



Listening to the voices of adolescents with intellectual disabilities: Exploring perception of post-school transition

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ABSTRACT

Background: Life skills play a key role in the transition of a child with intellectual disabilities into a young adult. According to previous research, students with intellectual disabilities often lack such skills. However, most studies on this topic have been conducted on teachers or parents. Limited studies are available on adolescents with intellectual disabilities. Therefore, this study investigates how adolescents with disabilities perceive their competence in life skills post-school. **Method:** The sample consisted of 201 adolescents with disabilities (67 % with mild intellectual disabilities and 33 % with other disabilities).

Results: The results revealed that adolescents with intellectual disabilities' perception of their life skills in all areas (independent living, personal money management, community involvement and usage, leisure activities, health, and social/interpersonal relationships) was significantly lower compared to adolescents with other disabilities. In four out of the six sub-scales, female respondents reported that their competence level in life skills was lower compared to males. In addition, adolescents with disabilities in daycare centers stated that they could establish better social and personal relationships when compared to adolescents from other schools.

1. Introduction

Adolescents with intellectual disabilities (ID) are increasingly concerned about their post-school transition (Austin et al., 2018; Midjo & Aune, 2018). The period of leaving school is often perceived as highly stressful, mainly due to the significant increase in self-reliance and independence required to manage daily living (Björnsdóttir et al., 2015; Young-Southward et al., 2017). Hence, they must acquire numerous skills to increase their likelihood of living independently, finding jobs, and receiving opportunities in post-school life (Poppen et al., 2017; Sheppard & Unsworth, 2011).

Numerous studies have concentrated on practices facilitating successful transitions for individuals with disabilities across various countries, such as the United States, Cyprus, Ireland, Greece, Bulgaria, the Netherlands, Romania, Spain, and the United Kingdom (Carter et al., 2013; Leonard et al., 2016; Ravenscroft et al., 2017; Pallisera et al., 2018; Talapatra et al., 2020). However, research in this area has been notably less extensive in the Arabic region, particularly in Saudi Arabia (Alnahdi & Elhadi, 2019). Successful transition from school to post-school life requires adolescents with disabilities to develop independence, specific knowledge, and other

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skills (Yildiz & Cavkaytar, 2020). Improving the life skills of adolescents with ID helps them to live independently, while improving their quality of life and fostering improved social interaction and inclusion (Finn & Hutchinson, 2017; Kilincaslan et al., 2019; Raudeliunaite & Gudžinskienė, 2017). Life skills are a key aspect of achieving independence, and it is important to emphasize the possession of these skills to support them in developing independence (Kilincaslan et al., 2019).

Individuals with disabilities require skills in independent living, financial management, and community participation for successful post-school independence, with employability skills having a lower impact on transition efficiency (Clark & Patton, 2021; Wandry et al., 2013; Finn et al., 2014). Adolescents with disabilities often lag behind their non-disabled peers in readiness for post-school transitions, particularly in education and communication skills (Tottle, 2003). The proficiency in transitional skills could vary based on the disability type (Carter, Trainor, Sun, Owens, 2009; Carter et al., 2014). Some research has shown how to improve life skills and self-determination among adolescents with intellectual and developmental disabilities. Sheppard and Unsworth (2011) demonstrated the effectiveness of a short-term residential program in significantly enhancing daily living skills and self-determination for 31 adolescents with intellectual and developmental disabilities.

The significant challenge lies in the insufficient transition readiness of adolescents with ID for post-school life. This study, distinct in its approach, prioritizes understanding their transition preparedness by analyzing their perspectives. By focusing on the life skills, strengths, needs, and personal experiences of adolescents with ID, this study aims to help address the gaps in current research. Its importance lies in the emphasis on the voices of adolescents with ID, aiming to understand how we can tailor and enhance support programs and services based on their unique insights and experiences. Recent studies, including those by Bouck and Satsangi (2015), highlight a significant gap in research focus on students with mild intellectual disability (ID), pointing out that these individuals often receive less individualized attention in studies. This oversight occurs as students with mild ID are frequently aggregated with those having moderate to severe ID or other high-incidence disabilities, thus potentially obscuring the unique challenges and needs of the mild ID population. Moreover, the characterization of individuals with mild ID, typically denoted by IQ scores ranging from 55–70 (Bouck, 2012; Schalock et al., 2010), further supports the distinctiveness of this group from other disability categories. This differentiation is crucial as it underscores the necessity of examining students with mild ID in comparison to their peers with other disabilities, to develop a clear understanding of their specific educational and transitional service needs.

Over the past three decades, Saudi Arabia has notably advanced its transition services for individuals with intellectual disabilities, aiming for a seamless progression through life stages and integrating these efforts into Ministry strategies. As regards transition programs in Saudi Arabia, it's important to note that the Organizational Guide for Special Education in Saudi Arabia (2019) provides a comprehensive framework for services offered to students with disabilities, delineating specific plans to be implemented in schools, both for boys and girls, especially during middle and high school. This guide outlines three essential plans designed to support students with disabilities, one of which is the Transition Plan. The Transition Plan is specifically aimed at preparing individuals with disabilities for the transition between stages or environments, whether academic, social, or professional. This includes a focus on facilitating the transition into public work environments, which is critical for the integration of individuals with disabilities into the broader community and workforce. The programs outlined under the Transition Plan extend beyond secondary education, building on the foundation of individualized educational plans developed for each student. These plans detail the nature of the programs, their delivery methods, duration, and anticipated benefits to the individuals, ensuring a tailored approach to meet the unique needs of each student.

Despite the evident commitment to facilitating the transition from educational environments to broader societal participation, the actual implementation of these policies sometimes falls short of expectations, as highlighted by Alnahdi & Elhadi (2017), Al-quraini (2017), and Almalki et al. (2021). Variability in service effectiveness has been observed by educators, policymakers, and families, revealing a disconnect between the intended goals and real-world outcomes (Almutairi, 2018; Alnahdi, 2013; and Almalki et al., 2021). This underscores the need for continuous dialogue, research, and revisions to ensure that policy intentions are effectively translated into practice, truly benefiting the targeted individuals. While the Arabic literature might not extensively focus on enhancing the independence of adolescents with intellectual disabilities (ID), there is some acknowledgment and effort elsewhere in the world exploring contributing factors to a successful transition to independence. For example, in the United States, Carter et al. (2012) highlight the role of early work experiences and self-determination. Similarly, in Belgium, Benoot et al. (2022) examined the impact of residential care settings on the aspirations and quality of life of individuals with intellectual disabilities, suggesting that mastering money management skills could positively affect their societal integration.

The utilization of the Transition Planning Inventory (TPI) across various studies underscores the crucial role of self-reports from students with disabilities in understanding their transition needs and strengths. For instance, research by Carter et al. (2014), involving 134 students with intellectual and developmental disabilities, their parents, and teachers, demonstrates a significant agreement among students, parents, and teachers on transition domains, highlighting the reliability of self-reports. Additionally, Carter et al. (2009) worked with 160 students with emotional, behavioral, or learning disabilities to further underscore this point. Studies by McNair (2002), involving six college students with learning disabilities, and by Finn et al. (2016), with six adults with intellectual disabilities and their roommates, reveal that self-reporting provides unique insights, particularly in areas such as self-determination, communication, and interpersonal relationships. The internal consistency and test-retest reliability noted in these studies, like the one by Rehfeldt et al. (2012) with 56 students with disabilities, affirm the validity of the TPI for capturing students' perspectives. Collectively, these studies, involving diverse samples ranging from high school and college students with learning disabilities to adults with intellectual disabilities, advocate for the inclusion of self-reports in transition planning. This approach aims to accurately reflect students' views and experiences, thereby informing more tailored support services.

The current landscape of research indicates a significant gap in understanding the transition readiness of adolescents with ID for post-school life. This gap points to a need for more focused studies on the preparation and support these individuals require to successfully navigate the shift from educational settings to adult life, including employment, higher education, and independent living.

The research gap becomes significantly wider when considering the perspectives of adolescents with ID themselves regarding their transition readiness for post-school life. This aspect of research is crucial yet often overlooked, as the firsthand insights of these adolescents can provide valuable information on their needs, challenges, and aspirations during this critical transition period. Understanding their viewpoint is essential for developing tailored support systems that truly resonate with their experiences and expectations.

1.1. The current study

While research about individuals with ID has increased recently, studies focusing on the opinions of adolescents with ID remain scarce. Despite acknowledging the need to hear student voices, most researchers have overlooked their participation (Brooker et al., 2015; de Haas et al., 2022). The involvement of adolescents with ID is crucial for exploring the capabilities they possess and making the research more useful, credible, and valuable to them (De Haas et al., 2022). Therefore, this study fills the research gap by representing a sample of adolescents with ID and other disabilities underrepresented in the scientific literature. The current study aims to answer two questions:

1. What is the level of competence of adolescents with ID in life skills from their perspective?
2. What are the factors that might affect their acquisition of life skills?

2. Method

2.1. Procedure

Ethical approval for this study was procured from the institutional review board headed by the Deanship of Scientific Research at Prince Sattam bin Abdulaziz University. This was followed by an announcement seeking participation from teacher volunteers from various regions of the Kingdom of Saudi Arabia. Some volunteers from different cities like Taif and Riyadh also came forward to participate. They were contacted individually, and the scale was explained by the second author; the scales were then administered among the participants. Following this, the approval of the Department of Education in the regions of Riyadh and Taif was obtained for the application of the scale to the adolescents in schools, after obtaining informed consent from both the adolescents and their parents. The study focused on recruiting samples from middle and high school students who had been diagnosed with mild intellectual disabilities within their educational institutions. The data were recorded electronically either in the schools or at the participants' homes because of COVID-19. To ensure the validity of the survey, the test team supervised the data collection, which were either conducted face-to-face or via video calling software.

The scale was applied to students aged 13–21 years in school. The method of applying the scale was flexible according to the student's disability and severity. In some cases, the scale was completed independently by the student (for example, some participants with hearing disabilities); in other cases, the scale was completed with guidance, either by reading the items and having the student follow along to complete the scale or by providing a simplified explanation of requirements according to the item description list attached to the scale.

The application time varied depending on the participants and how they completed the scale, mostly around 20 min. When visiting the school, the administration was asked to identify only students with mild disabilities. Therefore, the participants in this study had only mild disabilities. (We relied on the school's identification of students, and no access to student files or measures to clarify the disability level were made). Demographic information was collected from the other forms of the scale about teachers and families. In the Zoom application, the second author shared the screen with the participant to view the scale items, which were then read to them. This approach was especially used for participants with mild ID who required the items to be read. The students would then determine their level, in the presence of a parent, either the mother or the father. The distribution of application methods was 85 % in schools and 15 % online, encompassing 22 schools and three daycare centers.

Table 1
Demographic information of participants.

Gender	Male	53	26 %
	Female	148	74 %
Disability	ID	134	67 %
	Others	67	33 %
Age	13-15	76	38 %
	16-18	70	34 %
	19-21	30	15 %
	22 +	25	12 %
Special education service location (School type)	General education	39	19 %
	Special education	125	62 %
	Daycare center	37	18 %

2.2. Sample

The sample consisted of 201 students with disabilities. About 74 % of the sample was female, and 26 % was male; 72 % were aged between 13 and 18; 15 % were between 19 and 21; and 12 % were 22 and older. The majority had ID (67 %), and 33 % had other disabilities including hearing impairment, visual impairment, and learning disabilities. [Table 1](#) gives an overview of the demographic variables of the sample. Subjects in the study sample were previously diagnosed by the Ministry of Education and received services based on that diagnosis. In Saudi Arabian schools, students with ID are identified through intelligence tests such as the Wechsler Intelligence Test ([Wechsler, 2008](#)) or the Stanford-Binet test ([Roid & Pomplun, 2012](#)). Additionally, the Vineland Adaptive Behavior Scale or another scale for adaptive behavior, which assesses social maturity, is also utilized. This identification process is initiated after the school receives a referral report indicating the presence of a disability and academic challenges that are not attributable to other disabilities like visual or hearing impairments. The definition of ID adopted by the Ministry of Education (for service eligibility), does follow the criteria set by the American Association on Intellectual and Developmental Disabilities. These criteria include IQ scores (from 75 and below), significant limitations in adaptive behavior, and that originate before the age of 22. It is important to clarify that the specific cutoff for mild ID in Saudi Arabia adheres to the internationally recognized standard, generally an IQ score ranging from 55 to 70. Regarding the issue of standardization across schools, we did not prescribe a uniform definition of mild ID for the teachers participating in our study. Instead, we depended on the existing diagnoses established by professionals and documented in school records.

2.3. Instrument

To assess the perception of life skills of adolescents with disabilities, six subscales of the Arabic version ([Alnahdi & Alwadei, 2023](#)) of the Transition Planning Inventory (TPI) (TPI-3; Clark & Patton, 2021) were used. The TPI is a detailed assessment framework that aids in the transition planning for adolescents with disabilities, focusing on essential areas such as work, learning, and living. Across its three iterations, the TPI has been tailored to collect input from a broad spectrum of respondents including students, parents, and educators, (Clark & Patton, 2021), ensuring a holistic view of each student's needs and strengths. Notably, the student version of the TPI was utilized here, demonstrating its utility in gathering direct insights from adolescents with disabilities.

We aimed to measure the perception of readiness of individuals with disabilities to transition to post-school life concerning life skills. The Arabic version of the life skills subscales showed Cronbach's alpha values that ranged from 0.83 to 0.90 for the student form. Positive results were achieved in the structural validity using confirmatory factor analysis, composite reliability values, and extracted average variance ([Alnahdi & Alwadei, 2023](#)).

The sub-scale measuring "Independent Living" included six items that measured the aspects of performing household chores and the ability to live independently after leaving home (e.g., "I know how to find a place to live when I leave home").

The sub-scale "Personal Money Management" consisted of four items and included the procurement of necessities and money management (e.g., "I buy everyday items that I need or want").

The sub-scale "Community Involvement and Usage" measured citizenship responsibility and social mobility using six items (e.g., "I am a responsible citizen and respect the law").

The sub-scale "Leisure Activities" included participation in various recreational activities and consisted of four items (e.g., "I go to different places for entertainment").

The sub-scale "Health" included five items and focused on healthcare aspects (e.g., "I stay physically healthy").

The sub-scale "Social/Interpersonal Relationships" referred to interaction with relatives and others and included parenting responsibilities. This sub-scale consisted of seven items (e.g., "I get along well with my family members and relatives").

The responses were obtained using a six-point Likert scale (0 = strongly disagree, 5 = strongly agree). The scale had good internal consistency concerning the current sample (Cronbach's $\alpha = .838$ to .903).

2.4. Statistics procedures

This study employed both descriptive and inferential statistical methods to explore the data. Descriptive statistics, such as means and standard deviations, were used to summarize the participants' ratings across sub-scales for various skills. This approach provided an overview of how participants perceived their abilities in different areas, highlighting areas of strength and potential improvement. Inferential statistics, particularly multiple regression analysis, were employed to explore the influence of several predictors of life skills. These predictors included the type of disability, gender, age, type of school, family education (the educational background of the person who is mainly responsible for taking care of the participants), teacher experience, and teacher qualifications. Before utilizing the regression results in my study, we verified the necessary statistical assumptions as recommended by [Tabachnick and Fidell \(2013\)](#) and [Warner \(2012\)](#). We confirmed the linearity between predictors and the dependent variable, assessed the normal distribution of residuals, and evaluated the independence of errors using the Durbin-Watson statistic, as being close to 2 supports the assumption of independence of errors. Additionally, we checked for multicollinearity by ensuring there were no high correlations between independent variables and verified this with variance inflation factor (VIF) values, adhering to accepted thresholds. These steps helped ensure that the regression model was well-specified and supported the validity of the outcomes. The regression analysis examined how these factors individually and collectively impacted participants' life skill ratings, identifying the most significant predictors of life skill competencies among the participants. This combination of statistical methods provided a comprehensive analysis, allowing for a greater understanding of how various factors influence the life skills of adolescents with ID.

3. Results

3.1. Descriptive statistics

Table 2 shows the means and standard deviations for each sub-scale and separately for subgroups (according to the type of disability, gender, age, type of school, family education, teacher experience, and teacher qualification). With a theoretical midpoint of 2.5 on a scale from 0 to 5, the analysis unveils an encouraging trend: participants generally rated their abilities positively, with means spanning from 3.03 to 3.88. The highest scores were obtained on the sub-scales “Leisure Activities”, and “Social/Interpersonal Relationships”. By contrast, the lowest scores were obtained on the sub-scales “Community Involvement and Usage” and “Personal Money Management” see Table 2). Overall, the data suggests that individuals perceive their skills in leisure activities and social/interpersonal relationships to be significantly higher than those in areas of independent living, personal money management, community involvement, and health management. The significant p-values (at $p < .01$) provide strong statistical evidence for the differences in perceptions among the surveyed individuals (see Appendix 1 for the paired t-tests).

3.2. Predictors of perceptions of life skills

The influence of potential predictors of the perceptions of life skills of adolescents with disabilities was examined using multiple regression analyses. Seven potential predictors were included in the calculation: type of disability (dummy coded; ID vs other disability), gender (female vs male), age range (13–15 years; 16–18 years; 19–21 years; 22 years and above), type of school (general education, special education, daycare center), family education (uneducated, high school degree, bachelor's degree, postgraduate degree), teacher experience (1–5 years; 6–10 years; 11 years and above) and teacher qualifications (diploma in special education, bachelor degree, postgraduate degree).

The results (see Table 3) indicate the type of disability variable was the strongest predictor in most of the six subscales (see also Fig. 1). Adolescents with ID rated their life skills on all six sub-scales (Independent Living, Personal Money Management, Community Involvement and Usage, Leisure Activities, Health, and Social/Interpersonal Relationships) significantly lower when compared to adolescents with other disabilities. However, the mean scores of both sub-groups remain mostly positive (see Table 2), that is, close to or above 3. For adolescents with ID, the mean scores are closer to 3, while for adolescents with other disabilities, they are closer to 4 (also see Fig. 1).

The results of the multiple regression analysis further indicated a gender influence in four out of the six sub-scales. Females' perceptions as regards their independent life skills, leisure activities, health, and social/interpersonal relationship skills are lower than males. Regarding the perceptions regarding personal money management and community involvement and usage, no gender differences were found.

Additionally, the type of school predicted the perception as regards levels of social/interpersonal relationships. Those adolescents who attended a school in which a high level of support (daycare centers) was offered rated their social/interpersonal relationship skills higher.

Table 2
Means and standard deviations of the sample and subsamples for each subscale.

Variables		IL (M, SD)	PMM (M, SD)	CIU (M, SD)	LA (M, SD)	H (M, SD)	SIR (M, SD)
Type of Disability	ID	2.84 (0.99)	2.79 (1.05)	2.75 (1.06)	3.73 (1.01)	3.05 (1.1)	3.68 (1.03)
	Other	3.84 (1.07)	3.66 (1.21)	3.58 (1.23)	4.17 (0.98)	3.77 (1.14)	4.15 (0.88)
Gender	Female	3.33 (0.96)	3.17 (1.08)	3.11 (1.02)	4.02 (0.86)	3.42 (0.99)	4.07 (0.78)
	Male	2.73 (1.41)	2.82 (1.40)	2.80 (1.53)	3.47 (1.28)	2.91 (1.48)	3.21 (1.29)
Age	13-15	3.26 (1.27)	3.14 (1.34)	3.16 (1.34)	3.84 (1.11)	3.3 (1.33)	3.71 (1.14)
	16-18	3.21 (1.16)	3.12 (1.12)	2.99 (1.21)	3.86 (1.08)	3.36 (1.16)	3.88 (1.06)
	19-21	2.88 (0.82)	2.71 (1.06)	2.76 (0.96)	3.87 (0.8)	3.08 (0.89)	3.94 (0.72)
	22 +	3.17 (0.8)	3.22 (0.90)	3.04 (0.74)	4.06 (0.76)	3.34 (0.85)	4 (0.69)
Type of School	General education	3.77 (1.09)	3.55 (1.21)	3.41 (1.30)	4.07 (1.14)	3.65 (1.21)	3.98 (1.04)
	Special education	2.97 (1.13)	2.93 (1.17)	2.90 (1.18)	3.77 (0.99)	3.17 (1.17)	3.73 (1.07)
	Daycare center	3.22 (0.9)	3.09 (1.06)	3.04 (0.99)	4.04 (0.95)	3.32 (1.01)	4.06 (0.69)
Family Education	Uneducated	2.86 (0.74)	2.98 (1.19)	2.83 (1.16)	3.39 (1)	3.21 (1.05)	3.4 (1.12)
	High school	3.26 (1.22)	3.22 (1.20)	3.19 (1.24)	3.88 (1.05)	3.46 (1.25)	3.92 (1.09)
	Bachelor's	3.11 (1.07)	2.94 (1.16)	2.85 (1.12)	3.97 (0.99)	3.09 (1.05)	3.85 (0.87)
	Postgraduate	3.28 (1.07)	2.92 (0.92)	3.19 (0.96)	4 (0.76)	3.42 (0.98)	3.69 (0.92)
Teacher Experience	1-5	3.19 (0.96)	3.01 (1.08)	2.98 (1.01)	3.86 (1.13)	3.36 (0.94)	4.09 (0.62)
	6-10	3.05 (1.13)	2.93 (1.19)	2.87 (1.20)	3.76 (1.01)	3.17 (1.28)	3.61 (1.16)
	11 +	3.36 (1.21)	3.38 (1.19)	3.33 (1.23)	4.08 (0.92)	3.44 (1.09)	4.06 (0.87)
Teacher Qualification	Diploma in special education	3.56 (1.03)	3.65 (1.00)	3.53 (0.84)	4.65 (0.41)	4.28 (0.71)	4.71 (0.4)
	Bachelor's	3.19 (1.15)	3.07 (1.20)	3.03 (1.20)	3.84 (1.04)	3.31 (1.14)	3.84 (0.98)
	Postgraduate	3.04 (1.02)	3.05 (1.12)	2.94 (1.11)	3.96 (0.94)	3.06 (1.23)	3.71 (1.17)
	Overall	3.17 (1.12)	3.08 (1.18)	3.03 (1.18)	3.88 (1.02)	3.29 (1.16)	3.84 (1.01)

M= Means, SD= standard deviations, IL= Independent Living, PMM= Personal Money Management, CIU= Community Involvement and Usage, LA= Leisure Activities, H= Health, SIR= Social/ Interpersonal Relationships

Table 3
Multiple regression Statistics to predict Living Skills adolescents with disabilities.

Dependent Variable	Predictors	Standardized Coefficients Beta	t	Sig.	Effect Size*
Independent Living	(Constant)		.441	.660	
	Type of Disability	.472	5.643	.000	0.374
	Gender	.220	3.108	.002	0.212
	Age	-.038	-.446	.656	-0.017
	School	.154	1.627	.105	0.105
	Family Education	.005	.075	.940	0.001
	Teacher Experience	.031	.431	.667	0.038
	Teacher Qualification	-.043	-.630	.529	-0.042
Personal Money Management	(Constant)		.922	.358	
	Type of Disability	.390	4.432	.000	0.305
	Gender	.123	1.652	.100	0.101
	Age	.050	.562	.575	0.052
	School	.119	1.194	.234	0.079
	Family Education	-.079	-1.176	.241	-0.085
	Teacher Experience	.102	1.338	.182	0.094
	Teacher Qualification	-.033	-.457	.648	-0.029
Community Involvement and Usage	(Constant)		.671	.503	
	Type of Disability	.392	4.436	.000	0.304
	Gender	.125	1.664	.098	0.105
	Age	-.033	-.370	.712	-0.016
	School	.189	1.883	.061	0.128
	Family Education	-.054	-.795	.428	-0.058
	Teacher Experience	.089	1.152	.251	0.082
	Teacher Qualification	-.031	-.424	.672	-0.027
Leisure Activities	(Constant)		1.252	.212	
	Type of Disability	.244	2.747	.007	0.193
	Gender	.246	3.265	.001	0.215
	Age	.027	.298	.766	0.04
	School	.153	1.519	.131	0.096
	Family Education	.096	1.406	.161	0.096
	Teacher Experience	.151	1.957	.052	0.143
	Teacher Qualification	-.024	-.330	.742	-0.019
Health	(Constant)		2.349	.020	
	Type of Disability	.302	3.417	.001	0.239
	Gender	.206	2.754	.006	0.177
	Age	.021	.233	.816	0.034
	School	.087	.874	.383	0.052
	Family Education	-.103	-1.518	.131	-0.111
	Teacher Experience	.057	.744	.458	0.056
	Teacher Qualification	-.139	-1.919	.056	-0.132
Social/ Interpersonal Relationships	(Constant)		1.576	.117	
	Type of Disability	.266	3.161	.002	0.217
	Gender	.396	5.556	.000	0.371
	Age	.026	.311	.756	0.049
	School	.192	2.023	.044	0.124
	Family Education	-.011	-.178	.859	-0.022
	Teacher Experience	.133	1.824	.070	0.145
	Teacher Qualification	-.128	-1.854	.065	-0.128

bold = significant at $P < .01$, *Partial correlations

4. Discussion

Life skills are an essential component of an adolescent's independence during the transition to post-school life. For vulnerable people such as adolescents with ID, these skills are particularly significant. Self-advocates and researchers have constantly stressed the importance of hearing the voices of adolescents with disabilities. However, few studies have targeted life skills from the perspective of such adolescents. To overcome this research gap, this study examined the extent to which adolescents with ID or adolescents with other disabilities perceive their life skills.

Descriptive statistics were determined, and the results reveal that adolescents with disabilities perceive themselves as having sufficient life skills, particularly regarding leisure activities or social/interpersonal relationship skills. The results show that adolescents rated their life skills regarding leisure activities and social interpersonal relationships to a higher degree when compared to the other four other aspects. This finding aligns with Carter et al. (2014), who also indicated that teacher ratings suggest adolescents with ID are better prepared for recreational activities and personal and social relationships. Although the results confirm that adolescents possess these skills to a greater extent than other life skills, there remains a need to focus on developing these skills to attain higher levels. This will improve the self-confidence, mental and emotional health, and quality of life of adolescents with disabilities while also

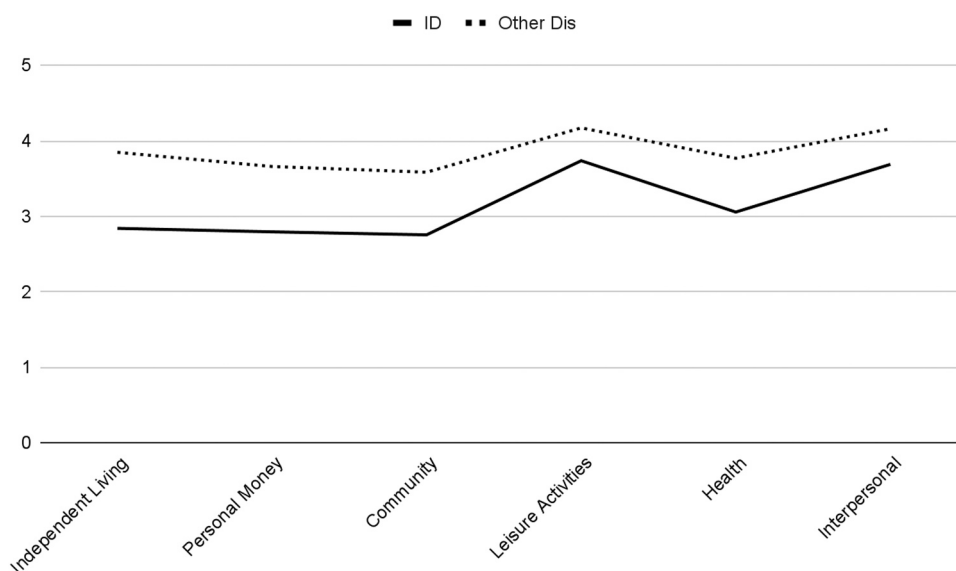


Fig. 1. Life skills of adolescents with disabilities (adolescents with ID and adolescents with other disabilities).

offering the opportunity to develop social interactions (Slavkovic et al., 2021; Tough et al., 2017). In addition, the abilities possessed by adolescents, about leisure activities and interpersonal relationships, can be used to develop other life skills; they can thus become more independent.

The results further revealed that adolescents with disabilities rated their ability regarding aspects of community involvement and usage and personal money management at a lower level compared to those in the other four sub-scales. Although adolescents with disabilities perceive themselves with a high capacity for social and interpersonal relationships, these may not be sufficient to enhance their opportunities to participate in and benefit from society. School activities should extend beyond the school's boundaries; field visits to community places, participation in social events, and volunteer work can contribute to developing community skills (Amado et al., 2013). Schools should therefore train adolescents with disabilities in how to use and be a part of the community in addition to utilizing community resources (Tough et al., 2017). This will help adolescents be more independent meet their needs and manage affairs in a better manner. This applies to any institution that provides services for adolescents with disabilities. This finding is consistent with the study conducted in the US by Carter et al. (2014), which found that teachers reported a low level of community engagement among adolescents with ID. Despite recognition that adolescents should be given training to participate and navigate in the community, they are not adequately equipped and receive few opportunities for social participation. A low level of community engagement may be related to money management, which could be related to the level of training that adolescents with disabilities receive at home and in school. As parents conduct purchasing and other finance-related tasks, this may hinder their children's acquisition of money management skills (Parish & Cloud, 2006). Developing financial skills is an important part of life skills for adolescents with disabilities. This allows them to transition beyond school and equips them with personal money management skills. The skills of adolescents with disabilities should be developed to make them realize the value of money and how to spend it to meet their basic needs. This would equip them with skills such as saving and spending (Barczak, 2019).

Overall, the perception regarding skills assessed (independent living, personal money management, community involvement and usage, leisure activities, health, and social/interpersonal relationships) were rated on average at a slightly higher level. However, there are also those with lower skills in the overall assessment. Each person lacking life skills must be supported and empowered. Hence, it is important to discover the variables that predict adolescent skills. The results of this study show that adolescents' perceptions of their readiness for life skills across all sub-scales are strongly associated with the type of disability. When comparing the scores of adolescents with ID and adolescents with other disabilities, we found that adolescents with ID perceived their life skills lower in all assessed areas. This finding is consistent with the previous findings that adolescents with ID lack life skills (Kilincaslan et al., 2019; Woolf et al., 2010). Hence, there is a need for additional training and support from schools for adolescents with ID to improve their life skills compared to other adolescents with disabilities. The literature indicates that the schools in King Saudi Arabia (KSA) place too much emphasis on academic skills while ignoring those critical for independence (Alnahdi, 2014; Almalky, 2018).

Additionally, regarding disability types, gender also predicted life skills to a significant degree. The results showed that the female adolescents with disabilities expressed possession of higher-level life skills in the four sub-scales (independent living, leisure activities, health, and social/personal relationships). In the Kingdom of Saudi Arabia, young males and females are educated separately (Alnahdi, 2014). The basic curricula are the same for both genders except for one component. This is family education for females, in which they receive lessons focusing on aspects such as using household appliances, managing stress, arranging the kitchen, preparing meals, dealing with accidents at home (such as food poisoning, or accidents such as electrical accidents, drowning, fires, etc.). By contrast, male students do not receive these lessons, and this may have caused the differences indicating female students' increased ability to

acquire life skills. Currently, basic curricula in schools have been standardized for both genders, which is likely to reduce future differences. This differs from [Tuttle's \(2003\)](#) finding that male participants were more prepared in the health domain.

Finally, our results showed that adolescents with disabilities in daycare centers perceived that they were better able to form social and personal relationships. They perceived a positive ability to make friends, interact with others, and act appropriately in social situations. Daycare centers offer a more restricted environment, yet the subjects rated their ability to establish social and personal relationships higher than their peers in less restricted settings (e.g., general education with peers without disabilities and special education in special classes attached to general education schools). The reason may be the nature of the programs offered by the daycare centers. They focus on outside activities and field trips to prepare and equip the students to acquire the life skills necessary to meet needs and lead a socially stable life, rather than focusing on academic skills ([Alwadei, 2021](#); [Derderian, 2015](#)). Additionally, schools have a less restricted environment in Saudi Arabia and follow a specific system that focuses on the academic curricula, with limited activities and events supporting social inclusion. Schools need to design activities and create opportunities that facilitate positive interaction between adolescents with disabilities and their peers without disabilities.

4.1. Limitations

A limitation in the current study that must be addressed is that other disabilities were not divided into subgroups. Therefore, the sub-samples of participants with other disabilities (e.g., hearing impairment, visual impairment, and learning difficulties) were insufficient to make specific group comparisons. Moreover, when grouping participants, it must be stressed that even the adolescents with ID group were highly heterogeneous. Future research should consider the specific abilities, motivations, and interests of the participants to obtain greater in-depth information. Further, the data collection process were impacted by the gender of our research assistants, who were predominantly female. In the context of the Kingdom of Saudi Arabia, where gender segregation in educational institutions is practiced, our female research assistants encountered easier access and greater receptivity within female schools compared to male-only schools. This skewed our participant demographics towards a higher representation of females. This underscores the challenges of achieving gender balance in research samples within certain cultural and logistical frameworks and suggests a need for strategic planning in future studies to mitigate such disparities. In addition, while our data collection procedures were flexible to accommodate participants with varying needs, this approach may have introduced inconsistencies in how information was gathered, particularly due to the reliance on support persons to interpret and assist in questionnaire responses. Additionally, the use of a six-point scale, while intended to capture a range of responses, may have contributed to potential confusion among participants, affecting the precision of the data collected.

4.2. Implications

Our results highlight some of the implications of our study. First, it indicates the importance of identifying the strengths and needs of adolescents with disabilities during transition planning to benefit them. Second, adolescents with disabilities, specifically adolescents with ID, require greater support to develop life skills. This calls for school staff to devote additional time and attention to developing those life skills that will be needed by adolescents after graduation, rather than focusing on academic skills. Third, the curricula and the training programs that are offered to students with ID should be revised to impart special education and different curricula. Fourth, it is important to implement training and practice in life skills on a larger scale as an essential part of the curricula offered to adolescents with disabilities. Transition plans should consider individual differences and each individual's needs. Fifth, targeted school activities and events will likely improve many skills needed by adolescents, such as forming social relationships with peers without disabilities. Sixth, schools are the primary element that facilitates the successful transition of adolescents with disabilities beyond school. In addition, stakeholders in Saudi Arabia should explore developing and supporting short-term residential programs, as highlighted by [Sheppard and Unsworth \(2011\)](#). This is a potential strategy for significantly improving life skills and self-determination in students with intellectual and developmental disabilities, ultimately contributing to their autonomy and societal participation.

5. Conclusion & future direction

Life skills are key prerequisites for attaining independence, especially for those with disabilities. These are required for a smooth transition to post-school life. To ensure that adolescents with disabilities attain the necessary skill levels, attention must be given to them at the school level. This requires substantial support from various sources. Schools must facilitate and support the development of life skills and other factors that contribute to a smooth transition, especially for vulnerable people such as adolescents with disabilities. Including life skills in the curriculum and transition plans will help in developing the necessary capabilities. Adolescents with ID require training in these skills more than their peers with other disabilities.

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CRedit authorship contribution statement

Ghaleb Alnahdi: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Arwa Alwadei:** Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Investigation, Data curation. **Susanne Schwab:** Writing – original draft, Visualization, Validation.

Declaration of Competing Interest

The authors declare no conflict of interest.

Data Availability

The authors do not have permission to share data.

Appendix 1. Paired Samples Test

Pairs comparisons		Mean Differences	t	df	Sig. (2-tailed)
Independent Living	Personal Money Management	0.09328	1.625	200	0.106
Independent Living	Community Involvement and Usage	0.14511	2.94	200	0.004
Independent Living	Leisure Activities	-0.70522	-10.77	200	< .01
Independent Living	Health	-0.11791	-2.043	200	0.042
Independent Living	Social/ Interpersonal Relationships	-0.66915	-10.744	200	< .01
Personal Money Management	Community Involvement and Usage	0.05182	1.119	200	0.264
Personal Money Management	Leisure Activities	-0.79851	-12.34	200	< .01
Personal Money Management	Health	-0.21119	-3.806	200	< .01
Personal Money Management	Social/ Interpersonal Relationships	-0.76244	-11.915	200	< .01
Community Involvement and Usage	Leisure Activities	-0.85033	-14.354	200	< .01
Community Involvement and Usage	Health	-0.26302	-5.356	200	< .01
Community Involvement and Usage	Social/ Interpersonal Relationships	-0.81426	-14.052	200	< .01
Leisure Activities	Health	0.58731	8.541	200	< .01
Leisure Activities	Social/ Interpersonal Relationships	0.03607	0.632	200	0.528
Health	Social/ Interpersonal Relationships	-0.55124	-11.655	200	< .01

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