the BBNE-A

The overall Cronbach's α of the 15-item BBNE-A was 0.886, whereas Cronbach's α of the three factors ranged from 0.716 to 0.847. We also computed Cronbach's α values in the second data collection (n = 59), which yielded an overall α of

Table 5: Results of the tests of associations and differences between the variables (n = 182).

Variable	Mean	SD	Statistical test	p
Age			$r = 0.19$	.009**
Sex				
Male	0.47	0.70	$t = -0.25$	.805
Female	0.49	0.68		
Year of study ^a				
Second year	0.32	0.59	$F = 3.57$	.030*
Third year	0.44	0.67		
Fourth year	0.65	0.74		
Family structure				
Nuclear	0.41	0.58	$t = -1.45$	.148
Extended	0.57	0.79		
Family income				
<10,000 SAR	0.43	0.67	$F = 0.43$	.731
10,000–14,999 SAR	0.55	0.78		
15,000–19,999 SAR	0.54	0.66		
20,000 SAR and above	0.53	0.61		
Position in the family ^b				
First	0.29	0.39	$F = 4.68$	.004**
Second	0.51	0.71		
Third	0.85	0.97		
Fourth and above	0.41	0.59		

Note. ^a2nd year versus 4th year ($p = .029$); ^bThird versus first ($p = .004$), Third versus fourth and above ($p = .008$).

*Significant at .05, **Significant at .01.

0.943 and an α ranging from 0.816 to 0.885 for the three subscales. Regarding the test-retest reliability, the ICC of the overall scale was 0.939, whereas those for its subscales were from 0.879 to 0.968 (Table 4) (see Table 5).

Tests of association and differences

A small positive correlation was revealed between the students' age and their overall score in the BBNE-A ($r = 0.19$, $p = .009$). The ANOVA revealed a significant difference in the BBNE-A overall scores between students in different years of study ($F = 3.57$, $p = .030$). The Tukey HSD test showed that fourth-year students (0.65 ± 0.74) reported significantly higher BBNE-A scores than those in the second year (0.32 ± 0.59 , $p = .029$). A significant difference was also observed in the BBNE-A scores in terms of position in the family. Students who were the third child (0.85 ± 0.97) reported higher BBNE-A scores than those who were first (0.29 ± 0.39 , $p = .004$) and fourth and above (0.41 ± 0.59 , $p = .008$).

Table 4: Results of the reliability tests of the tool.

Factors	Cronbach's alpha (n = 182)	Cronbach's alpha of the retest (n = 59)	Intraclass correlation coefficient (n = 159)
Factor 1	0.802	0.816	0.879
Factor 2	0.847	0.885	0.968
Factor 3	0.716	0.832	0.954
Overall	0.886	0.943	0.939

Discussions

Three significant findings are emphasised in this study: the tool's validity, reliability, and the association of the student nurses' bullying behaviours experience as measured by the BBNE-A with the respondent's demographic data.

The validity of BBNE-A was supported by establishing its construct and content validity. The tool presented satisfactory content validity. The individual items of the BBNE-A represent the main domain (bullying experiences), projecting the entire assessment scale. The revised ITCs were acceptable, and one of the items was deleted based on the conditions. The item "not making eye contact while talking" was excluded from the tool. This specific finding can be related to the Arab culture, with firm rules on eye contact between genders. Regarding other cultures, eye contact signifies substantial and good communication; however, Saudi females are not encouraged to make excessive eye contact with males because it can be misinterpreted as seduction. This circumstance might have arisen from firm cultural rules concerning eye contact among genders.³⁰

The values of the KMO and Barlett's test of sphericity uphold the appropriateness of the sample size and the correctness of the factor model. Three definite factors were recognised in the BBNE-A by using the PCA with varimax rotation; the jointly explained variance of bullying behaviours experienced by student nurses is 50.0%, signifying satisfactory construct validity.³¹

The three factors in the present sample are different from those in the original version, and its original items from each factor were rearranged. In the new version, Factor 1 focused on the attack on self-worth. The items in Factor 2 are about prejudiced ignominy, and those in Factor 3 are about exclusion and isolation. An item from "isolation of students from the education environment" and one item from "attacks on academic achievement" were excluded because their Cronbach's α was only 0.125.

Factor 1 (attack to self-worth) comprises six items which are "limiting self-expression," "not being trusted in the competence related to lectures," "being forced to do a job that will negatively affect their self-confidence," "being scolded loudly in public," "using degrading mimics or body language," and "talking bad or unfounded behind you.". This variable concerns suppressing one's confidence and satisfaction, resulting in making a person feel inhibited and undervalued. Regarding the characterising factor 1, self-worth is how they feel about themselves and their abilities, and this is affected when one is not accepted.³² Restriction of self-expression, ability not reliably related to lectures, and unceasingly being given tasks that are beyond their competence are passive-aggressive behaviours.^{2,33} These behaviours damage the victim's public pride, self-worth, and confidence.⁴ In nursing education, faculty members can be a source of knowledge or negatively affect students' behaviours, thereby leading to poor student-faculty relationships and difficult learning setting.³⁴

Moreover, Factor 2 (prejudiced ignominy) can be related to the definition of bullying as repetitive violent actions and

verbal abuses.³⁵ It is composed of six items: "talking in a humiliating and degrading style," "questioning your honesty and reliability," "making practical jokes," "being exposed to verbal or behavioural sexual implications," "mild violence to intimidate (slamming a file, pushing with hands, and so forth)," and "being exposed to physical violence." These coincide with the concept of bullying as frequent violent actions that can hurt another person.³⁶ Supporting this factor, a study conducted in the US shows that nursing students reported bullying experience that consists of unsuitable, offensive, bad-mannered, or aggressive behaviours and demeaning or embarrassing actions.³⁷ Celik and Bayraktar¹⁷ examined 225 nursing students and described verbal abuse experiences, such as being yelled at, shamed, cursed, and exposed to physical maltreatment.

The items of Factor 3, identified as exclusion and isolation, include "not being accepted to the group of friends," "being left alone during breaks," and "intentionally leaving the environment when you enter an environment." Cooper, Walker, Askew, Robinson, and McNair³⁷ stated that social exclusion is an indicator of bullying. This concept is shown in the study conducted among nurses, wherein they had experienced exclusion and are prohibited from their rights.³⁸ A study conducted by Stevenson, Randle, and Grayling³⁹ reviewed 313 student nurses, and the most obvious bullying behaviours were being refused or rejected.

On examining two forms of reliability focusing on internal consistency and stability (test-retest reliability), it was found that the BBNE-A had an acceptable internal consistency, further indicating that the individual items were coherent.²⁸ Numerous discriminating indices were noted, indicating an appropriate diversification of study respondents assessed by the BBNE-A. The Cronbach's α value (>0.70) was above the assumed threshold. The three factors demonstrated good stability of results for the repeated measurement. Resistance to incidental variability (good absolute stability parameters) is also appropriate.⁴⁰ Therefore, BBNE-A is a reliable instrument for measuring Saudi nursing student's bullying experience.

The extent of bullying among students is significantly related to their academic level. This study found that students in the fourth year experience a higher level of bullying than those at lower levels. Third and fourth-year nursing students suffered more verbal, and academic abuse than those in the lower year because they have the highest number of hours in clinical practice.^{2,4,41} Students under internship experienced more bullying than those in the lower level.⁴²

The current study result contradicts the results of Mabrouk,³⁴ who emphasised no association between bullying and academic year. Van der Werf⁴³ reported that students in the lower year are more prone to be bullied. Whitney & Smith, and Smith et al., as cited by Wolke and Skew,⁴⁴ emphasised that older adolescents are less likely to be bullied than younger ones. Therefore, the learners' age can be a factor that affects their bullying experiences as victims.

Sibling arrangement affects the extent of bullying. This study reveals that the middle children in the family face a greater extent of bullying. Hence, they feel that they are

bullied more than their siblings born later in the family. This notion is supported by the fact that the last-born child has a lower chance of experiencing any bullying behaviour than the middle children. Being the last or first child was related to a lower chance of being bullied.⁴⁴ Middle children may become passive or may attempt to overachieve. Thus, middle children have a great tendency to experience bullying.⁴⁵

Limitations of the study

The cross-sectional design and the limited locations of the study present limitations to the generalizability of the results. Also, the study used a convenience sampling technique.

Conclusions

In conclusion, BBNE-A has acceptable content and construct validity. This tool can be utilised to accurately assess the bullying behaviours experienced by student nurses in KSA. Academic year and position in the family displayed an association with bullying experienced by nursing students. Hence, the findings supported the validity and reliability of the BBNE-A for Saudi nursing students and provided valuable insights into experiences of bullying behaviour. Nursing students benefit from the protection from the undesirable outcomes of bullying through anti-bullying programs and being assessed accordingly through formulated assessment tools. A valid and reliable instrument is essential in all colleges in the university. The result will aid academic institutions in formulating an evidence-based anti-bullying policy that can protect their students from the undesirable results of bullying. Students can achieve optimal psychological health in performing their tasks and responsibilities. The findings will motivate faculty members to attend training to create a school-based anti-bullying program. In the nursing academe, the results can be a basis for the development of an anti-bullying guideline. This concept justifies the necessity to continuously make an optimistic, harmless clinical learning milieu in promoting student nurses' self-esteem and professional engagement. An environment that does not tolerate bullying will reinforce student nurses' perception of well-being, belongingness, empowerment, confidence, intellectual development, and ongoing interest to study. Lastly, a cross-cultural assessment of the tool is encouraged to enhance the result.

Recommendation

Future studies could use a different approach and a wide scale of settings to ensure that the findings could be generalised. Future studies may utilise the random sampling technique to ensure the generalizability of findings.

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Conflict of interest

The authors have no conflict of interest to declare.

Ethical approval

This protocol was approved by the Central IRB committee, according to ICH-GCP. Central IRB log no: 2019-0165E, dated December 22, 2019.

Authors contributions

JBB conceived and designed the study, conducted research, collected and organised data, analysed and interpreted data, wrote the initial and final draft of the article, and revised the final draft critically for important intellectual content. NA provided research materials, logistic support, collected data and revised content, verified for plagiarism, and approved the final version for publication. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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