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# Feeling of Psychological Loneliness Among Adolescent Students with Disabilities in Inclusive Education Settings and Special Care Centers: A Comparative Study

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**ABSTRACT**
This study examined the differences in the Feeling of Psychological Loneliness (FPL) among Adolescent Students with Disabilities (ASwD) across Inclusive Education Settings (IESs) and Special Care Centers (SCCs)in Jordan. To achieve this, an Arabic version of the University of California, Los Angeles Loneliness Scale (UCLA LS) for adolescents was developed in three formats—pen and paper, sign language, and Braille—to address the needs of ASwD in IESs. After confirming the validity and reliability of the instrument, it was administered to a sample of 672 ASwD, selected through stratified cluster sampling. The findings revealed that FPL levels among ASwD in IESs were high for students with hearing disabilities, and moderate for those with visual disabilities, physical disabilities, and learning difficulties. A statistically significant difference in FPL was also observed between ASwD and their peers without disabilities, with ASwD reporting higher levels. Moreover, disability type was found to influence FPL levels, with students with hearing disabilities experiencing greater FPL than those with other disabilities. Differences based on IESs also emerged, with students in inclusive schools reporting higher FPL levels than those in SCCs, regardless of disability type (hearing, visual, or physical). Recommendations are provided.

**KEYWORDS**
Inclusive education; loneliness; adolescents; students with disabilities; Jordan.

## INTRODUCTION AND BACKGROUND

Impact evaluation studies of development programs and educational projects have received growing attention in educational research due to their vital role in fostering accountability and enhancing performance. The educational reform movement has prompted several institutions to adopt international best practices to improve the efficiency of their programs and services. However, these impact assessments are frequently conducted internally by the implementing organizations, which raises concerns about the reliability and objectivity of the findings. Thus, the need for independent and impartial entities—such as university faculty members and graduate students—to conduct such studies becomes clear. This practice not only ensures objective assessment and verification of program outcomes but also produces practical knowledge that contributes to constant improvement.

Social interaction plays a vital role in child development and psychosocial growth, beginning with early exchanges within the family and close surroundings, then gradually extending to wider social contexts. Through this process, the child grows from a purely biological being into an active participant in society. According to Bronfenbrenner's ecological systems theory, development is shaped by the dynamic interaction of multiple environmental layers—the microsystem, mesosystem, exosystem, macrosystem, and chronosystem—which collectively influence growth (Rahman, 2025). Social interaction becomes most prominent during middle childhood, particularly around the age of six, when children start to acquire a wide range of social behaviors in response to different environmental influences (Pavri & Monda-Amaya, 2001). These strategies may foster positive social adjustment and well-being or, in contrast, contribute to challenges such as experiences of loneliness in adolescence (Weiten et al., 2017).

Adolescence is a critical stage of human development, marked by profound developmental, psychological, and social changes that play an essential role in shaping personality. As noted by Lin et al. (2024), this period often generates considerable concern for both parents and educators. While several adolescents naturally gravitate toward peer groups, some desire withdrawal and separation, often due to psychological difficulties that limit their social interactions. Darling-Fisher (2019) emphasizes that success or failure in social contexts has a direct influence on adolescents' self-image and their attitudes toward others. A helpful social setting that raises positive experiences is important for building healthy social relationships, whereas its absence intensifies feelings of loneliness. Although the general features of adolescence are similar for individuals with and without disabilities, Pavri and Monda-Amaya (2001) stress that ASwD encounter additional obstacles, making attentive parenting and guidance particularly important. Such challenges arise from struggles in grasping social norms and values, which impair their ability to differentiate acceptable from unacceptable behaviors and limit the development of social skills and integration into mainstream values.

The assessment and examination of the Feeling of Psychological Loneliness (FPL) have attracted significant attention, especially among individuals with disabilities, because of its

adverse effects on behavior and mental health (Alexandra et al., 2018). FPL is viewed as a developmental challenge for adolescents, as it may result in maladaptive behaviors such as limited social interaction, weak social skills, and insufficient awareness of the importance of building relationships (Conte, 2009).

Pavri and Monda-Amaya (2001) emphasized that disability has a significant impact on the development of adolescents' social and emotional skills, as its effects are often difficult to separate from typical developmental processes. Further, disabilities hinder these adolescents from obtaining social and emotional abilities at a level equivalent to their peers without disabilities, leaving them susceptible to bullying and resulting in low self-esteem, social isolation, or aggressive behavior. Furthermore, disability limits a child's ability to express needs and emotions, which harmfully affects relationships with adults, including parents. Al-Khatib (2018) highlighted that all forms of disabilities are associated with varying degrees of deficits in social and emotional behavior, and these difficulties may intensify without effective intervention, thereby negatively influencing the development of cognitive, linguistic, and other essential skills.

Psychological loneliness has been conceptualized in the literature as transient, situational, or chronic (Weiten et al., 2017). To provide a testable framework for the present study, theoretical perspectives were linked to the specific factors expected to influence adolescents' perceived loneliness in different educational environments and across disability types. Adler's view that limited early social experiences contribute to feelings of inferiority and isolation (Stangor & Frantz, 2023) suggests that adolescents with disabilities—particularly those whose impairments restrict social interaction—may report higher levels of loneliness. Thus, Adler's theory supports examining differences across types of disabilities, such as hearing, visual, physical disabilities, and learning difficulties, because each condition may offer distinct social interaction opportunities.

Horney's emphasis on relational competence and the socio-cultural factors that shape individuals' ability to maintain relationships (Kalat, 2021) provides theoretical grounding for comparing educational settings. Her framework implies that adolescents placed in more socially restrictive environments—such as special centers—may have fewer opportunities to form stable social ties than peers in inclusive settings. Therefore, Horney's concepts inform the expectation that loneliness levels may differ between adolescents in inclusive educational settings (IESs) and those in special care centers (SCCs), depending on the relational context provided by each environment.

Similarly, Erikson's psychosocial theory positions adolescence as a developmental stage in which identity formation depends heavily on belonging and peer acceptance. Failure to establish meaningful social connections leads to feelings of emptiness and loneliness (Dhabhai, 2025). This theoretical lens directly informs the comparison between adolescents with disabilities (ASwD) and adolescents without disabilities (ASwoD) in inclusive settings, as differing

levels of peer acceptance and social integration may contribute to variations in loneliness scores.

In addition to these theoretical expectations, empirical literature indicates that loneliness arises from internal factors such as fear of rejection, low self-evaluation, and inadequate social support (Barjaková et al., 2023). Consistent with this perspective, the American Psychiatric Association (2020; 2022) describes how social anxiety—common among adolescents with certain disabilities—can limit interpersonal engagement and increase withdrawal. These features provide further justification for examining whether adolescents with specific disabilities (e.g., hearing or visual impairments) report different levels of loneliness due to the interactional challenges associated with their condition.

Taken together, these theories and empirical insights were not only used for conceptual background but were operationalized to derive expectations about how loneliness may vary across the study's categorical independent variables: educational setting (inclusive vs. special), student status (ASwD vs. ASwoD within IESs), and type of disability (hearing, visual, physical, learning difficulties).

In the context of inclusive education, the literature conceptualizes this approach as an educational model that integrates students with disabilities into age-appropriate general education classrooms within their local schools, ensuring equitable access to the curriculum through appropriate support services (Higher Council for the Rights of Persons with Disabilities, 2019). For the purposes of the present study, inclusive education refers specifically to the practices implemented in Jordanian public schools, where students with hearing, visual, physical, and learning disabilities are educated alongside their non-disabled peers in shared classrooms without segregation or the use of separate instructional settings.

Psychological loneliness, as discussed in the literature, is understood as a disruption or inadequacy within an individual's social network, characterized by a deficit in the number of social connections or a lack of emotionally meaningful relationships marked by affection, intimacy, and mutual understanding (Kalat, 2021). This form of loneliness may be enduring and contribute to prolonged dissatisfaction with one's social interactions. Operationally, the present study examines psychological loneliness as the level of perceived loneliness among adolescents in inclusive educational settings, assessed through the Arabic adaptation of the UCLA Loneliness Scale developed by Abu-Ghneim (2024).

Inclusive education is the official policy in Jordan, designed to integrate students with disabilities into mainstream schools alongside their peers, enabling them to develop social skills through observing and imitating desirable behaviors (Al-Khatib, 2018). Despite its importance, inclusive education grants challenges for ASwD, as they necessity interact in settings with non-disabled peers, which can exert pressure on their identity formation and sense of belonging. Some students encounter issues such as bullying and social isolation, which can intensify feelings of loneliness and helplessness (Ručman & Šulc, 2025). According to Erikson's theory, successful integration into the school community reflects the resolution of the identity crisis

(Brown et al., 2019), whereas withdrawal or exclusive affiliation with peers with disabilities may result in psychological loneliness and isolation (Dhabhai, 2025). Lin et al. (2025) contends that physical integration alone does not ensure social integration, highlighting the crucial role of the school community's acceptance and the teacher's involvement. Although the characteristics of adolescence are similar for students with and without disabilities, difficulties in understanding social values and norms make individuals with disabilities more vulnerable to social adjustment challenges (Wang et al., 2019).

Given previous, it becomes clear that there is a need to investigate the impact of inclusive education on FPL among ASwD in Jordan. To achieve this, the study employed the University of California, Los Angeles Loneliness Scale (UCLA LS), a standardized and widely recognized instrument known for its high validity and reliability, which has been extensively utilized in research conducted across the United States, Europe, Asia, and Africa (Russell, 1996).

FPL among students with disabilities have been widely studied, with variations in research methods and target populations depending on the type of disability and educational context. Al-Dardir and Abdullah (1999) measured loneliness among 116 students with intellectual, visual, and hearing disabilities using a specialized rating scale, finding higher loneliness levels among students with hearing disabilities, with no significant gender differences. Similarly, Alexandra et al. (2018) reported that loneliness is common among individuals with developmental and intellectual disabilities, with an average prevalence of 44.74% across five studies, emphasizing the need for effective interventions.

Kent (2003) examined identity issues, including loneliness, among hearing-disabled adolescents in IESs in New Zealand, comparing them with non-disabled peers. Using the 48-item Healthy Behavior Scale (HBCS), the study included 522 students, 52 with severe hearing disabilities. Results showed greater loneliness among hearing-disabled students, with no gender differences, and suggested that inclusive education posed psychological and social challenges due to stigma. Judah (2005) similarly found that 37% of adolescents with hearing disabilities experienced loneliness compared to 0.1% of peers without disabilities, with no significant gender differences.

For visually disabled students, Kong et al. (2020) studied 78 college students in China using the UCLA Loneliness Scale, the Self-Stigma of Disability Scale (SSDS), and the Self-Acceptance Questionnaire (SAQ). They found that self-stigma significantly predicted loneliness, while self-acceptance mediated this relationship when controlling for disability severity and parent–child relationships.

Longitudinal evidence synthesized by Dunlop et al. (2024) showed that peer support trajectories during adolescence and young adulthood predicted later loneliness among individuals with visual disability. Peer support increased until approximately age 27, then declined, and proved a stronger predictor of loneliness than parental support. Patel et al. (2021) reviewed 33 pediatric studies on hearing disability, reporting that 60% found links between hearing loss and loneliness, and 64.7% reported increased social isolation. Communication

difficulties were the most common contributing factor, while school type had inconsistent effects. Recommendations emphasized enhancing peer interactions and educating non-disabled students about their peers' needs.

In sum, research indicates growing attention to FPL among students with disabilities in both special and inclusive education contexts, often highlighting higher loneliness among those with hearing or visual disabilities (Al-Dardir & Abdullah, 1999; Judah, 2005). However, many studies focused on a single disability type or foreign contexts (Kent, 2003). This study discourses gaps by investigating how inclusive education affects FPL among a ASwD in Jordan, comparing them with ASwoD in the same setting. It contains hearing, visual, physical disabilities, and learning difficulties, providing vision into psychological and social challenges faced in inclusive schools. The results purpose to advise educational policies and psychological support programs to improve the experiences of ASwD, aligning with ongoing developments in inclusive education.

**Problem Statement and Research Questions**

Inclusive education is recognized as a best practice worldwide (Gómez-Zúñiga et al., 2023). Therefore, the Ministry of Education in Jordan has adopted a policy of integrating students with disabilities into mainstream classrooms together with their non-disabled students. Though, this initiative has not been supported by enough research to explore the positive and negative impacts of this initiative within the local setting. Instead, the Ministry has relied heavily on studies and articles from other countries such as Kong et al. (2020) that have implemented and supported this model. However, this reliance ignores a main principle in transferring best practices across cultures: the local setting of implementation is critical to the success of any practice. Considering the potential psychological effects of integration on ASwD—including issues such as low self-esteem and feelings of social exclusion—there is a clear need for research investigating these effects locally. The psychological loneliness experienced by students is considered as the one of the most important areas expected to be influenced by the integration process. Thus, addressing psychological loneliness among ASwD represents a vital research priority in this field.

A review of previous studies measuring FPL revealed that most research focused on typically developing students in non- IESs. This gap led to the formulation of the main research question for this study: What are the differences in the level of FPL among ASwD across IESs and SCCs in Jordan.

The study aims to answer the following questions:

1- What is the level of FPL among adolescents in IESs in Jordan?

IESs1-

2- Are there statistically significant differences ($\alpha = 0.05$) in the level of FPL among ASwD in IESs in Jordan attributable to the presence of a disability?

IESs

3- Are there statistically significant differences (α = 0.05) in the level of FPL among ASwD in IESs in Jordan attributed to the type of disability?

4- Are there statistically significant differences (α = 0.05) in the level of FPL among ASwD attributed to the IESs and SCCs in Jordan?

**Study Aims**

This study is an evaluative investigation aimed at assessing the level of FPL among ASwD in IESs IESs in Jordan. It also examined differences in FPL between adolescents with and without disabilities within the same educational settings. In addition, the study explored variations in FPL according to different types of disabilities, including hearing, visual, and physical disabilities, as well as learning difficulties. Finally, the study investigated differences in loneliness among ASwD (hearing, visual, and physical) based on the type of educational setting they attend, whether an inclusive school or a special school for ASwD.

**Study Importance**

The literature review conducted through databases such as Al-Manzuma, EBSCO, and ProQuest revealed that this study is the first of its kind to examine the psychological impact of educational development programs by assessing FPL among ASwD in IESs. The study also makes comparisons between these adolescents, typically developing students, and students with disabilities in non-inclusive SCCs. Furthermore, this study is distinct because it including ASwD in inclusive schools, rather than focusing solely on ASwoD.

The theoretical importance of the study lies in its influence to the educational literature by providing a methodology for assessing the effect of inclusive education programs. Additionally, the study introduced an Arabic version of UCLA LS for adolescents, provided in three formats—paper, sign language, and Braille—to accommodate the needs of ASwD in IESs. With respect to the practical standpoint, this study contributes to assessing the effect of inclusive education on FPL among ASwD in Jordan. Its results offer valuable data for the directors at the Ministry of Education. This would support evidence-based decision-making regarding program effectiveness. Further, this would assistance in the development of educational settings, consider best practices to achieve success and excellence for all students, whether with or without disabilities.

**Study Limitations:**

This study had several limitations. Firstly, the human sample consisted of adolescent students aged 13 to 17 years attending inclusive schools, totaling 173 schools. Further, this study involved students with visual, hearing, or physical disabilities attending 13 specialized schools, distributed according to the type of disability. Regarding the temporal scope, this study was limited to the academic year of 2024–2025. In terms of geographical scope, the study encompassed inclusive schools for ASwD (visual, hearing, physical, and learning difficulties) across the three regions of Jordan: North, Central, and South. Additionally, it included 13 specialized schools for ASwD (visual, hearing, and physical), distributed as follows: 11 schools for students with hearing disabilities, one for students with visual disabilities, and one for

students with physical disabilities. It is worth noting that the validity of the study results depends largely on the psychometric properties of the research instrument and the objectivity of the participants' responses.

**Method and Procedures**

The study employed the descriptive approach as the most appropriate method, given its focus on examining phenomena as they naturally occur without any intervention or manipulation (Johnson & Christensen, 2020; Creswell & Creswell, 2018). A descriptive survey method was utilized to answer the research question concerning the level of FPL among ASwD in IESs, which required descriptive statistical analysis. Additionally, a comparative descriptive (causal-comparative) approach was applied to explore the impact of the inclusive education experience in Jordanian schools on FPL among ASwD, which necessitated the use of inferential statistical methods.

**Study Population and Sample**

The study population comprised adolescent students aged 13–18 years attending inclusive public schools for ASwD (hearing disability, visual disability, physical disability, and learning difficulties) in Jordan during the 2024–2025 academic year. Jordan has 173 inclusive schools: 69 in the Central County, 54 in the Northern County, and 48 in the Southern County. According to the Ministry of Education, 28,600 ASwD are integrated into regular schools.

The study also included SCCs for ASwD (hearing disability, visual disability, and physical disability), reflecting the traditional approach to their education prior to the implementation of inclusive education. There are 13 schools: 11 for students with hearing disabilities, one for students with visual disabilities, and one for students with physical disabilities. This group was incorporated to facilitate comparisons of mean psychological loneliness scores between adolescents in IESs and those in SCCs for ASwD in Jordan.

**Table 1.**

*Study sample distribution according to the existence of disability, type of disability, and educational setting*

| Existence of Disability | Type of Disability | Educational Settings | | Total |
|---|---|---|---|---|
| | | Inclusive | Special | |
| Yes | Hearing disability | 19 | 153 | 172 |
| | Visual disability | 72 | 71 | 143 |
| | Physical disability | 138 | 39 | 177 |
| | Learning difficulties* | 180 | 0 | 180 |
| Total | | 409 | 263 | 672 |
| No (The sample consisted of non-disabled students**) | | 720 | 0 | 720 |
| Total | | 1129 | 263 | 1392 |

*All types of disabilities were present in both educational settings (inclusive education and SCCs), except for learning difficulties, which appeared only in the inclusive education setting.
**The study sample included ASwoD in the inclusive education setting alongside ASwD, as certain research questions required comparisons between these two groups. Additionally, the sample included ASwD in non-inclusive learning settings (SCCs for ASwD) because some questions required comparisons based on the type of educational setting.

A stratified cluster sampling method was used to select the study sample from the target population. It consisted of 672 ASwD, distributed by educational setting as follows: 409 students from inclusive schools (covering students with hearing, visual, physical disabilities, and learning difficulties) and 263 students from SCCs (students with hearing, visual, or physical disabilities). For comparative purposes, a sample of 720 ASwoD was selected from inclusive schools. Accordingly, the total sample size was 1,392 students. Table (1) presents the distribution of the study sample according to existence of disability, type of disability, and educational setting.

**Study Instrument**

The original UCLA LS was developed at the University of California, Los Angeles, by Russell et al. (2010). Later studies, such as Russell's (1996), confirmed the scale's strong validity and reliability, as well as its ease of administration, scoring, and interpretation. Completing the scale typically requires about 20 minutes, making it a dependable tool for psychological and social research.

The Jordanian version of the UCLA LS was created by translating the original English items into Arabic while preserving both the meaning and psychological context. At this stage, two English language specialists from the University of Jordan reviewed the translation to refine it from linguistic and educational perspectives. To ensure equivalence with the original, the Arabic version was back-translated into English and compared with the source version, confirming that the original meaning and content were maintained.

To further validate content accuracy, the Jordanian version was evaluated by a panel of eight university faculty members: three specialists in educational psychology, three in SCCs, and two in counseling psychology. The panel reviewed the clarity of the items and their suitability for both the target group and the Jordanian cultural context. Based on their feedback, minor wording adjustments were made to enhance cultural and linguistic appropriateness without altering the items' original meaning.

For the purposes of the study, a paper-based Jordanian version of the Psychological Loneliness Scale was prepared for both non-disabled adolescents and students with learning difficulties or physical disabilities. Adapted versions were also developed: one for students with hearing disabilities using sign language, and another for students with visual disabilities in Braille. A sign language interpreter from the University of Jordan adapted the scale for students with hearing disabilities, while a lecturer specializing in sign language from the Department of Educational and Psychological Counseling, along with the projects coordinator at the Higher

Council for the Rights of Persons with Disabilities, prepared and reviewed the Braille version to ensure its appropriateness for students with visual disabilities.

The Jordanian version consists of 20 statements (items) presented on a 4-point Likert scale, with responses ranging from “Often applies to me” to “Never applies to me,” scored 4, 3, 2, and 1, respectively. The total score ranges from 20 to 80. For adolescents in IESs in Jordan, loneliness scores are interpreted at three levels: below 40 indicates a low level of loneliness, 40–60 indicates a moderate level, and above 60 indicates a high level of loneliness.

**Validity and Reliability**

The psychometric properties of the FPL Scale (available in paper-based, sign language, and Braille format) were validated by applying it to a pilot sample of 96 students in an inclusive education setting, distinct from the main study sample. This step aimed to confirm the clarity and suitability of the items for the intended group and to evaluate participants’ responses. Discriminative validity was assessed through the correlation between each item and the total scale score. The correlations ranged from 0.365 to 0.890 for the paper-based version, 0.321 to 0.951 for the sign language version, and 0.311 to 0.939 for the Braille version. These results show that all items demonstrated adequate discriminative power, surpassing the minimum required level (0.30), thereby supporting the scale’s validity.

Reliability was examined using two approaches. First, internal consistency was tested using Cronbach’s alpha, producing values of 0.952 for the paper-based version, 0.939 for the sign language version, and 0.950 for the Braille version, all reflecting strong internal consistency. Second, test-retest reliability produced coefficients of 0.893 for the paper-based version, 0.891 for the sign language version, and 0.930 for the Braille version. All values exceeded the acceptable threshold of 0.70 recommended by Hambleton, confirming the stability of results across administrations (Ekolu & Quainoo, 2019). Accordingly, the scale can be regarded as a valid and reliable instrument for assessing FPL among ASwD in IESs.

**Statistical Analysis**

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) software through the following steps: First, to answer the first research question, the mean scores and standard deviations of the students’ scale scores were calculated. Second, to answer the second research question, a two-sample t-test for independent groups was conducted. Third, to answer the third research question, a one-way ANOVA was applied. Finally, to answer the fourth research question, the two-sample t-test for independent groups was used again.

**Study Variables**

The study involved one dependent variable and multiple categorical independent variables. The dependent variable reflected the level of perceived loneliness among adolescents in IESs IESs in Jordan. It was a categorical variable measured by the total score of 20 items, ranging from 20 to 80. The independent variables consisted of three categorical factors: (1) the educational setting of ASwD, a nominal variable with two levels—inclusive settings and SCCs; (2) the student’s status within the inclusive educational setting, also a nominal variable with two levels— ASwD and

ASwoD; and (3) the type of disability, a nominal variable with four levels—hearing disability, visual disability, physical disability, and learning difficulties.

**Ethical Concerns**

Ethical concerns in this study were addressed with the utmost care to protect the rights, dignity, and well-being of all participants. The research was conducted in compliance with established ethical standards for studies involving human participants. Ethical approval was formally granted by the Ethical Committee of the Department of Educational Planning and Research, Ministry of Education, Jordan, on March 11, 2024 (Ref. No. 598/2024/1).

Given that the participants were adolescent students aged 13–18 years with disabilities, particular attention was devoted to safeguarding their autonomy and ensuring their participation was voluntary. Informed consent was obtained from all participants and their legal guardians, with written parental/guardian consent secured alongside the students' own assent prior to participation. This dual consent process ensured that both the minors' willingness and the guardians' authorization were respected.

Confidentiality was maintained by anonymizing all data and removing any personal identifiers, while participants were assured that their involvement would have no impact on their educational standing or access to school services. Furthermore, all study instruments were adapted to meet the diverse needs of students with hearing, visual, and physical disabilities to prevent exclusion or undue disadvantage.

## RESULTS AND DISCUSSION

**First Question:** What is the level of FPL among adolescents in IESs in Jordan? To assess the level FPL among adolescents in IESs in Jordan (both ASwD and those without disabilities), the mean scores and standard deviations of the total FPL scale were calculated separately for each group. The findings are displayed in table 2 below:

**Table 2.**

*Level of FPL among adolescents in IESs in Jordan*

| Existence of Disability | Adolescent Group | Mean | Standard Deviation | Level |
|---|---|---|---|---|
| Yes | Hearing disability | 60.84 | 9.42 | High |
| | Visual disability | 53.51 | 8.79 | Moderate |
| | Physical disability | 53.33 | 7.86 | Moderate |
| | Learning difficulties | 52.49 | 12.60 | Moderate |
| No | Non-disabled students | 40.28 | 15.36 | Moderate |

Table 2 indicated that the mean score of non-disabled adolescent students on FPL scale was the lowest (M=40.28, SD=15.36), reflecting a moderate level. In comparison, adolescent students with hearing disabilities recorded the highest mean score (M=60.84, SD=9.42), corresponding to a high level. For other disability groups, the level FPL was moderate: students

with visual disabilities (M=53.51, SD=8.79); students with physical disabilities (M=53.33, SD=7.86); while students with learning difficulties (M=52.49, SD=12.60).

The study's findings indicate that the type of disability significantly influences adolescents' experiences of psychological loneliness. ASwoD reported the lowest levels of FPL, reflecting their ability to communicate and engage socially without sensory, physical, or cognitive limitations. These students' educational and social environments generally provide ample opportunities for interaction, thereby reducing feelings of isolation, consistent with Bronfenbrenner's ecological systems theory, which emphasizes the role of multiple environmental layers in shaping social development (Rahman, 2025). Social engagement during adolescence fosters psychosocial growth, and positive peer interactions contribute to a stronger sense of belonging and well-being (Pavri & Monda-Amaya, 2001; Darling-Fisher, 2019).

In contrast, students with hearing disabilities exhibited the highest mean levels of FPL. This is likely due to communication barriers that limit participation in classroom discussions, group work, and extracurricular activities, reinforcing social isolation. These findings align with previous research indicating that hearing-impaired adolescents often experience elevated loneliness due to stigma, reduced peer acceptance, and challenges in maintaining meaningful social connections (Kent, 2003; Judah, 2005; Patel et al., 2021). Difficulties in establishing reciprocal social interactions are particularly pronounced in adolescence, a critical period for identity formation and peer affiliation (Lin et al., 2024; Dhabhai, 2025).

Students with visual, physical, or learning disabilities showed moderate to high levels of FPL. Adolescents with visual impairments may face reduced participation in vision-dependent activities or mobility challenges that limit social interaction opportunities (Kong et al., 2020; Dunlop et al., 2024). Physical disabilities can restrict involvement in games or classroom activities, requiring assistance for daily tasks, which may increase feelings of exclusion (Al-Khatib, 2018; Ručman & Šulc, 2025). Adolescents with learning disabilities may encounter academic difficulties relative to peers, experience unintentional frustration from others, and struggle to form peer connections, contributing to higher FPL (Pavri & Monda-Amaya, 2001; Weiten et al., 2017).

Overall, the findings suggest that psychological loneliness is closely linked to the level of social interaction, opportunities for inclusion in educational and social activities, and the specific challenges associated with each type of disability. These results reinforce the need for targeted psychosocial support programs, particularly for students with hearing disabilities, to enhance social skills, reduce feelings of isolation, and foster participation in school and community life (Alexandra et al., 2018; Conte, 2009). Moreover, promoting awareness among non-disabled peers and educators about the diverse needs of adolescents with disabilities is essential to cultivate an inclusive and psychologically supportive learning environment, consistent with Erikson's theory of identity formation and the principles of inclusive education (Brown et al., 2019; Lin et al., 2025).

To explore further FPL levels across student groups in inclusive schools (non-disabled adolescents, adolescents with hearing disabilities, adolescents with visual disabilities, adolescents with physical disabilities, and adolescents with learning difficulties), the means and standard deviations were computed for each item as well as the total score. These results are displayed in Table 3 (see appendix).

Table (3) indicated that the mean scores of non-disabled adolescent students on FPL scale ranged from 1.98 to 2.04. The lowest scores were observed for items 8, 3, 5, and 10, all of which recorded means lower than the other items on the scale. These items highlighted the need to connect to others. The highest score for this group was for item 13 (M=2.4, SD=0.90). For hearing- disabled adolescents, table (3) showed that their mean scores on the scale ranged between 2.79 and 3.32. The lowest score was recorded for item 1 (M=2.97, SD=0.78). The highest score appeared on item 2 (M=3.32, SD=0.58), the mentioned items reflected a strong sense of FPL.As shown in table (3), visually disabled adolescents had mean scores ranging from 2.57 to 2.79. The lowest FPL was associated with item 20 (M=2.57, SD=0.62). The highest level of FPL was recorded for item 19 (M=2.79, SD=0.62). For adolescents with physical disabilities, table (3) showed mean scores between 2.53 and 2.72. The lowest score was on item 1 (M=2.53, SD=0.60). The highest scores were equally distributed across three items: item 12 (M=2.72, SD=0.62), item 13 (M=2.72, SD=0.65), and item 14 (M=2.72, SD=0.63). Finally, table (3) showed that students with learning difficulties scored between 2.52 and 2.70 on FPL scale. The lowest score appeared on item 1 (M=2.25, SD=0.83). The highest score was recorded for item 19 (M=2.70, SD=0.783). The items that most strongly influenced FPL across different student groups in IESs were: Non-disabled adolescents item 13, adolescents with hearing disabilities item 2, adolescents with visual disabilities item 19, adolescents with physical disabilities item 11, and adolescents with learning difficulties item 19.

The results indicate that non-disabled adolescents experience relatively low levels of FPL, which can be attributed to their ease of social interaction, active participation in school and extracurricular activities, and the support they receive from peers and teachers. Inclusive educational settings appear to provide these students with a sense of belonging and psychological security, reducing feelings of isolation, consistent with findings by Lin et al. (2025), who emphasized that physical integration alone is insufficient without supportive peer and teacher interactions.

Adolescents with hearing disabilities reported the highest levels of FPL, likely due to the communication barriers that limit their social engagement and integration within both academic and peer contexts. These findings align with prior research indicating that hearing-disabled adolescents often experience greater loneliness compared to their non-disabled peers (Kent, 2003; Judah, 2005), and that communication difficulties are a major contributor to social isolation (Patel et al., 2021). Similarly, Al-Dardir and Abdullah (1999) found higher loneliness levels among students with hearing disabilities relative to visually disabled students, further supporting the present results.

Students with visual or physical disabilities exhibited moderate levels of FPL, reflecting limitations that restrict full participation in school and social activities, potentially leading to experiences of neglect or exclusion. Dunlop et al. (2024) noted that peer support trajectories are particularly important for adolescents with visual impairments, suggesting that insufficient social engagement may contribute to higher loneliness. Likewise, Kong et al. (2020) found that self-stigma and challenges in social integration can exacerbate feelings of loneliness among visually disabled students.

Adolescents with learning difficulties also reported moderate FPL levels, largely due to academic challenges that may hinder peer interactions and reduce self-confidence, sometimes causing these students to adopt a more passive approach in social contexts. This reflects the broader literature indicating that psychological loneliness in adolescence can stem from difficulties in social adjustment and peer acceptance, which are intensified for students with disabilities (Pavri & Monda-Amaya, 2001; Darling-Fisher, 2019).

Overall, the pattern observed in the study—highest FPL among adolescents with hearing disabilities, followed by those with visual, physical, and learning difficulties, and lowest among non-disabled peers—underscores the need for targeted interventions to support social integration and emotional well-being in inclusive educational settings. These findings are consistent with previous research highlighting the impact of disabilities on social and emotional development and the critical role of supportive school environments in mitigating loneliness (Al-Khatib, 2018; Ručman & Šulc, 2025; Weiten et al., 2017).

**Second Question:** Are there statistically significant differences (α = 0.05) in the level of FPL among ASwD in IESs in Jordan attributable to the presence of a disability?

To address this question, researchers computed the mean and standard deviation of FPL scores for each group, categorized by the presence or absence of a disability (with disabilities vs. without disabilities). Subsequently, a t-test was conducted to compare the mean scores between the two groups. The results of this analysis are presented in Table 4:

**Table 4.**

*T-test comparing the effect of disability on FPL among adolescents in IESs in Jordan*

| | Group | Mean | Standard deviation | df | t-statistic | p-value |
|---|---|---|---|---|---|---|
| ASwD | | 53.34 | 10.527 | 1127 | -15.282* | 0.000 |
| | ASwoD | 40.28 | 15.362 | | | |

*Statistically significant at (α = 0.05)

Table (4) indicated that the p-value (0.000) is less than (0.05), confirming the impact of disability on the level of FPL among adolescents in IESs in Jordan, and favoring ASwD. This implies that ASwD in IESs in Jordan experience a significantly higher level of FPL compared to adolescents without disabilities, and this difference is statistically significant, not attributable to chance or measurement errors.

The present findings indicate significant differences in FPL between adolescents with and without disabilities in inclusive educational settings (IESs) in Jordan, suggesting that ASwD encounter additional challenges in social interaction and engagement compared to their non-disabled peers. This result is consistent with previous research highlighting that disabilities can impede adolescents' ability to acquire social and emotional skills at the same level as peers without disabilities, leaving them more vulnerable to social isolation, low self-esteem, and maladaptive behaviors (Pavri & Monda-Amaya, 2001; Al-Khatib, 2018; Alexandra et al., 2018). Similarly, studies focusing on specific disabilities, such as hearing impairments, have shown that adolescents experience heightened loneliness and psychological challenges in inclusive classrooms (Kent, 2003; Judah, 2005), while research on visual disabilities emphasizes the role of self-stigma and peer support in shaping social integration and perceived loneliness (Kong et al., 2020; Dunlop et al., 2024).

From a psychological perspective, the increased FPL among ASwD reflects the need for enhanced emotional and psychological support. Adolescents with disabilities often face difficulties in understanding social norms and integrating into peer networks, which can exacerbate feelings of isolation and contribute to anxiety or depressive symptoms (Lin et al., 2024; Wang et al., 2019). Bronfenbrenner's ecological systems theory further underscores the influence of multiple environmental layers on individual's development, suggesting that both family and school contexts play a critical role in either mitigating or amplifying these feelings (Rahman, 2025). Moreover, adolescence represents a developmental stage in which peer acceptance and belonging are crucial for identity formation, and failure to achieve these social connections can heighten loneliness, particularly for students with disabilities (Erikson in Dhabhai, 2025; Darling-Fisher, 2019).

Socially, these findings emphasize the importance of inclusive learning environments that foster positive interactions and minimize barriers to participation. Effective inclusion requires both structural integration in classrooms and the promotion of meaningful peer relationships, as physical presence alone does not guarantee social integration (Lin et al., 2025). Pedagogically, the results highlight the need for interactive and individualized teaching strategies, counseling programs, and professional development for teachers to support the social and emotional development of ASwD. Equally important is raising awareness among non-disabled peers to cultivate an inclusive school culture grounded in mutual respect, thereby reducing FPL and fostering a sense of belonging (Pavri & Monda-Amaya, 2001; Al-Khatib, 2018; Ručman & Šulc, 2025).

In summary, the present findings align with prior research demonstrating that adolescents with disabilities face unique social and psychological challenges in inclusive settings, which can manifest as elevated loneliness compared to peers without disabilities (Rokach et al., 2021; Judah, 2005). These results underscore the need for comprehensive interventions at both the individual and systemic levels to ensure equitable participation and promote the psychosocial well-being of all students in inclusive education contexts.

**Third Question:** Are there statistically significant differences (α = 0.05) in the level of FPL among ASwD in IESs in Jordan attributed to the type of disability?

To address this question, researchers computed the mean and standard deviation of FPL scores for each group of the disability type variable (hearing disability, visual disability, physical disability, learning difficulties). The results are presented in Table 5:

**Table 5.**

*Means and Standard Deviations of FPL Scores for Each Level of the Disability Type Variable*

| Adolescent Group | Mean | Standard Deviations |
|---|---|---|
| Hearing disability | 60.84 | 9.424 |
| Visual disability | 53.51 | 8.792 |
| Physical disability | 53.33 | 7.864 |
| Learning difficulties | 52.49 | 12.608 |

Table (5) presented the observed differences in mean scores among groups of ASwD in an inclusive educational setting (including students with hearing disabilities, visual disabilities, physical disabilities, and learning difficulties). To determine whether these differences were statistically significant, a one-way ANOVA was conducted to compare the mean scores across the study groups. The results are displayed in Table (6).

**Table 6.**

*Results of one-way ANOVA analysis of mean scores of FPL according to type of disability*

| Source | SS | df | MS | F | p |
|---|---|---|---|---|---|
| Between Groups | 1200.245 | 3 | 400.082 | 3.681* | 0.012 |
| Within Groups | 44013.833 | 405 | 108.676 | | |
| Total | 45214.078 | 408 | | | |

*Statistically significant at (α = 0.05)

Table (6) indicated that the p-value (0.012) is below 0.05, suggesting that the differences in FPL levels are statistically significant, depending on the type of disability (visual, auditory, physical, learning difficulties). To identify which type of disability exhibited the greatest difference, a Scheffé post-hoc test was performed comparing all pairs of disability types. The results are shown in Table (7).

The results presented in Table (7) indicated statistically significant differences ($p < 0.05$) in the level of FPL among adolescents with hearing disabilities in IESs, in comparison to those with physical disabilities and those with learning difficulties. Conversely, no significant differences were observed between the other comparison groups. This implies that adolescents with hearing disabilities are more affected by the inclusive educational setting in terms of their feelings of loneliness.

**Table 7.**

*Results of the Scheffe test for post-hoc comparisons*

| Main group | Subgroups | Differences in mean values between groups |
|---|---|---|
| Hearing disability | Visual disability | 7.328 |
| | Physical disability | 7.516* |
| | Learning difficulties | 8.348* |
| Visual disability | Physical disability | 0.188 |
| | Learning difficulties | 1.019 |
| Physical disability | Learning difficulties | .8320 |

*Statistically significant at (α = 0.05)

The findings of the present study indicate that the impact of inclusive education on the FPL varies across disability groups, with adolescents with hearing disabilities exhibiting significantly higher levels of loneliness compared to their peers with physical disabilities or learning difficulties. This result aligns with previous research showing that hearing-disabled students face unique social and psychological challenges in inclusive settings due to communication barriers, which can hinder peer interactions and contribute to feelings of isolation (Kent, 2003; Judah, 2005; Patel et al., 2021). Communication difficulties limit opportunities for meaningful social engagement, reducing the quality of relationships and increasing vulnerability to loneliness, consistent with Adler's theoretical perspective that restricted social experiences intensify feelings of inferiority and isolation (Stangor & Frantz, 2023). Similarly, Horney's emphasis on relational competence suggests that adolescents placed in environments with limited relational opportunities—such as hearing-disabled students in inclusive classrooms—are more likely to experience psychological loneliness (Kalat, 2021).

In contrast, no statistically significant differences in FPL were observed between students with physical disabilities and those with learning difficulties. This suggests that the inclusive education environment provides similar opportunities for social integration for these groups, allowing them to develop peer relationships that buffer against loneliness. These findings correspond with prior research emphasizing that social interaction plays a critical role in psychosocial adjustment during adolescence (Pavri & Monda-Amaya, 2001; Lin et al., 2024), and that supportive social environments can mitigate the negative effects of developmental challenges (Darling-Fisher, 2019; Al-Khatib, 2018).

Overall, the results underscore that adolescents with hearing disabilities are particularly vulnerable to the effects of inclusive education on FPL, highlighting the importance of targeted interventions. Strategies such as enhancing peer interactions, providing communication support, and fostering an inclusive classroom culture are essential to reduce loneliness and promote social inclusion for this group (Patel et al., 2021; Ručman & Šulc, 2025; Wang et al., 2019). These findings reinforce the notion that physical integration alone is insufficient;

adolescents require meaningful opportunities for social engagement to achieve psychological and emotional well-being within inclusive educational settings (Lin et al., 2025; Erikson, as cited in Brown et al., 2019).

**Fourth Question:** Are there statistically significant differences (α = 0.05) in the level of FPL among ASwD attributed to the IESs and SCCs in Jordan?

To address this question, the mean and standard deviation of FPL scores were computed for each group of the educational setting variable (inclusive education and SCCs for ASwD) and for each type of disability (hearing disability, visual disability, and physical disability). Subsequently, a t-test was conducted to compare the mean scores between the two groups (inclusive education vs. SCCs). The results are presented in Table 8:

**Table 8.**

*T-test for the effect of inclusive education on FPL among ASwD in Jordan*

| Type of Disability | Educational setting | Mean | Standard deviation | df | t-statistic | p-value |
|---|---|---|---|---|---|---|
| Hearing disability | Inclusive | 60.84 | 9.424 | 170 | 5.234* | 0.000 |
| | SCCs | 48.40 | 9.814 | | | |
| Visual disability | Inclusive | 53.51 | 8.792 | 141 | 7.521* | 0.000 |
| | SCCs | 42.59 | 8.570 | | | |
| Physical disability | Inclusive | 53.33 | 7.864 | 175 | 6.915* | 0.000 |
| | SCCs | 43.13 | 9.033 | | | |

*Statistically significant at (α = 0.05)

The results revealed a statistically significant difference between students in inclusive IESs) and those in SCCs across all disability groups (hearing, visual, and physical), with a p-value of 0.000, confirming that the observed effects are unlikely to be due to chance. Specifically, adolescents with disabilities (ASwD) in IESs reported higher levels of psychological loneliness than their peers in SCCs. This finding suggests that, despite the intended objectives of inclusive education—promoting equality, shared learning, and social integration—the experience of inclusion may sometimes exacerbate feelings of isolation rather than mitigate them.

These outcomes align with prior research emphasizing the critical role of social interactions in adolescent psychosocial development. Adolescence is a period characterized by identity formation, peer dependence, and heightened sensitivity to social acceptance (Lin et al., 2024; Darling-Fisher, 2019). For ASwD, limited social skills, difficulties in interpreting social norms, and challenges in forming meaningful peer relationships can intensify feelings of disconnection (Pavri & Monda-Amaya, 2001; Al-Khatib, 2018). Moreover, the school environment itself plays a crucial role; inclusive settings require non-disabled peers to understand and accommodate diverse needs, yet insufficient awareness or support can result

in neglect, bullying, or social exclusion, further reinforcing psychological loneliness (Ručman & Šulc, 2025; Wang et al., 2019).

The variation in loneliness levels across disability types also reflects the specific interactional challenges inherent to each condition. Adolescents with hearing disabilities may struggle with verbal communication, limiting participation in classroom discussions and peer interactions (Kent, 2003; Patel et al., 2021). Those with visual disabilities may face difficulties engaging in visually oriented group activities or social cues, which can impede integration (Kong et al., 2020; Dunlop et al., 2024). Similarly, students with physical disabilities may encounter barriers to mobility and participation, reducing opportunities for social engagement and collaborative learning. These findings support theoretical perspectives emphasizing the importance of social experience for emotional well-being: Adler (Stangor & Frantz, 2023) highlights that limited early social interactions contribute to feelings of inferiority and isolation, while Erikson's psychosocial theory underscores that successful identity development relies on acceptance and belonging within peer networks (Dhabhai, 2025; Brown et al., 2019).

Furthermore, the results echo previous empirical studies showing elevated loneliness among ASwD in inclusive contexts. For instance, hearing-disabled adolescents in New Zealand IESs reported greater loneliness than their non-disabled peers, attributable to stigma and social barriers (Kent, 2003; Judah, 2005). Similarly, individuals with visual disabilities demonstrated higher loneliness when self-stigma was pronounced and peer support was limited, highlighting the mediating role of supportive social relationships (Kong et al., 2020; Dunlop et al., 2024). Collectively, these studies reinforce that physical integration alone does not ensure social or psychological inclusion; rather, the quality of interactions, peer acceptance, and teacher facilitation are critical determinants of adolescents' sense of belonging and well-being (Lin et al., 2025; Pavri & Monda-Amaya, 2001).

In sum, the findings carry important educational implications. Inclusive education must extend beyond curricular access to incorporate structured psychosocial support, peer-mediated interventions, and teacher training in differentiated instruction and effective inclusion practices. Schools should foster collaborative activities that enhance peer understanding, promote acceptance of diversity, and actively address barriers that may contribute to social exclusion. By attending to both academic and psychosocial dimensions, inclusive settings can more effectively support the holistic development of ASwD and mitigate the risks of psychological loneliness.

## CONCLUSION

This study offers a deeper understanding of the psychological experiences of ASwD within inclusive education settings and SPCs in Jordan, particularly regarding FPLs. The findings revealed substantial variation in loneliness depending on the type of disability; students with hearing impairments reported the highest levels of loneliness, followed by those with visual, physical, and learning disabilities. These results indicate that current forms of school inclusion do not necessarily guarantee improved psychological well-being for ASwD, and that mere

physical placement in mainstream classrooms without adequate support may, in some cases, exacerbate feelings of isolation rather than reduce them. This underscores the need for a holistic approach to inclusion—one that goes beyond structural integration to address the psychological, social, and emotional needs of students.

The study highlights the importance of designing targeted psychosocial support programs that take into account the individual differences among students based on disability type. Such programs should include evidence-based strategies aimed at strengthening social connectedness, enhancing peer support, and developing emotional resilience. The findings also stress the need for using culturally adapted standardized assessment tools—such as the Jordanian version of the Loneliness Scale—to enable teachers and school psychologists to systematically monitor students' mental well-being and make evidence-informed decisions. From a broader policy perspective, the results point to the necessity of revisiting inclusion policies to ensure clear standards of implementation quality, specialized teacher training, structured support mechanisms, and ongoing monitoring of students' psychological outcomes. The study further calls for more longitudinal and mixed-methods research to explore the antecedents of loneliness among ASwD, mediating mechanisms, and the most effective intervention models.

These findings have several practical implications for the various stakeholders involved in the educational process. For students, the results highlight opportunities to foster healthier social interactions, reduce experiences of marginalization, and enhance both academic and psychological well-being through more supportive school environments. For teachers, they emphasize the need to strengthen competencies in inclusive pedagogy, early identification of psychological risks, and the use of assessment tools to guide intervention planning. At the school level, the findings reveal the need for supportive institutional structures that include school counselors, peer-support programs, and continuous monitoring of mental health indicators, in addition to fostering a school climate grounded in acceptance and respect for diversity. For curriculum designers, the study points to the value of integrating life skills, social-emotional learning, and inclusive practices into curricula, as well as designing learning activities that accommodate the needs of students with different disabilities. For policymakers, the results underline the need to adopt national policies that embed psychosocial dimensions into inclusive education frameworks, allocate adequate resources for teacher training and psychological support, and establish national assessment systems to monitor student well-being.

Based on these findings, the study proposes several actionable recommendations. These include developing specialized psychosocial support programs tailored to different disability types; activating peer-support initiatives to strengthen social relationships and reduce loneliness; and providing comprehensive professional development for teachers focused on early detection of psychological difficulties and effective intervention strategies. The study also recommends adopting standardized and culturally validated mental-health assessment tools, enhancing school–family collaboration, and redesigning inclusive learning environments to

ensure meaningful participation for all students. Additionally, it calls for launching national awareness initiatives on the mental health needs of students with disabilities, integrating social-emotional learning skills into curricula, and promoting future research that investigates the psychological dimensions of inclusion over time. Collectively, these results offer a strong foundation for creating inclusive educational environments that prioritize mental well-being and support the holistic development of all learners.

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## APPENDIX

**Table 3.**

*Means and standard deviations for the items of study instrument*

| Adolescent Group | | Non-disabled Individuals | | Hearing disability | | Visual disability | | Physical disability | | Learning difficulties | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Item | M | SD | M | SD | M | SD | M | SD | M | SD |
| 1 | There's no one to talk to. | 2.01 | 0.84 | 2.79 | 0.78 | 2.63 | 0.68 | 2.53 | 0.60 | 2.52 | 0.83 |
| 2 | I can't stand being alone. | 2.03 | 0.91 | 3.32 | 0.58 | 2.76 | 0.66 | 2.66 | 0.61 | 2.68 | 0.75 |

| Adolescent Group | | Non-disabled Individuals | | Hearing disability | | Visual disability | | Physical disability | | Learning difficulties | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Item | M | SD | M | SD | M | SD | M | SD | M | SD |
| 3 | I don't have anyone I can turn to. | 1.99 | 0.87 | 3.16 | 0.76 | 2.63 | 0.68 | 2.65 | 0.62 | 2.58 | 0.79 |
| 4 | I no longer feel close to anyone. | 2.01 | 0.91 | 3.16 | 0.50 | 2.75 | 0.68 | 2.67 | 0.63 | 2.64 | 0.79 |
| 5 | I feel completely lonely. | 1.99 | 0.88 | 3.05 | 0.78 | 2.68 | 0.64 | 2.64 | 0.62 | 2.59 | 0.77 |
| 6 | I'm unable to connect with those around me. | 2.00 | 0.89 | 2.89 | 0.65 | 2.68 | 0.66 | 2.68 | 0.61 | 2.63 | 0.79 |
| 7 | My social relationships are superficial. | 2.00 | 0.90 | 2.89 | 0.56 | 2.65 | 0.63 | 2.64 | 0.62 | 2.60 | 0.74 |
| 8 | I feel a strong need to connect with others. | 1.98 | 0.87 | 2.95 | 0.62 | 2.72 | 0.71 | 2.68 | 0.61 | 2.64 | 0.75 |
| 9 | I'm unhappy about being so withdrawn. | 2.00 | 0.88 | 3.00 | 0.57 | 2.71 | 0.61 | 2.67 | 0.63 | 2.59 | 0.79 |
| 10 | It's difficult for me to make friends. | 1.99 | 0.89 | 3.21 | 0.53 | 2.76 | 0.68 | 2.64 | 0.60 | 2.63 | 0.77 |
| 11 | I feel like others are ignoring me. | 2.01 | 0.92 | 2.95 | 0.70 | 2.64 | 0.63 | 2.70 | 0.63 | 2.62 | 0.72 |
| 12 | No one really knows me well. | 2.02 | 0.91 | 3.16 | 0.60 | 2.71 | 0.65 | 2.72 | 0.62 | 2.54 | 0.77 |
| 13 | I feel isolated from others. | 2.04 | 0.90 | 3.11 | 0.80 | 2.63 | 0.61 | 2.72 | 0.65 | 2.66 | 0. |

| Adolescent Group | | Non-disabled Individuals | | Hearing disability | | Visual disability | | Physical disability | | Learning difficulties | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Item | M | SD | M | SD | M | SD | M | SD | M | SD |
| 14 | I feel excluded by others. | 2.03 | 0.90 | 3.16 | 0.68 | 2.63 | 0.65 | 2.72 | 0.63 | 2.60 | 0.76 |
| 15 | There are people around me, but they don't interact with me. | 2.02 | 0.87 | 3.00 | 0.74 | 2.65 | 0.63 | 2.63 | 0.60 | 2.69 | 0.82 |
| 16 | I'm not happy doing things alone. | 2.03 | 0.88 | 3.16 | 0.68 | 2.61 | 0.70 | 2.69 | 0.66 | 2.69 | 0.80 |
| 17 | I lack companionship. | 2.03 | 0.92 | 2.95 | 0.70 | 2.74 | 0.58 | 2.71 | 0.63 | 2.67 | 0.82 |
| 18 | I feel like no one truly understands me. | 2.03 | 0.89 | 3.05 | 0.70 | 2.58 | 0.59 | 2.70 | 0.59 | 2.62 | 0.77 |
| 19 | I find myself waiting for someone to call or message me. | 2.03 | 0.88 | 3.00 | 0.47 | 2.79 | 0.62 | 2.64 | 0.61 | 2.70 | 0.78 |
| 20 | No one shares my interests and thoughts. | 2.02 | 0.89 | 2.89 | 0.73 | 2.57 | 0.62 | 2.63 | 0.59 | 2.59 | 0.79 |
| **Total** | | 40.28 | 15.36 | 60.84 | 9.42 | 53.5 | 8.79 | 53.33 | 7.86 | 52.49 | 12.60 |