

The Psychometric Properties of the Cyberbullying Scale among University Students

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Abstract

The current research aims to develop a specific dimension-based scale to measure cyberbullying among university students in the Arab context, particularly in Saudi Arabia. The aim is to provide researchers in psychological measurement and behavioral sciences with appropriate standards for measuring cyberbullying. The final version of the scale consists of (21) items distributed across three main dimensions: Psychological dimension, Academic dimension, and Social dimension. The descriptive psychometric approach was employed, and the sample consisted of (110) voluntary participants from the College of Education at King Khalid University in Saudi Arabia. Their ages ranged from 18 to 26 years, with an average age of 23.81 and a standard deviation of 3.62. The validity and reliability of the scale were calculated, and the results showed high levels of validity at a significance level of (0.01), indicating the scale's validity in measuring what it was designed to measure. The reliability coefficients were also high, indicating that the Cyberbullying Scale possesses a high degree of both validity and reliability.

Keywords: Cyberbullying scale, university students.

Introduction

In the era of modern technology, access to the internet has become easy for all segments of society, especially university students. With the widespread use of technology among university students, the phenomenon of cyberbullying has also emerged. Hillsberg and Spak (2006) pointed out that cyberbullying is an extension of traditional bullying behavior, now using electronic communication methods, including sexual, intellectual, and material exploitation. Cyberbullies often engage in threatening, intimidating, and spreading rumors using mobile phones or computers, through text messages, emails, or online chat rooms. They frequently hide their true identities. Park et al. (2021) highlighted that cyberbullying among teenagers is a rapidly growing global phenomenon that can significantly harm their well-being. Also, online harassment is considered a major and growing public health issue, as it is associated with delinquent and criminal behaviors. Mahmoud (2021) stated that cyberbullying involves continuous online attacks against individuals, including threats, intimidation, and violations of privacy and freedom. Several previous studies that examined cyberbullying among university students have used unspecified, non-dimensional measures. For instance, a study by Badawi and Dabar (2023) found that the level of cyberbullying among university students was moderate. Another study by Maasho and Naber (2023) identified the causes of cyberbullying among university students in Algeria, including compensating for feelings of inadequacy, personality disorders, jealousy, parental treatment, and electronic games. Mahmoud (2022) showed a statistically significant

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positive correlation between cyberbullying and suicidal ideation among Ain Shams University students. A study by Mthias, Anna, and Anett (2022) indicated that justice and empathy were negatively associated with cyberbullying among university students. Kafiniyah (2022) found significant gender and academic specialization differences in cyberbullying among students at Al-Balqa Applied University in Jordan. A study by Al-Atel et al. (2021) revealed that exclusion was the most common form of cyberbullying among students at the College of Basic Education in Kuwait.

The previous studies presented have revealed that they relied on measures to assess cyberbullying as a whole, primarily at a college level, without any multidimensional scales specifically designed to measure cyberbullying. Within the scope of the researchers' knowledge, there has not been any comprehensive scale with dimensions to assess cyberbullying. Therefore, the current research aims to design a multi-dimensional scale for measuring cyberbullying among university students. The primary objective is to establish the psychometric properties including validity and reliability, of the Cyberbullying Scale for university students. The significance of this study lies in providing a scale with dimensions that can effectively measure cyberbullying among university students. This scale serves as a practical and valuable tool for research in the field of cyberbullying and can benefit future studies in this area.

Cyberbullying

Cyberbullying is defined as aggressive behavior directed by the perpetrator towards the victim to cause psychological harm, and it occurs repeatedly through modern communication channels (Maasho & Naber, 2023, p. 150). Yudes and Extemera (2020, p. 1) describe it as repeated aggressive and deliberate violence against someone using modern communication technologies such as email, chat rooms, and internet platforms. Adam (2021) elucidated some of the key reasons that may lead an individual to become a cyberbully, including feelings of worthlessness, low self-esteem, psychological and familial disturbances, and even when the cyberbully themselves have been a victim of bullying. Park et al. (2021) emphasized that cyberbullying is facilitated by the technological aspect that eliminates geographical boundaries and enables identity concealment. It has a negative impact on the mental and social health of adolescents leading to psychological and social issues. Mahmoud (2021, p. 510) categorized forms of cyberbullying as follows: Deceiving someone to obtain their secrets and information and then sharing and causing harm to them online, tarnishing a person's reputation by belittling and diminishing their worth, electronically stalking others through continuous threats and instilling fear, and impersonating another individual to send damaging information that tarnishes that person's reputation.

Explanatory Theories of Cyberbullying

1. **General Strain Theory:** Advocates of this theory argue that individuals who experience significant stress in their lives respond to life situations with aggressive and frustrated reactions. Consequently, they may engage in malicious behaviors, such as children who have experienced bullying in their lives planning to engage in cyberbullying and thus vent their anger and frustration (Hinduja & Patchin, 2010).
2. **Theory of the Disinhibition Effect in Electronic Communication:** The proponent of this theory suggests that individuals can bypass any constraints when communicating electronically with others, allowing them to present themselves in ways that deviate from their true selves. This lack of self-regulation during digital communication can lead to cruelty and aggression towards others in the digital realm (Suler, 2004).
3. **Behavioral Theory:** This theory posits that the behavior of a cyberbully reflects their personality. Cyberbullies are characterized by impulsivity and aggressive behavior

toward others, often seeking to demonstrate their physical and psychological dominance over them (Barash, 2001, p. 115).

4. **Frustration-Aggression Theory:** This theory explains that bullying behavior leads to aggression, driving individuals to harm others as a form of emotional release. Additionally, frustration can lead to feelings of injustice and anger, making individuals more inclined to engage in bullying behaviors against others (Al-Abadi, 2017).

In light of the literature and previous studies, the researchers define cyberbullying as "the ability of an individual to exert control over others through online means to satisfy their psychological, academic, and social motives, despite being aware that it violates the personal rights of the victims." Based on this definition, three primary dimensions of cyberbullying were identified:

1. **Psychological Dimension:** This refers to an individual's ability to exert control through online means using any electronic methods to achieve personal goals and satisfy psychological motives. This may include seeking happiness, power, control, and triumph over others.

2. **Academic Dimension:** This involves an individual's control over others and their harm through online channels to satisfy academic motives within a university setting. This could encompass deceiving peers, causing disruptions, or engaging in behaviors aimed at gaining academic advantages to improve their academic performance and cumulative GPA.

3. **Social Dimension:** This pertains to an individual's capability to exert control over others through online means to threaten, intimidate, or harm them. It also includes the ability to impersonate other personalities to satisfy social motives within their environment despite being aware that this violates the personal rights of the victims.

The scale was developed with 21 items, distributed across these three main dimensions: Psychological dimension (6 items), academic dimension (7 items), and social dimension (8 items). It is worth noting that all items on the scale are positively phrased. To score the scale, a three-point Likert scale with weighted responses was used, including "Agree = 3 points," "Sometimes = 2 points," and "Disagree = 1 point." The highest possible score on the scale is 63, indicating a high level of cyberbullying among university students, while the lowest score is 21, indicating a low level of cyberbullying among these students.

Methods

The study adopted a descriptive psychometric approach. The participants were voluntary students from the Faculty of Education, Department of Psychology, totaling 110 students. Out of these, 70 were females, accounting for 63.6%, and 40 were males, accounting for 36.4%. Their ages ranged from 18 to 26 years, with an average age of 23.81 and a standard deviation of 3.62. This study received ethical approval from the ethics committee at King Khalid University in Saudi Arabia. The scale was administered to these volunteer students for participation in the study during the academic year 2023.

Psychometric Properties of the Scale

First: Scale Validity

Validity by Experts: The scale was initially presented to a group of experts (7) consisting of specialized professors in psychology, mental health, psychological counseling, clinical psychology, and teaching methods. Based on their guidance, minor linguistic adjustments were made to a few statements to better suit the sample's nature. They unanimously agreed on the appropriateness and validity of applying the scale to university students.

Internal Consistency Validity: In this method, the correlation coefficient values between each statement and the total score of the corresponding dimension were calculated. The

correlation coefficient values between each statement of the scale and the total score of the entire scale were also computed. Additionally, the correlation coefficient values between the dimensions themselves and the total score of the scale were determined. Pearson's correlation coefficient was used to assess internal consistency validity. Tables (1), (2), and (3) illustrate the results.

Table 1. Correlation coefficients of each statement with the total score of the respective dimension for the cyberbullying scale (n=110)

Psychological Dimension		Academic Dimension		Social Dimension	
Statement no.	The correlation coefficient (r) value	Statement no.	The correlation coefficient (r) value	Statement no.	The correlation coefficient (r) value
1	.901**	7	.766**	14	.526**
2	.857**	8	.603**	15	.447**
3	.839**	9	.591**	16	.371**
4	.812**	10	.639**	17	.503**
5	.874**	11	.605**	18	.528**
6	.655**	12	.753**	19	.490**
		13	.601**	20	.346**
				21	.656**

** Significant at (0.01).

Table 2. Correlation coefficient of each item in the scale with the total score of cyberbullying scale (n=110).

Statement no.	Correlation coefficient	Sig.	Statement no.	Correlation coefficient	Sig.	Statement no.	Correlation coefficient	Sig.
1	.699**	0.01	7	.694**	0.01	14	.762**	0.01
2	.609**	0.01	8	.655**	0.01	15	.735**	0.01
3	.600**	0.01	9	.374**	0.01	16	.520**	0.01
4	.725**	0.01	10	.695**	0.01	17	.726**	0.01
5	.791**	0.01	11	.722**	0.01	18	.737**	0.01
6	.610**	0.01	12	.551**	0.01	19	.314**	0.01
		0.01	13	.449**	0.01	20	.269**	0.01

Statement no.	Correlation coefficient	Sig.	Statement no.	Correlation coefficient	Sig.	Statement no.	Correlation coefficient	Sig.
						21	.253**	0.01

** Significant at (0.01).

Table 3. Correlation matrix of correlation coefficients between the dimensions and between the dimensions and the total score of the cyberbullying scale (n=110)

Dimensions	Psychological Dimension	Academic Dimension	Social Dimension	Total score
Psychological Dimension	-			
Academic Dimension	.562**	-		
Social Dimension	.502**	.546**	-	
Total score	.821**	.855**	.818**	-

** Significant at (0.01).

Second: Scale Reliability

To assess the reliability of the Cyberbullying Scale, Cronbach's Alpha coefficient and Split-Half reliability were calculated using the Spearman-Brown prophecy formula. Table 4 illustrates the results.

Table 4. Cronbach's Alpha and split-half reliability coefficients for the cyberbullying scale (n=110)

Dimensions	No. of statements	Cronbach's Alpha	Split-Half	Guttman
Psychological Dimension	6	.884**	.825**	.824**
Academic Dimension	7	** .717	** .766	.724**
Social Dimension	8	** .348	** .086	.345**
Total score	21	** .823	** .808	.790**

** Significant at (0.01).

Results

Based on Table 1, it is evident that all correlation coefficients between each item and the degree of the related dimension were statistically significant at a significance level of (0.01). The values ranged from (0.346 - 0.901), indicating high values that demonstrate the reliability of the scale.

From Table 2, it is clear that the correlation coefficients between each item and the total score of the scale were statistically significant at a significance level of (0.01). The values ranged from (.253** - .791**), confirming that all items of the scale are related to the total score of the scale, indicating the reliability of the scale.

The data in Table 3 show that all correlation coefficients between the scores of the scale dimensions and the total score of the scale were statistically significant at a significance

level of (0.01). The values ranged from (0.502 to 0.855), confirming the reliability of the Cyberbullying Scale.

Table 4 reveals that the reliability coefficients using Cronbach's Alpha (.823), Split-Half reliability (.808), and Guttman (.790) were close and good, statistically significant at a significance level of (0.01). These high-reliability coefficients indicate a high level of stability for the Cyberbullying Scale in measuring cyberbullying among university students.

Conclusion

A cyberbullying scale was developed and designed to measure the dimensions of cyberbullying among university students. The aim was to increase understanding of the psychometric properties of the scale with its specific dimensions. It was standardized on a sample of voluntary participants from the Faculty of Education including both male and female students. The total sample size was 110 students, with 70 females (63.6%) and 40 males (36.4%), with ages ranging from 18 to 26 years, an average age of 23.81 years, and a standard deviation of 3.62. Validity and reliability coefficients were calculated to ensure that the scale possesses a high validity and reliability, making it suitable for application among university students. The importance of this psychometric study lies in the fact that there were no specific research tools available with dimensions for measuring cyberbullying that align with the existing literature and knowledge in this area. Furthermore, this current study provides a reference point for independent research, and it is suggested that researchers utilize this scale in conducting studies related to cyberbullying among university students. It is also recommended to use this scale in psychological measurement and conduct further scientific research on cyberbullying among university students.

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