

Cyberbullying of Adolescents With Disabilities and its Relationship to Their Psychological Adjustment

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HOW TO CITE:

Saep Kamel Allala, Suhaila Mahmoud Banat, Ahmad Hasan Muhareb Harahsheh, Anan Abu Mariam, Ibrahim Fakhri Ibrahim Awad (2026). Cyberbullying of Adolescents with Disabilities and Its Relationship to Their Psychological Adjustment. International Journal of Special Education, 41(18s), 1412-1433

ABSTRACT:

The present study aimed to examine cyberbullying among adolescents with disabilities and its relationship with their psychological adjustment. The study sample consisted of 90 adolescents with visual, physical, and hearing disabilities, selected via convenience sampling from special education centers in Amman, Jordan. Employing a descriptive correlational research design, the researchers developed two instruments: the Cyberbullying Scale for Adolescents with Disabilities and the Psychological Adjustment Scale. Following the verification of their validity and reliability, the scales were administered to the participants. The findings indicated that the level of cyberbullying among adolescents with disabilities was low, while their level of psychological adjustment was high. Statistically significant differences in cyberbullying levels were observed based on the type of disability, with adolescents with hearing disabilities experiencing higher levels of victimization; however, no significant differences were found regarding gender or age. Regarding psychological adjustment, no significant differences were identified regarding gender while statistically significant differences were found regarding the type of disability with adolescents with visual disabilities experiencing higher levels, and statistically significant differences were found regarding the age in favor of adolescents aged from 16-18. Furthermore, the results revealed a significant negative correlation between cyberbullying and psychological adjustment. The study recommends conducting further research on cyberbullying among adolescents with disabilities in relation to variables not addressed in the current study.

Keywords: Cyberbullying, adolescents with disabilities, psychological adjustment.

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Introduction

Bullying is a pervasive social phenomenon that impacts individuals across various contexts, including educational institutions, workplaces, and digital environments. This behavior manifests in diverse forms—ranging from verbal and physical abuse to social exclusion—and precipitates severe psychological consequences, such as diminished self-esteem, heightened anxiety, and depression. The gravity of bullying lies not only in its immediate harm but also in its enduring repercussions on an individual's long-term psychological and social well-being. Fundamentally, bullying is defined by an inherent power imbalance between the aggressor and the victim, wherein the perpetrator leverages physical strength or social status to inflict harm. Empirical evidence suggests that children and adolescents subjected to bullying frequently experience compromised mental health, reduced self-confidence, and significant academic decline (Espelage & Swearer, 2003).

The multifaceted nature of bullying—encompassing verbal, physical, social, and electronic dimensions—necessitates a complex intervention approach. Physical bullying remains the most overt manifestation, involving direct physical assault such as hitting, pushing, or the threat of force (Olweus, 1993). In contrast, verbal bullying utilizes insults, derogatory labeling, and persistent mockery to disparage the victim and erode their self-concept (Mental Health Center Kids, 2025).

Conversely, social bullying—often referred to as relational aggression—occurs when individuals are intentionally excluded from social groups or subjected to the dissemination of rumors designed to foster isolation. In recent years, cyberbullying has emerged as a distinct and formidable modern manifestation of aggression, where perpetrators utilize social media, email, and instant messaging to victimize others (Kowalski et al., 2014). This digital aggression encompasses various modalities, including verbal cyberbullying, which may be explicit, direct, or implicit, as well as non-verbal cyberbullying,

manifested through derogatory gestures, images, or multimedia content (Al-zaqebah et al., 2023).

Cyberbullying is uniquely characterized by the perpetrator's constant access to the victim, the capacity for anonymity (identity concealment), and the viral velocity of offensive content. These factors collectively exacerbate the psychological trauma experienced by the victim (Smith et al., 2019). Consequently, this phenomenon is receiving heightened scholarly attention, particularly concerning informal social media platforms like X (formerly Twitter), where content is rapidly disseminated across global networks (Al-Shannaq et al., 2025).

As one of the most pressing challenges of the digital era, recent data from the World Health Organization (WHO, 2024) indicates that one in six school-aged individuals is exposed to cyber-victimization. It serves as a significant deterrent to the psychological and social quality of life, particularly for vulnerable populations such as adolescents and individuals with disabilities. Empirical studies link cyberbullying to increased prevalence of anxiety, depression, and chronic stress (Gómez-Galán et al., 2025). Furthermore, it precipitates profound social withdrawal and a deterioration in interpersonal relationships, ultimately undermining the overall well-being and quality of life of the victims (Li et al., 2024).

Bullying against adolescents with disabilities is a disturbing social phenomenon, as individuals with disabilities are exposed to multiple forms of abuse, whether verbal, physical, or psychological, because of their physical differences or mentality. Whereas children with disabilities are more vulnerable to bullying compared to their peers without disabilities, which negatively affects their mental health and their academic achievement (Rose et al., 2019).

Al-Qarni (2022) indicated in her study aimed to identify the reality of bullying of students with intellectual disabilities in public schools from the perspective of their teachers in the Al-Baha region. And to identify statistically significant differences in their assessment of the level of

bullying according to the following variables: gender, teaching experience, academic degree, and academic stage. A questionnaire consisting of (37) statements was designed, revealing the forms, causes, and effects of bullying. The questionnaire was distributed to (97) male and female intellectual education teachers who work in public schools with integrated classes. The results of the study revealed an average level of bullying of students with intellectual disabilities from the perspective of their teachers. There were statistically significant differences in the level of bullying according to the gender variable, in favor of males, and there were statistically significant differences in the level of bullying according to the teaching experience variable, in favor of those with 5 years of experience or less. It also showed no statistically significant differences in the study sample's responses to the effects of bullying, attributable to the variables of gender and teaching experience. There were also no statistically significant differences regarding the level of bullying among the study sample's responses based on the variables of academic degree and academic level.

The etiology of bullying against individuals with disabilities is multifaceted, primarily driven by pervasive negative stereotypes within society. These individuals are frequently perceived as inherently vulnerable or less capable, which renders them more susceptible to targeted aggression. Furthermore, a systemic lack of social awareness and public education regarding the rights of people with disabilities contributes significantly to the reinforcement of these maladaptive behaviors (Puhl & King, 2013).

In this context, Abu Deif (2022) investigated the relationship between cyberbullying and psychological adjustment among deaf students. The study sample comprised 43 students from the Al-Amal Institute for the Deaf in Assiut Governorate, aged between 9 and 12 years. The findings demonstrated a statistically significant negative correlation between bullying victimization and psychological adjustment among the sampled students.

Similarly, Al-Anzi (2022) explored the nexus between bullying and psycho-social adjustment among secondary school students with physical disabilities in Riyadh. Utilizing a sample of 44 male and female students, the study revealed a statistically significant inverse relationship between exposure to bullying and the participants' level of psychological and social adjustment. Psychological adjustment serves as a fundamental process in enhancing the mental health of individuals with disabilities. It is defined as the individual's capacity to effectively cope with the stressors and systemic challenges inherent to their disability, such as bullying and social discrimination (Livneh & Antonak, 2012).

Hamza (2021) conducted an empirical study to examine the impact of cyberbullying on the psychological adjustment of individuals with hearing impairments. The study sample comprised 60 male and female students with hearing disabilities. The findings demonstrated that higher frequencies of cyberbullying were significantly correlated with lower levels of psychological adjustment. In this context, psychological adjustment refers to an individual's ability to navigate the psychological stressors and challenges associated with their disability healthily and adaptively. Individuals who possess robust coping mechanisms and strong social support systems are better equipped to psychologically adapt to adverse circumstances, thereby mitigating feelings of social isolation and anxiety (Smart, 2010).

Similarly, Al-Saadi, & Al-Khazaalah, (2018) investigated the prevalence of school-based bullying and its relationship to psycho-social adjustment among students with learning disabilities in the Sultanate of Oman. The study involved a substantial sample of 246 male and female students. The results indicated that both the level of school bullying and the level of psychological and social adjustment were moderate (average) among students with learning disabilities. Furthermore, the analysis revealed a statistically significant difference in psychological adjustment based on the gender variable, with results favoring male students.

Hamza (2020) investigated the relationship between cyberbullying and selected psycho-social variables among secondary school students with physical disabilities. Utilizing a descriptive correlational approach, the researcher surveyed a randomly selected sample of 86 male and female students. The findings indicated a relatively high prevalence of cyberbullying among the participants. Furthermore, the results revealed a statistically significant positive correlation between exposure to cyberbullying and both anxiety and depression. Conversely, a negative correlation was identified between cyberbullying and the students' level of social adjustment. Psychological adjustment is conceptualized as the process through which an individual regulates emotional, cognitive, and behavioral responses to effectively navigate life stressors and diverse situational demands. This adaptive process is a cornerstone of mental health, as it facilitates the ability to cope with the idiosyncratic changes and challenges of daily life. This is particularly salient for individuals with disabilities, given the multifaceted obstacles they encounter (Lazarus & Folkman, 1984). Effective psychological adjustment is contingent upon several determinants, including the deployment of adaptive coping strategies, the availability of robust social support systems, and the possession of resilient personality traits, such as optimism and psychological hardiness (Taylor & Stanton, 2017).

Study Problem

Cyberbullying has emerged as a burgeoning negative phenomenon within contemporary societies, catalyzed by the ubiquitous proliferation of social media platforms and rapid technological advancements. Among the most vulnerable cohorts to this form of harassment are adolescents with disabilities. This demographic frequently encounters targeted victimization, including online harassment and ridicule, predicated on their physical, sensory, or intellectual impairments.

Exposure to such deleterious online behaviors can precipitate severe psychological and social repercussions, significantly undermining the

ability of these adolescents to achieve self-adjustment and social integration. Informed by direct engagement with this group and observations of the profound impact of cyberbullying, the necessity of the current study became evident. This is further reinforced by scholarly recommendations—such as those by Abu Deif (2022) and Hamza (2021)—which emphasize the critical need to investigate the impact of cyberbullying on adolescents with disabilities and its intricate correlation with their psychological adjustment."

Study Questions

1. What is the prevalent level of cyberbullying experienced by adolescents with disabilities in Jordan?
2. What is the level of psychological adjustment among adolescents with disabilities in Jordan?
3. Are there statistically significant differences ($\alpha = 0.05$) in the level of cyberbullying experienced by adolescents with disabilities in Jordan attributable to gender, age, or type of disability?
4. Are there statistically significant differences ($\alpha = 0.05$) in the level of psychological adjustment among adolescents with disabilities in Jordan attributable to gender, age, or type of disability?
5. Is there a statistically significant correlation at the ($\alpha = 0.05$) level between cyberbullying and psychological adjustment among adolescents with disabilities?

Study Objectives

The current study aims to achieve the following:

- To identify the levels of cyberbullying and psychological adjustment among adolescents with disabilities.
- To examine the potential correlation between cyberbullying and psychological adjustment within this demographic.

- To investigate the existence of significant differences in both cyberbullying and psychological adjustment among adolescents with disabilities in Jordan based on the variables of gender, age, and type of disability.

Significance of the Study

The significance of this study lies in its investigation of a contemporary and high-priority issue, specifically targeting adolescents with disabilities in Jordan. Its importance is further underscored by exploring the correlation between cyberbullying and psychological adjustment, a vital area of concern for this vulnerable demographic. Moreover, the study is distinguished by its comprehensive scope, encompassing diverse disability categories—including hearing, visual, and physical impairments. It uniquely integrates multiple moderating variables, such as the type of disability, gender, and age, providing a multi-dimensional analysis of the phenomenon.

Conceptual and Operational Definitions

- Cyberbullying: Defined as a deliberate and repetitive aggressive behavior executed through technological mediums, such as the Internet or mobile phones. It aims to inflict psychological or social harm upon the victim through threats, ridicule, social exclusion, or the dissemination of rumors and offensive imagery (Hamza, 2020, p. 13). In this study, it is operationally defined as the total score obtained by the participants on the Cyberbullying Scale developed for the purposes of this research.

-Adolescents with Disabilities: Refers to individuals with disabilities or dysfunctions in physical, sensory, intellectual, or psychological capacities, whether permanent or temporary. Such conditions may hinder their interaction with daily life requirements and limit their full and effective participation in society on an equal basis with others. This definition encompasses various types of disabilities (physical, auditory, visual, intellectual, and psychological) for individuals aged 12–22 who are undergoing the

developmental stage of adolescence (United Nations, 2006). "According to Sawyer et al. (2018) in *The Lancet Child & Adolescent Health*, defining adolescence as 10–19 years is biologically and socially restrictive. Chronologically expanding this phase to 10–24 years aligns policy and clinical frameworks with contemporary realities: earlier pubertal onset, prolonged neurobiological development (particularly prefrontal cortex maturation), and delayed transitions into traditional adult socioeconomic roles." The Operational Definition: They are the adolescents with hearing, visual, and physical disabilities who responded to the instruments and scales administered in this study.

- Psychological Adjustment: Radwan (2021) defines it as a dynamic and continuous process through which an individual achieves equilibrium between external environmental demands and internal needs and motives. This process fosters a sense of satisfaction and psychological stability, enabling the individual to cope with various life pressures and changes. It is operationally defined as the total score obtained by the study sample members on the Psychological Adjustment Scale.

Study Limitations and Scope

Study Scope

The study was confined to adolescents aged 12–22 years with visual, hearing, and physical disabilities. Participants were recruited from three special education centers (Khotawat Center, Oxygen Center, and Analytical Center) located in Amman, Jordan. Data collection was conducted during August 2025.

Study Limitations

Several limitations should be considered when interpreting the findings of this study.

-First, the study was conducted in three special education centers located in Amman, Jordan, which may limit the generalizability of the findings to adolescents with disabilities in other regions or educational settings.

-Second, the sample was restricted to adolescents with visual, hearing, and physical

disabilities aged 12–22 years; therefore, the findings may not be generalizable to individuals with other disability categories or different age groups.

-Third, the study employed a cross-sectional correlational design, which precludes conclusions regarding causal relationships among the study variables.

-Fourth, the study relied on self-report measures, which may be influenced by response and social desirability biases despite standardized administration procedures.

-Finally, the relatively limited sample size and the variability in the type and severity of disabilities may have affected the statistical power and the interpretation of the findings. Future studies are encouraged to include larger and more diverse samples, adopt longitudinal or experimental designs, and examine additional variables that may influence psychological adjustment among adolescents with disabilities.

Study Methodology

The study employed a Descriptive Correlational Design, as it is the most appropriate methodology for achieving the research objectives and examining the relationships between the specified variables.

Population and Sample

Study Population: The original population consists of all adolescents with visual, physical, and hearing disabilities, aged 12–22 years, enrolled in special education centers in Amman, totaling approximately (500) individuals.

Study Sample: A convenience sample of (100) adolescents with hearing, visual, and physical disabilities

recruited based on the age groups available at three specialized institutions in Amman: the Khotawat Center, the Oxygen Center, and the Analytical Center. The participants' ages ranged from 12 to 22 years, a chronological span that falls within the contemporary conceptualization of extended adolescence. (Sawyer et al. 2018), noted that the nature of the sample, the difficulty in communicating with us, and their ability to

handle the scale, in addition to the fact that a large group of them expressed their unwillingness to participate in the study.

To ensure data integrity and accessibility, a dedicated workshop was conducted for the target group. A sign language interpreter was provided for deaf participants, and assistive reading services were made available for visually disabled participants to clarify the response mechanism for the two scales. Following the workshop, ten participants expressed their lack of desire to continue; consequently, they were excluded. The final study sample comprised (90) adolescents.

Ethical Considerations: Participants were informed of their right to withdraw from the study at any time without penalty or adverse consequences. Participants were assured that they were not required to provide their names or any identifying information to protect their privacy and ensure anonymity. Participants were assured that all information provided would be treated with strict confidentiality and used solely for scientific research purposes. And Parental consent was obtained from the participants.

Study tools

1. **Cyberbullying Scale:** To assess cyberbullying among adolescents with disabilities, the researchers developed a dedicated scale. The development process involved a comprehensive review of theoretical literature and previous studies—notably Al-Qarni (2022) and Li et al. (2024)—focusing on the manifestations and patterns of cyberbullying targeting this specific demographic. The final version of the scale consists of (19) items that address various forms of digital aggression directed at individuals with disabilities.

Validity of the Cyberbullying Scale

- **A. Content Validity:** Upon drafting the initial version of the scale, it was presented to a panel of 12 expert referees specializing in psychological counseling from various Jordanian universities and professional institutions. The referees were tasked with evaluating the items' relevance to the research objectives, linguistic clarity, and suitability for

the target population. All expert feedback and suggestions were incorporated to refine the instrument.

- **B. Construct Validity:** To establish indicators of construct validity, item-total correlation coefficients were calculated using a pilot sample of (30) participants from outside the main study sample. The correlation coefficients ranged between (0.36 and 0.88). Given that all coefficients were statistically significant and within acceptable academic thresholds, all 19 items were retained.

Reliability of the Cyberbullying Scale

The reliability of the instrument was verified using two distinct methods:

- **Test-Retest Method:** The scale was administered and then re-administered after a two-week interval to a pilot group of (30) participants (external to the primary sample). The Pearson correlation coefficient between the two administrations reached (0.91), indicating high temporal stability.
- **Internal Consistency:** The reliability was further confirmed using Cronbach's Alpha formula, yielding a coefficient of (0.82).

Both values were deemed appropriate and robust for the requirements of the current study.

Psychological adjustment scale

The researchers developed the Psychological Adjustment Scale based on Lazarus's (1976) Theory of Adjustment, which posits that psychological adjustment is a continuous effort by the individual to achieve equilibrium with environmental and situational demands through adaptation and change. The scale was further refined by reviewing previous literature, such as Jibril (2002) and Radwan (2021). The final instrument encompasses four primary dimensions: Physical Adjustment, Personal Adjustment, Social Adjustment, and Family Adjustment.

Validity of the Psychological Adjustment Scale

- **A. Content Validity:** The preliminary version of the scale was presented to a panel of 12 expert referees specializing in psychological counseling from Jordanian universities and specialized clinical environments. The experts evaluated the items' relevance to the research objectives, linguistic precision, and conceptual alignment with the study domains. All expert recommendations were meticulously addressed to finalize the instrument.

- **B. Construct Validity:** To establish construct validity indicators, the scale was administered to a pilot sample of (30) individuals with disabilities from the study population (excluding the main sample). Correlation coefficients were calculated between each item and its respective dimension, between the dimensions themselves, and between each dimension and the total score. The item-total correlation coefficients ranged from (0.52 to 0.85), while item-dimension correlations ranged from (0.59 to 0.89). Since all coefficients were statistically significant and within scientifically acceptable ranges, no items were deleted, confirming a robust degree of construct validity.

Reliability of the Psychological Adjustment Scale

The reliability of the instrument was established using two methods:

- **Test-Retest Method:** The scale was administered and re-administered after a two-week interval to the pilot group of (30) participants. The Pearson correlation coefficients for the dimensions (stability coefficients) ranged between (0.81 and 0.90), demonstrating high temporal stability.
- **Internal Consistency:** Using Cronbach's Alpha formula, the internal consistency coefficients for the dimensions ranged between (0.71 and 0.86).

These values indicate a high level of reliability, rendering the scale suitable and scientifically sound for the purposes of the current study.

Constructive validity and confirmatory factor analysis: The Confirmatory Factor Analysis (CFA) method was used. Within the

framework of Structural Equation Modeling (SEM) the aim of verifying the consistency of, the items with the theoretical dimensions to which they belong, and to measure the strength of the relationship of each item to the underlying factor associated with it.

The study adopted a value of (0.50) as the minimum threshold for accepting standardized factor loadings. Values that are equal to or exceed this threshold indicate that the item adequately represents the underlying factor while values lower than this indicate a weak contribution of the item to measuring the dimension, which may necessitate its deletion or reformulation. Model Fit Indices were also used to judge the suitability of the assumed

model for the data, as the fact that most of the indices fall within acceptable statistical limits is evidence of the quality of the structural model and its applicability.

The factorial model of the adaptation variable:

Confirmatory factor analysis was applied to the adaptation variable to verify the extent to which the proposed theoretical model matched the actual data, as well as to ensure the validity of the items in representing the underlying dimensions of the variable. The model included four main dimensions: physical adjustment, personal adjustment, social adjustment, and family adjustment. The results of the analysis, shown in Figure (1) showed that all items had statistically acceptable standard loads, as the standard load values ranged between (0.620-0.992), which are values that exceed the minimum acceptable limit of (0.50), which indicates that the items represent the latent dimensions of the adaptation variable well, and supports the availability of construct validity for the scale.

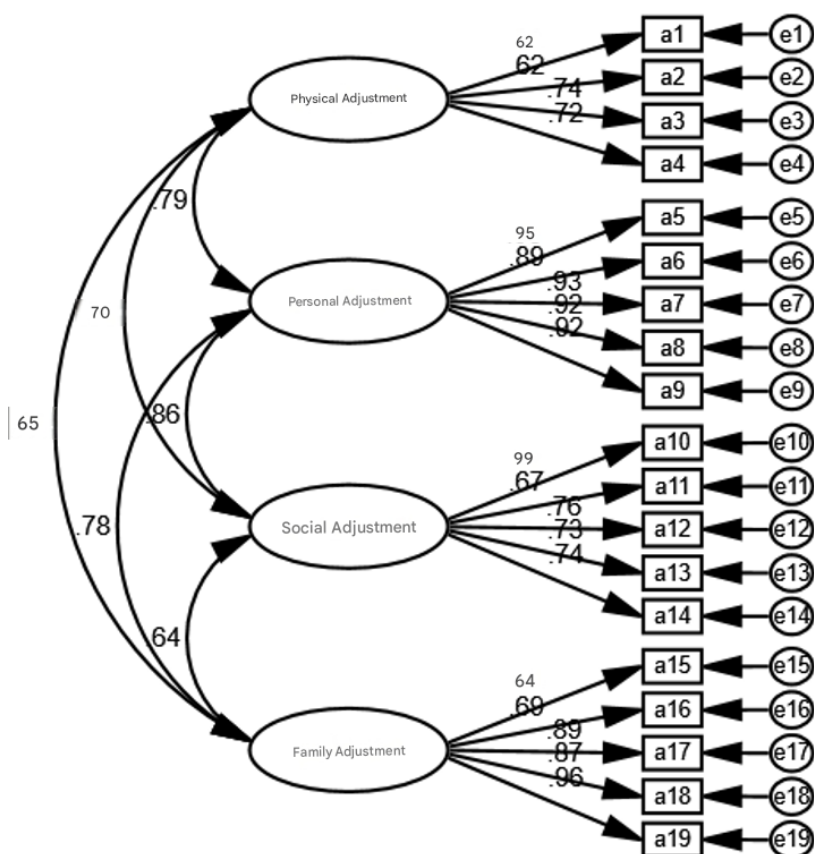


Figure1. The confirmatory factor model of the adaptation variable

Table 1. Standardized saturations for the items of the adaptation variable

latent factor	Paragraph number	Standard saturation
Adaptation Al-Jasmi	1	620
	2	621
	3	738
	4	722
Adaptation Personal	5	948
	6	894
	7	933
	8	925
	9	922
Adaptation social	10	992
	11	670
	12	757
	13	732
	14	739
Adaptation family	15	640
	16	694
	17	891
	18	873
	19	956

Regarding the good fit indicators for the factorial model of the adaptation variable, the results came as shown in the table(2).

Table 2. Indicators of good fit to the factorial model of the adaptation variable

Index	Value	Typical value	comments
CMIN/DF	3.595	< 5	Within acceptable limits and indicates good conformity to the model
RMSEA	0.068	< 0.08	A low value indicates a very good fit for the .model
GFI	0.956	> 0.90	This indicates a good level of conformity .quality
AGFI	0.822	≥ 0.80	Very close to the acceptable limit and considered within the statistically acceptable .level
CFI	0.987	> 0.90	.It indicates an excellent match to the model

Regarding the goodness of fit indicators, the results in

Table 2 show that the model has a good degree of fit with the study data. The standardized chi-square index(CMIN/DF = 3.595) is less than the acceptable threshold of (5), indicating a good fit between the model and the data. The mean $\sqrt{}$ (approximate error) index was also

found to be [value missing]. (RMSEA = 0.068) , a value that falls within the statistically acceptable limits (less than 0.08), indicating a good fit for the model.

The results also showed that the Conformity Quality Index(GFI) value (0.956) exceeded the

acceptable limit of (0.90), reflecting a high level of conformity quality. The adjusted Conformity Quality Index value also reached [a certain value]. (AGFI = 0.822) a value , within statistically acceptable limits, supports the suitability of the proposed model. Furthermore, the comparative conformance index was recorded. (CFI = 0.987) which is a , high value indicating that the model has an excellent degree of fit. ,Based on these results it can be said that the factorial model of the adaptation variable achieved good levels of construct validity, as the items showed high and statistically acceptable norm loads, and the goodness of fit indicators showed good agreement between the theoretical model and the field data, which confirms the validity of the scale for use in the current study and the possibility of relying on it in conducting subsequent statistical analyses.

Factorial model of the bullying variable:

Confirmatory factor analysis was applied to the bullying variable in order to verify the extent to which the proposed theoretical model matches the actual data of the study, in addition to examining the extent to which the instrument items are related to the underlying factor they represent. The results of the analysis, as shown in Figure (3), showed that all items achieved statistically acceptable standard loads, as the standard load values ranged between (0.577–0.951), all of which are ,higher than the approved minimum of (0.50) which indicates the strength of the correlation of the items with the underlying factor of the bullying variable, and their ability to represent it appropriately, which supports the availability of construct validity of the instrument.

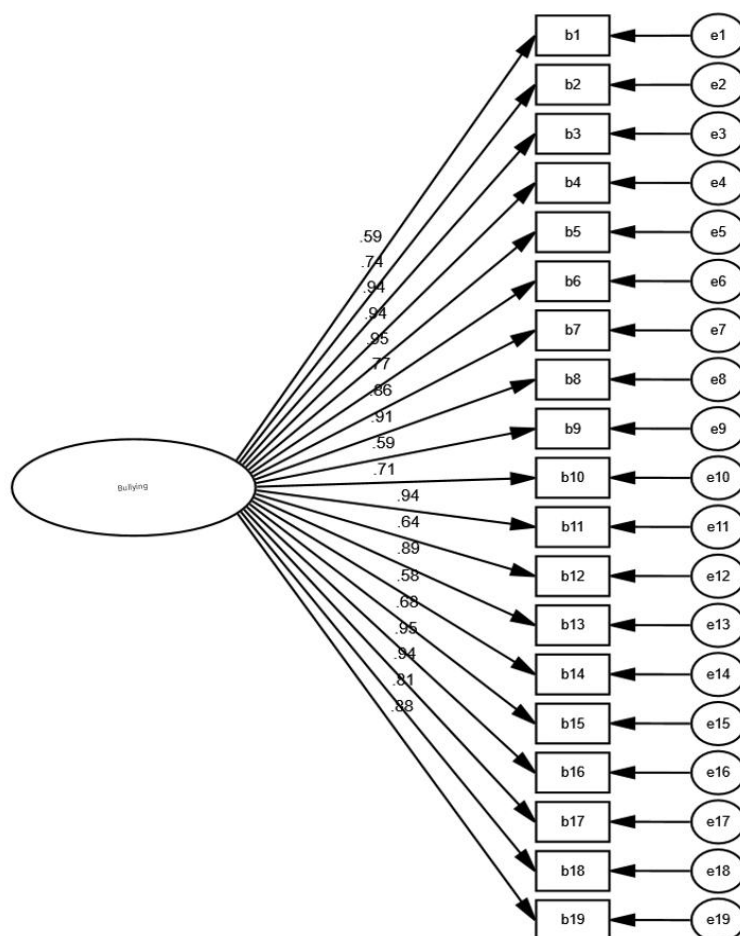


Figure 2. The confirmatory factor model for the bullying variable

Table 3. Standardized saturations for items of the bullying variable

latent factor	Paragraph number	Standard saturation
bullying	1	587
	2	742
	3	936
	4	943
	5	951
	6	768
	7	855
	8	914
	9	.590
	10	709
	11	941
	12	643
	13	893
	14	577
	15	678
	16	949
	17	936
	18	810
	19	881

Regarding the model fit indicators, the values were as shown in the table(4).

Table 4. Good fit indicators for the factor model of the bullying variable

Index	Value	Typical value	comments
CMIN/DF	3.584	< 5	Within acceptable limits and indicates a good fit for the model
RMSEA	0.069	< 0.08	A low value indicates good model .conformity quality
GFI	0.930	> 0.90	This indicates a good level of .conformity quality
AGFI	0.881	≥ 0.80	It falls within the acceptable level .and is close to the ideal limit
CFI	0.916	> 0.90	It indicates a very good match to .the model

Regarding the model's goodness of fit, the results showed that the model demonstrated a good degree of fit to the study data. The standardized chi-square index(CMIN/DF = 3.584) ,was below the acceptable threshold of 5 indicating a good fit. Similarly, the approximate root mean square error index (RMSEA = 0.069) was within statistically acceptable limits, further indicating a good fit.

(GFI = 0.930) was also recorded , exceeding the acceptable threshold of 0.90, reflecting a good level of fit quality. The Adjusted Quality of Fit Index(AGFI = 0.881) was within statistically acceptable limits, indicating a good fit for the model. The Comparative Fit Index (CFI = 0.916) ,was also higher than 0.90 indicating a very good fit for the model.

Based on the previous results, it can be said that the factorial model for the bullying variable

achieved good levels of construct validity, as the items showed high and statistically acceptable standard loads, and the goodness of fit indicators showed a suitable agreement between the theoretical model and the field data, which confirms the validity of the model and its adoption in subsequent statistical analyses without the need to make substantial modifications to it.

Study Results and Discussion

The first Question: What is the prevalent level of cyberbullying experienced by adolescents with disabilities in Jordan?

To address this question, descriptive statistics—specifically means and standard deviations—were calculated to determine the level of cyberbullying among adolescents with disabilities in Jordan. The results are summarized in the table below:

Table 5. Means and standard deviations of the level of cyberbullying against adolescents with disabilities in Jordan, arranged in descending order according to the arithmetic means

Rank	The number	Paragraphs	arithmetic mean	standard deviation	Level
1	9	I am excluded from social groups because of my disability	2.84	1.28	middle
2	15	Some people on social media express the inability of adolescents with disabilities .to achieve	2.77	1.28	middle
3	14	Some people question my ability to learn because I have a disability	2.67	1.32	middle
4	12	Some share content that portrays adolescents with disabilities as helpless	2.61	1.47	middle
5	1	I receive messages making fun of my disability	2.60	1.13	middle
6	2	I receive belittling comments because of my disability	2.33	1.24	low
7	10	Some people take my opinions for granted because I am disabled	2.22	1.25	low
8	6	Some people post sarcastic videos about .my disability	2.20	1.10	low
9	8	Some people abuse me because of my .electronic disability	2.13	1.27	low
10	18	I was emotionally blackmailed because of my disability by someone I met on social media	2.07	1.19	low
11	5	There are malicious rumors about me on social media	2.02	1.15	low
12	11	Some people comment with sarcastic .emojis	2.01	1.15	low
13	7	I get funny jokes about my disability	1.99	1.11	low
14	16	Some people belittle my achievements with sarcastic comments on social media	1.94	1.12	low
15	3	I am being threatened with publishing my private information because of my disability	1.93	1.05	low

Rank	The number	Paragraphs	arithmetic mean	standard deviation	Level
16	17	Some people post things about my disability on social media for their own personal gain	1.89	1.14	low
17	4	Some people are blackmailing me financially in exchange for not publishing my private information	1.87	1.03	low
18	13	My pictures are being posted with comments making fun of my disability	1.86	1.03	low
18	19	I was financially because of my disability by someone I met on social media	1.86	1.18	low
Bullying as a whole			2.20	0.97	low

The results in Table (5) indicated that the level of cyberbullying among adolescents with disabilities (aged 12–22 years) in Jordan was at a low level, with a mean of 2.20 and a standard deviation of 0.97. This result may be attributed to the societal aspect, where national campaigns, as well as school and media awareness programs, have contributed to raising awareness among students and parents regarding the dangers of cyberbullying and ways to confront it, which in turn has reflected in a decline in aggressive practices across digital platforms. The prevailing cultural and social values in Jordanian society, which promote the principles of solidarity and respect, also played a preventive role in reducing abusive behaviors toward people with disabilities. Additionally, the role of the family is highly significant, as many families with children with disabilities exercise greater supervision over internet use, thereby reducing the chances of them being targeted online. Furthermore, although the adolescents in the study sample (with visual, hearing, and physical disabilities) suffer from an impairment in one of their senses or in movement, they enjoy high mental capabilities that help them manage their affairs and control their problems effectively. This contributes to a high degree of psychological adaptation among them. They are also able to achieve in many different fields such as painting, poetry, and story writing, and they participate in many activities designed for them that accommodate their disabilities. All the above

allows them to feel a high degree of adaptation, supported by the presence of numerous clubs and centers that enhance and develop their talents, such as the Prince Ali Club for the Deaf, the Al-Mustaqbal Club for Physical Disabilities, and the Al-Shula Club for Visual Disabilities. Moreover, the presence of successful role models in Jordanian society with various disabilities who achieve outstanding accomplishments and hold prestigious positions in political, sports, social, and scientific fields further enhances this positive environment. Added to this is the contribution of educational inclusion programs in Jordanian schools to improving relationships among students and promoting a culture of acceptance and tolerance, which reflects positively on their interactions in the virtual environment. Furthermore, the impact of Jordanian legislation and laws, such as the Cybercrime Law, has limited bullying behaviors by criminalizing online abuse and imposing deterrent penalties. This reflects the success of national and educational policies in providing a safer school and community environment, alongside the active role of the family and cultural values in enhancing the psychological and social protection of people with disabilities.

Regarding the item "I am excluded from social events because of my disability," which was scored at a moderate level, this can be interpreted by the fear of community or family members for individuals with disabilities regarding negative

remarks or the look of pity from others, or for fear of making them feel different or deficient. This can also be interpreted considering the social stigma that some family members may feel as a result of having a child with a disability. Adolescents generally have a strong interest in peer groups and social attractiveness; however, for adolescents with disabilities, this attractiveness and popularity may decrease, thereby limiting their possibilities of forming friendships with their peers. Likewise, a moderate degree of cyberbullying appeared in the two items discussing questioning the learning ability of people with disabilities and constantly referring to their disability. This can be explained by the misconceptions, information, and ideas held by some community and family members who falsely associate physical or sensory disabilities with deficits in mental or cognitive capabilities. This stereotype is incorrect, as individuals with visual, hearing, or physical disabilities may enjoy exceptionally high cognitive capabilities, given that their challenge is strictly physical or sensory and unrelated to mental capacity. On the other hand, the degree of cyberbullying was significantly low regarding the two items related to publishing pictures of people with disabilities to mock them or blackmailing them. This can be attributed to the culture and awareness in Jordanian society that promote care and respect

for individuals with disabilities. It is also deeply rooted in social values that urge respecting others and treating all people as equals, as well as upbringing methods that prioritize human dignity regardless of whether an individual has a disability or not.

The results of the current study are consistent with the study of Hamzah (2021), which demonstrated that the level of cyberbullying directed toward individuals with hearing disabilities was low. Conversely, the findings of the current study differ from those of Hamzah (2020), which indicated that the rate of cyberbullying among students with physical disabilities was relatively high. The current results also diverge from the study of Al-Saadi, & Al-Khazaalah, (2018) which reported that the level of cyberbullying among adolescents with disabilities was moderate.

The Second Question: What is the level of psychological adaptation among adolescents with disabilities in Jordan?

To address this question, arithmetic means and standard deviations were calculated to determine the level of psychological adjustment among adolescents with disabilities in Jordan. The table below illustrates these findings:

Table 6. Means and Standard Deviations for the Level of Psychological Adjustment Among Adolescents with Disabilities in Jordan, Ranked in Descending Order According to the Means.

Rank	The number	field	arithmetic mean	standard deviation	Level
1	4	Family adjustment	4.37	0.70	high
2	2	Personal adjustment	3.98	1.03	high
3	1	Physical adjustment	3.84	0.81	high
4	3	Social adjustment	3.77	0.91	high
adjustment as a whole			4.00	0.76	high

The results of Table (6) showed that the level of psychological adjustment among adolescents with disabilities (aged 12–22) in Jordan was high, with an arithmetic mean of 4.00 and a standard

deviation of 0.76. This result may be attributed to factors such as family and social support, which enhance feelings of security and belonging to the family, special education programs, and

school integration, which help provide a suitable educational and learning environment. This includes the provision of technological means, such as talking computers for the visually impaired, computerized and visual educational materials suitable for the hearing impaired, and electronic wheelchairs. This is in addition to cultural and social values that include patience, contentment, and solidarity. Governmental and non-governmental initiatives have also improved the image of adolescents with disabilities in society, in addition to the role of adolescence, which motivates individuals to develop self-adjustment strategies and self-affirmation. The results of the current study are consistent with Al-Saadi, & Al-Khazaalah, (2018) study, which indicated that the level of adjustment was average.

The third Question: Are there statistically significant differences ($\alpha=0.05$) in the level of cyberbullying experienced by adolescents with disabilities in Jordan attributable to the variables of gender, age, and type of disability?

To answer this question, the means and standard deviations of the level of cyberbullying against adolescents with disabilities in Jordan were extracted according to the variables of gender, age, and type of disability. The table below illustrates this. Table No. (7) shows the arithmetic means and standard deviations of the level of cyberbullying against adolescents with disabilities in Jordan according to the variables of gender, age, and type of disability.

Table 7. Means and standard deviations of the level of cyberbullying against adolescents with disabilities in Jordan according to the variables of gender, age, and type of disability.

		Mean	Standard Deviation	Number	95% confidence interval for the arithmetic mean	
					Lower Bond	Upper Bond
Gender	male	2.29	.917	51	2.03	2.55
	female	2.09	1.032	39	1.75	2.42
Age	12-15	2.43	.951	37	2.11	2.75
	16-18	2.13	1.186	15	1.47	2.79
	19-22	2.00	.866	38	1.72	2.29
Type of disability	Visual	2.01	.694	35	1.77	2.24
	physical	2.01	.804	37	1.74	2.27
	Hearing	2.98	1.332	18	2.32	3.64

Table (7) illustrates an apparent variance in the means and standard deviations of the level of cyberbullying directed toward individuals with disabilities in Jordan, attributed to the different categories of the variables: gender, age, and type

of disability. To determine the statistical significance of the differences between these arithmetic means, a Three-way Analysis of Variance (Three-way ANOVA) was employed, as shown in Table (8).

Table 8. Three-way analysis of variance for the effect of gender, age, and type of disability on the level of cyberbullying against adolescents with disabilities in Jordan

Source of variance	sum of squares	degrees of freedom	mean squares	value of F	Statistical significance	Impact size
Gender	.632	1	.632	.774	.382	.009
Age	.443	2	.222	.271	.763	.006
Type of Disability	11.184	2	5.592	6.848	.002	.140
Error	68,592	84	.817			
Corrected Total	83,456	89				

Table (8) presents the results of the three-way analysis of variance (ANOVA) examining the effects of gender, age, and type of disability on the level of cyberbullying experienced by adolescents with disabilities in Jordan. The findings revealed no statistically significant differences attributable to gender, $F(1, 84) = 0.774$, $p = .382$, with a small effect size ($\eta^2 = .009$). Although the mean score for males ($M = 2.29$, $SD = 0.917$) was slightly higher than that for females ($M = 2.09$, $SD = 1.032$), this difference did not reach statistical significance. Similarly, no statistically significant differences were found according to age, $F(2, 84) = 0.271$, $p = .763$, and the effect size was very small ($\eta^2 = .006$). Descriptively, adolescents aged 12–15 years reported the highest level of cyberbullying ($M = 2.43$, $SD = 0.951$), followed by those aged 16–18 years ($M = 2.13$, $SD = 1.186$), whereas participants aged 19–22 years reported the lowest mean score ($M = 2.00$, $SD = 0.866$). However, these differences were not statistically significant.

In contrast, statistically significant differences were found according to the type of disability, $F(2, 84) = 6.848$, $p = .002$, with a moderate-to-large effect size ($\eta^2 = .140$). Participants with hearing impairments reported substantially higher levels of cyberbullying ($M = 2.98$, $SD = 1.332$) compared with those with visual impairments ($M = 2.01$, $SD = 0.694$) and physical disabilities ($M = 2.01$, $SD = 0.804$).

To identify the source of these differences, Scheffé post-hoc comparisons were conducted, as presented in Table (9). The results indicated statistically significant differences between adolescents with hearing impairments and those with visual and physical disabilities, with mean differences of 0.97 in both comparisons ($p < .05$). No statistically significant differences were observed between the visual and physical disability groups.

Table 9. Post-test comparisons using the Scheffe method for the effect of the type of disability on the level of cyberbullying against adolescents with disabilities in Jordan

	arithmetic mean	Visual	physical	Hearing
Visual	2.01			
physical	2.01	0.00		
Hearing	2.98	0.97 *	0.97 *	

* Significant at the significance level ($\alpha = 0.05$).

These findings suggest that the experience of cyberbullying among adolescents with disabilities is influenced more strongly by the

type of disability than by demographic characteristics such as gender or age. The higher levels reported among adolescents with hearing impairments may reflect communication barriers, reduced opportunities for immediate self-defense in online interactions, and increased vulnerability to exclusionary or stigmatizing behaviors within digital environments.

The absence of gender- and age-related differences indicates that cyberbullying behaviors may primarily target disability status itself rather than personal demographic characteristics. This finding contrasts with the results reported by Al-Saadi, & Al-Khazaalah, (2018) who found significantly higher levels of cyberbullying among male adolescents with disabilities. The researchers attribute the lack of differences in cyberbullying against adolescents with disabilities based on gender or age to the fact that bullies typically direct their bullying at the disability itself, regardless of the age or gender of the person with the disability. Regarding the existence of differences in cyberbullying against adolescents with disabilities based on the type of disability, bullying against people with hearing impairments was greater. This can be attributed to the difficulty of communication between people with hearing impairments and their bullies. People with hearing

impairments may not be able to understand the signals, symbols, or gestures that imply bullying, and therefore cannot respond to them, or they may lack the ability to express themselves appropriately to respond to the bullying or defend themselves. In addition, many bullies may deliberately bully people with hearing disabilities because they are fully aware of the difficulty that people with hearing disabilities face in verbal expression, and therefore, bullies have a greater opportunity to bully people with hearing disabilities. The results of this study differ from the results of Al-Saadi, & Al-Khazaalah, study (2018), which revealed the existence of differences in cyberbullying of adolescents with disabilities, as bullying was greater for males.

The Fourth Question: Are there statistically significant differences at $\alpha = 0.05$ in the level of psychological adjustment among adolescents with disabilities in Jordan attributable to gender, age, or type of disability?

To answer this question, the arithmetic means and standard deviations of the level of psychological adjustment among adolescents with disabilities in Jordan were extracted according to the variables of gender, age, and type of disability. The table below shows this:

Table 10. Means and standard deviations of the level of psychological adjustment among adolescents with disabilities in Jordan according to the variables of gender, age, and type of disability

		Mean	Standard Deviation	number	95% confidence interval for the arithmetic mean	
					Lower Bond	Upper Bond
Gender	male	3.85	.590	51	3.68	4.01
	female	4.20	.904	39	3.91	4.49
Age	12-15	3.66	.726	37	3.42	3.90
	16-18	4.62	.153	15	4.53	4.70
	19-22	4.08	.766	38	3.83	4.34

Type of disability	Visual	4.25	.746	35	4.00	4.51
	physical	4.02	.590	37	3.83	4.22
	Hearing	3.46	.846	18	3.04	3.88

Table (10) shows an apparent variation in the arithmetic means and standard deviations of the level of psychological adjustment among adolescents with disabilities in Jordan due to the difference in the categories of variables of

gender, age, and type of disability. To show the significance of the statistical differences between the arithmetic means, the three-way variance analysis was used, Table (11)

Table 11. Three-way analysis of variance on the effect of gender, age, and type of disability on the level of psychological adjustment among adolescents with disabilities in Jordan

Source of variance	sum of squares	degrees of freedom	mean squares	value of F	Statistical significance	Effect size Partial Eta Squared
Gender	.555	1	.555	1.440	.234	.017
Age	9.731	2	4.866	12.621	.000	.231
Type of disability	7.098	2	3.549	9.206	.000	.180
Error	32.382	84	.386			
Corrected Total	51.169	89				

Table (11) shows the following:

- There were no statistically significant differences in psychological adjustment attributable to gender, $F(1, 84) = 1.440$, $p = .234$, with a small effect size ($\eta^2 = .017$). Although females obtained a higher mean score than males, this difference did not reach statistical significance.
- There were statistically significant differences attributable to age, $F(2, 84) = 12.621$, $p < .001$, with a large effect size ($\eta^2 = .231$). This finding indicates that age accounted for a substantial proportion of the variance in

psychological adjustment among adolescents with disabilities.

- There were statistically significant differences attributable to the type of disability, $F(2, 84) = 9.206$, $p < .001$, with a relatively large effect size ($\eta^2 = .180$), suggesting that disability type plays an important role in shaping psychological adjustment outcomes.

Because statistically significant differences were found for both age and type of disability, Scheffé post-hoc comparisons were conducted to identify the specific sources of these differences.

Table 12. Scheffe post-hoc comparisons of the effect of disability type on the level of psychological adjustment among adolescents with disabilities in Jordan

	arithmetic mean	Visual	physical	Hearing
Visual	4.25			
Physical	4.02	0.23		
Hearing	3.46	0.79 *	0.57 *	

* Significant at the significance level ($\alpha = 0.05$).

Table (12) demonstrates statistically significant differences ($\alpha = 0.05$) between adolescents with hearing disabilities and those with visual and physical disabilities. The differences favored adolescents with visual disabilities (mean difference = 0.79) and physical disabilities (mean difference = 0.57). No statistically significant differences were found between the visual and physical disability groups.

These findings suggest that adolescents with visual and physical disabilities exhibit higher

levels of psychological adjustment than their peers with hearing disabilities. This pattern may be explained by the relatively greater ease of verbal communication, social participation, and self-expression among individuals with visual and physical disabilities. In contrast, adolescents with hearing disabilities may encounter communication barriers arising from limited proficiency in sign language among members of the wider community, potentially restricting social interaction and reducing opportunities for psychological adjustment.

Table 13. Scheffe post-hoc comparisons of the effect of Age on the level of psychological adjustment among adolescents with disabilities in Jordan

Age	arithmetic mean	12-15	19-22	16-18
12-15	4.25			
19-22	4.02	.95(*)		
16-18	3.46	.42(*)	.53(*)	

* Significant at the significance level ($\alpha = 0.05$).

Table (13) presents the Scheffé post-hoc comparisons for age groups. The results indicate statistically significant differences between adolescents aged 12–15 years and those aged 19–22 years, in favor of the older age group, with a mean difference of 0.95. Significant differences were also found between the 12–15 and 16–18 age groups (mean difference = 0.42), as well as between the 19–22 and 16–18 age groups (mean difference = 0.53). Overall, the highest level of psychological adjustment was observed among adolescents aged 16–18 years ($M = 4.62$), followed by those aged 19–22 years ($M = 4.08$),

whereas adolescents aged 12–15 years demonstrated the lowest level of adjustment ($M = 3.66$).

The age-related differences may reflect developmental changes associated with adolescence and early adulthood. Older adolescents often possess greater emotional maturity, stronger coping mechanisms, and broader social experiences, all of which contribute positively to psychological adjustment. Furthermore, increased exposure to educational, social, and support services over

time may facilitate more effective adjustment to disability-related challenges.

The absence of statistically significant gender differences suggests that psychological adjustment among adolescents with disabilities is influenced more strongly by developmental and disability-related factors than by gender itself. Although females reported slightly higher levels of adjustment, both males and females may receive comparable levels of family support, educational opportunities, and social services within the Jordanian context, thereby reducing gender-based disparities.

The findings regarding disability type indicate that communication abilities and opportunities for social integration constitute important determinants of psychological adjustment. Adolescents with visual and physical disabilities may experience fewer barriers to interpersonal interaction and participation in community

activities than those with hearing disabilities, thereby enhancing their psychological well-being and adjustment.

Finally, the results concerning gender differ from those reported by Al-Saadi, & Al-Khazaalah, (2018) who found significantly higher levels of psychological adjustment among male adolescents with disabilities.

The fifth Question: Is there a statistically significant correlation at the ($\alpha = 0.05$) level between cyberbullying and psychological adjustment among adolescents with disabilities?

To answer this question, a Pearson correlation coefficient was extracted between cyberbullying of adolescents with disabilities and their psychological adjustment, as illustrated in Table (13).

Table 13. Pearson correlation coefficient for the relationship between cyberbullying of adolescents with disabilities and their psychological adjustment

		bullying As a whole
Physical adjustment	Correlation coefficient r	-.460(**)
	Statistical significance	.000
	number	90
Personal adjustment	Correlation coefficient r	-.536(**)
	Statistical significance	.000
	number	90
Social adjustment	Correlation coefficient r	-.394(**)
	Statistical significance	.000
	number	90
Family adjustment	Correlation coefficient r	-.598(**)
	Statistical significance	.000
	number	90
adjustment As a whole	Correlation coefficient r	-.565(**)
	Statistical significance	.000
	number	90

* Statistically significant at the significance level (0.05).

** Statistically significant at the significance level (0.01).

The results in Table (13) revealed a statistically significant negative correlation between

cyberbullying and psychological adjustment among adolescents with disabilities in Jordan.

This result may be attributed to the direct psychological impact of cyberbullying; exposure to victimization, ridicule, or exclusion in the digital space leads to increased levels of anxiety and depression and a sense of rejection, which in turn undermines the individual's ability to adapt to themselves and their environment. Furthermore, cyberbullying is often characterized by persistence and the ease of public dissemination, which reinforces feelings of helplessness and loss of control, thereby weakening psychological defense mechanisms.

Additionally, the specific nature of adolescents with disabilities plays a role, as they may face supplementary challenges in building self-esteem and social interaction. Consequently, exposure to cyberbullying exacerbates the difficulty of developing adjustment skills by doubling the sense of stigma or perceived difference. Their potentially higher reliance on social media as a primary means of interaction may render the impact of bullying more severe compared to their non-disabled peers. Moreover, a decrease in social support upon exposure to bullying—where individuals with disabilities may feel fear or embarrassment about disclosing their victimization—can lead to social isolation and the loss of support networks essential for maintaining psychological adjustment. Furthermore, recurring negative online experiences may lead to the formation of negative self-images or distorted perceptions of others, manifesting as weak coping and adjustment skills.

The current study's findings are consistent with the study of Al-Anzi (2022), which showed a statistically significant inverse relationship between exposure to bullying and the level of psychological and social adjustment. They also align with the study of Abu Deif (2022), which indicated a statistically significant negative correlation between bullying and psychological adjustment among deaf students. Similarly, these results resonate with Hamzah (2021), which

demonstrated that high levels of cyberbullying are associated with low levels of psychological adjustment among individuals with disabilities, and Hamzah (2020), which reported a negative relationship between cyberbullying and social and psychological adjustment among adolescents with disabilities.

Recommendations

Considering the study results, the following recommendations can be made:

- **Expanding Inclusive Education Programs:** By providing specialized cadres of qualified teachers and counselors who are professionally trained to interact with and support students with disabilities.
- **Establishing a Sign Language Reporting Platform:** Creating a dedicated platform utilizing sign language—or providing a hotline and an electronic link—to report cyberbullying incidents from their onset. This aims to intervene early, halt the abuse, and subsequently conduct detailed investigations.
- **Launching Sustainable Family Training Programs:** Empowering parents to provide consistent psychological and social support to their children. This includes organizing guidance sessions for parents to enhance "positive supervision" skills over their children's internet usage while strictly respecting their privacy.
- **Conducting Specialized Empirical Studies:** Carrying out in-depth research to further understand the nuances between different types of disabilities and their respective levels of psychological adjustment. Such studies aim to develop more precise and effective intervention programs. Additionally, conducting longitudinal studies is essential to monitor the evolution of cyberbullying across various groups and to identify new variables that may influence its prevalence.

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