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Perspectives of adolescents with disabilities and their parents regarding autonomous decision-making and self-determination

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ABSTRACT

Background: Parents' promotion of autonomous decision-making (PADM) is essential for adolescents with disabilities and constitutes the basis for maturation of self-determination (SD). SD develops based on adolescents' capacities and the opportunities offered to them at home and at school, to make personal decisions regarding their life.

Aim: Examine the associations between the PADM and SD of adolescents with disabilities from their own perspective and that of their parents.

Method: Sixty-nine adolescents with disabilities and one of their parents completed a self-report questionnaire including PADM and SD scales.

Outcomes: The findings showed associations between parents' and adolescents' reports of PADM, and opportunities for SD at home. PADM was associated with capacities for SD among adolescents. Gender differences were also apparent, with both adolescent girls and their parents reporting higher ratings of SD than adolescent boys.

Conclusions: Parents who promote autonomous decision-making among their adolescent children with disabilities start a virtuous circle by offering greater opportunities for SD within the home. In turn, these adolescents rate their SD as higher, and communicate this perspective to their parents. Consequently, their parents offer them more opportunities for autonomous decision-making at home, thus enhancing their SD.

What this paper adds

Self-determination (SD) is required throughout the lifespan and is imperative for people with a disability. The process of becoming self-determined accelerates during adolescent years, as older children begin to take control over their lives, consider their personal choices and preferences, and make plans and decisions according to their desires. This study examines the promotion of autonomous decision-making (PADM) and SD based on the ecological model that assumes that SD occurs between individuals and their environment in a reciprocal manner.

Since parents play a major role in promoting autonomous decision-making for their adolescent children with disabilities and providing them with opportunities for SD, these variables are examined by focusing on the perspectives of child-parent dyads. To the best of our knowledge, no previous research has examined the relationship between PADM and SD and none has examined capacities and opportunities for SD at home and at school from the perspectives of child-parent dyads. Our findings emphasize the essential role parents play in nurturing the development of SD while promoting autonomous decision-making and offering opportunities at home for

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SD. Adolescents experiencing this type of parenting report higher levels of PADM, higher capacities for SD, and more opportunities at home to practice SD. These findings offer hope that the human right to autonomy and SD of adolescents with disabilities will be enhanced thanks to the efforts of parents working together with their children with disabilities.

1. Introduction

Self-determination (SD) and autonomous decision-making are essential for people with disabilities (Erickson et al., 2015), as maintained by Article 12 of the Convention on the Rights of Persons with Disabilities (United Nations, 2006), which stresses the importance of respecting the personal autonomy of people with disabilities, taking into consideration their values and beliefs, while supporting them in carrying out their personal choices (Devi, 2013; Werner, 2012). Unfortunately, people with disabilities are not often offered sufficient opportunities to practice autonomous decision-making and to act in a self-determined manner.

The earliest opportunities to make choices, develop preferences, and practice decision-making are usually provided within the home setting (Cook et al., 1996). Schools also teach students with disabilities SD skills and offer opportunities to put these into practice (Carter et al., 2013). Adolescents, whether with disability or not, are challenged with developing their self-identity, practicing autonomous decision-making, and becoming more self-determined in their daily environments (home, school, extra-curricular activities) (Ow et al., 2021).

This article is based on the ecological model for SD that assumes that:

self-determination does not lie within the person, but rather it is the product of both the individual and the environment of the person using the skills, as well as the knowledge and beliefs at his/her disposal to act on the environment with the goal of obtaining valued and desired outcomes (Abery & Stancliffe, 2003, p. 27).

Our research examined adolescents with disabilities and their parents' perspectives on the promotion of autonomous decision-making (PADM) and SD within the microsystems of the home and school settings and the relationship between these variables.

1.1. Self-determination

SD refers to the individual's right "to act as the primary causal agent" (Wehmeyer, 2005, p. 117) "exercising the degree of control they desire over those areas of life that they consider important" (Abery & Stancliffe, 2003, p. 44). SD is influenced across the lifespan by interactions between factors at the individual and environmental levels (Abery & Stancliffe, 2003). Self-determined learning theory emphasizes the process through which people interact with opportunities for SD, offered while developing capacities that include knowledge, ability, and perceptions that enhance with age and experiences (Wolman et al., 1994). The ability to make active choices, based on personal preferences, is dependent on the frequency of opportunities offered by one's environments (Shogren, 2020). Notably, SD is a fundamental issue for people with disabilities and is viewed as an underpinning value for quality of life (Brown et al., 2013; Mumbardó-Adam et al., 2018).

Based on Bronfenbrenner's (1977) ecological systems theory, Abery and Stancliffe (2003) developed an ecological framework for understanding the complexity of SD. In the current study, we rely on this model and focus on SD occurring in the family and school settings, according to adolescents and their parents' perspectives, considering personal factors contributing to SD.

Most research regarding SD during adolescence has focused on school settings from the perspectives of students and/or teachers, with less research considering parental perspectives. In Spain, adolescents and young adults (aged 13–22) without disabilities reported greater capacities and opportunities for SD at home compared to those with intellectual disability. The latter reported more opportunities to develop SD skills at school than at home (Mumbardó-Adam et al., 2017a, 2017b). Research comparing adolescents with disabilities to educators and parents reached different findings. A recent US study found no significant correlations between adolescents' ratings and those of parents and teachers regarding ability and opportunities at home for SD (Tomaszewski et al., 2020). Regarding capacities for SD, students rated themselves higher than did their teachers and parents (Carter et al., 2010; Tomaszewski et al., 2020). Regarding ratings of opportunities for SD at home, Carter et al. (2010) found no differences between adolescents, educators, and parents, while in another study, they found that parents' ratings of opportunities at home were significantly higher than those of adolescents (Carter et al., 2006). Regarding opportunities for SD at school, Carter (2010) found no significant difference between teachers' and adolescents' ratings, while Carter (2006) and Tomaszewski (2020), found that adolescents and parents rated opportunities at school significantly lower than did educators.

From an ecological perspective, families mediate between their children and society, very often supporting them to interact successfully with their environment (Abery & Stancliffe, 2003). Comparing perspectives between adolescents with disability and their parents is imperative, given that a child's home offers the earliest opportunity to make choices, exercise control, and exhibit competence (Cook et al., 1996). Parents continue to support their children after concluding high school, while their children are expected to make choices and express their preferences regarding postsecondary education, career, independent living, etc. (Di Maggio et al., 2020; White et al., 2018). Therefore, in addition to examining adolescents' perspectives, it is essential to study the perspectives of parents regarding SD.

1.2. Promotion of autonomous decision-making

Over the last few decades, the notions SD and autonomy have frequently been interwoven and focus on two dimensions: the individual's capacity and independence from external pressure. Autonomy is commonly defined as the capacity for SD and self-

government, including the ability of living in line with one's own goals and aims rather than those forced upon him by others (Davy, 2015; Ho, 2008). Parental PADM lays the groundwork for the maturation of SD. PADM refers to the degree to which parents enable their child's autonomy regarding decisions relevant to their personal life (Soenens et al., 2007). Parents who value PADM will create opportunities to ensure its practice, thus preparing their child to become self-determined (Manzi et al., 2012). While research has shown that adolescents across cultures benefit from autonomy-supportive parenting (Chen et al., 2016; Van Petegem et al., 2015), parents of individuals with disabilities may experience conflict between their desire to foster independence and the desire to protect their child (Arellano & Peralta, 2013; Curryer et al., 2020). Some parents recognize the importance of SD and autonomy, while others hold paternalistic and overprotective attitudes that may hinder their child from developing autonomous decision-making and becoming self-determined (Reindl et al., 2016; Sabeh et al., 2020). Hitherto, PADM has only been examined from the perspectives of non-disabled adolescents and has not yet considered parents' reports (Soenens et al., 2007; Van Petegem et al., 2017), although the perspectives of both children and their parents are of value as each has a unique outlook that is complementary and not interchangeable (Eiser & Varni, 2013).

1.3. Individual factors of self-determination among people with disabilities

Several individual factors have been examined in relation to SD among people with disabilities. A meta-analysis has shown conflicting findings regarding the roles of age and gender in relation to SD (Mumbardó-Adam et al., 2017a, 2017b). While some found that older adolescents and adults showed higher levels of SD compared to younger adolescents (Shogren et al., 2013; Wehmeyer et al., 2011), others found no age differences (Carter et al., 2010; Wehmeyer et al., 2013). Findings regarding gender differences are also inconsistent, with some showing higher levels of SD among adolescent girls and women (Lee et al., 2012; Wehmeyer et al., 2011) and others finding no differences (Palmer et al., 2012; Vicente et al., 2019).

Beyond reexamining the role of age and gender, we examine the association between the level of everyday support required of caregivers and PADM and SD. While this variable has not been explored before, it is an important measure, given that the way parents view their child's support needs may be entrenched in a societal view that frequently equates between disabilities and lower independence. This common societal view may greatly differ from that of people with disabilities, who frequently view independence as relating to their ability to make decisions regarding their personal lives (Ho, 2008). Beyond the examination of age and gender as correlated with or predictive of SD (Vicente et al., 2020), as explored in previous research, and the addition of level of daily support, this research explores whether these three individual factors moderate the relationship between PADM and SD, an issue that has not yet been examined.

1.4. The current study

The ecological model for SD (Abery & Stancliffe, 2003) assumes it does not occur in isolation, but rather in a social context, within a reciprocal relationship between persons with disabilities and their environment. Hence, the environment influences individuals and individuals interact with their environment while learning to become more self-determined. Thus, the main aim of this study was to examine the associations between individual factors (age, gender, level of daily support), PADM, and SD of adolescents with disabilities from both their own and their parents' perspectives.

Based on our research model (Fig. 1), the following hypotheses and questions were examined:

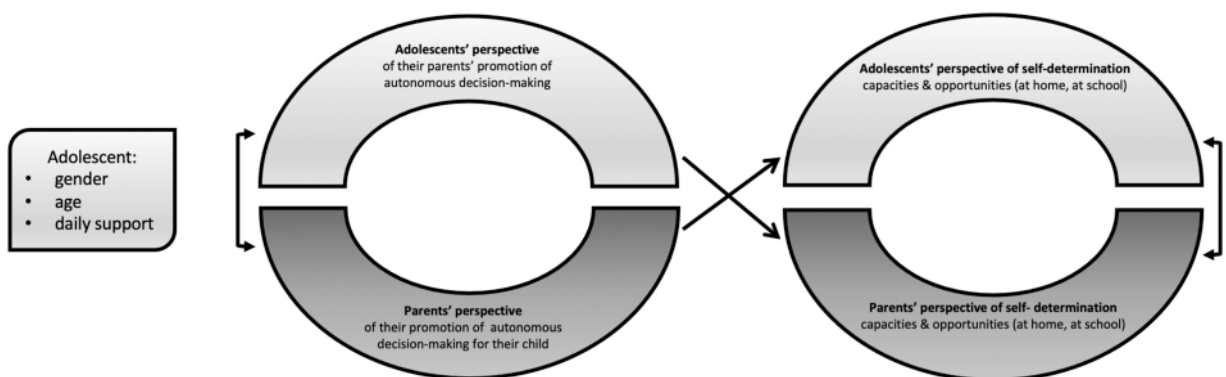


Fig. 1. Research model for promotion of autonomous decision-making and self-determination of adolescents with disabilities.

1.4.1. Hypotheses

H1. . Reports of PADM by adolescents and their parents will be correlated with their perspectives of SD (capacities and opportunities) – within adolescents, within parents, and between adolescents and parents.

H2. . Adolescents will report lower levels of PADM and opportunities for SD than their parents. They will report higher levels of capacities for SD than their parents.

1.4.2. Questions

Q1. . Will adolescents' gender, age, and level of daily support be related to PADM and capacities and opportunities for SD, according to their own and their parents' perspectives?

Q2. . Will adolescents' gender, age, and level of daily support moderate the relationship between PADM and capacities and opportunities for SD?

2. Material and methods

2.1. Participants

Our sample included Hebrew speaking adolescents with diverse disabilities and one of their parents. Participants with intellectual disabilities were excluded, given a pilot study that showed that the wording on the scales was too complicated for this group (Authors, submitted). The initial sample included 89 adolescents and 80 parents, of whom 69 were dyads. No significant differences were found between complete and non-complete dyads in terms of adolescents' age ($p = 0.994$), adolescents' gender ($p = 0.168$), parents' age ($p = 0.073$), and adolescents' level of daily support ($p = 0.405$).

Table 1 provides background information on participants. The adolescents were 40 boys and 29 girls, between the ages of 11 and 21 years. According to the parental report, the adolescents had various diagnoses, mainly physical disabilities, autism spectrum disorder, or complex learning disabilities. Participants studied mostly in special education classes or schools within junior high schools and high schools in Israel (in Israel, special education continues until the age of 21). Parents were mostly Jewish mothers, aged 35–60.

Table 1
Participants' background and sociodemographic characteristics (N = 69 Dyads).

Participants' background	N (%)
Adolescents	
Gender	
Male	40 (58.0)
Female	29 (42.0)
Mean age (SD), range	15.79 (2.66), 11–21
Level of education	
Elementary school	7 (10.1)
Junior high school	21 (30.4)
High school	41 (59.4)
Educational system	
Special education	46 (66.7)
General school system	23 (33.3)
Diagnosis	
Physical disability	23 (33.3)
Autistic spectrum disorder	17 (24.6)
Complex learning disability	13 (18.8)
Chronic disease	4 (5.8)
Sensory impairment	3 (4.3)
Emotional-behavioral	2 (2.9)
Multiple disabilities	7 (10.1)
Level of daily support (parental report)	
Independent	22 (31.9)
Requiring minimal daily support	16 (23.2)
Requiring some daily support	13 (18.8)
Requiring significant daily support	12 (17.4)
Fully dependent	6 (8.7)
Parents	
Mother	65 (94.2)
Father	4 (5.8)
Mean age (SD), range	46.35 (5.93), 35–60
Ethnicity	
Jewish	67 (97.1)
Arab	2 (2.9)

2.2. Procedure

The research was approved by the Israeli Board of Education and the ethics committee of the Paul Baerwald School of Social Work and Social Welfare at the Hebrew University of Jerusalem. Recruitment of individuals and families raising a child with a disability is known to be very challenging (Werner & Shulman, 2015); all the more so considering that the majority of the data collection took place during COVID 19—February 2020 through April 2021. Thus, we opted to use snowball recruitment via personal acquaintance of the main researcher with professionals in the disability field. These professionals were asked to interest parents and adolescents with whom they were familiar. Contact information of parents and adolescents who expressed interest in the study was provided to the main researcher.

These parents and adolescents were sent a WhatsApp message that included a brief explanation of the research aims and a link to a Google Forms questionnaire. The form included a short introduction to the aims of the research, participant inclusion criteria, and a statement of confidentiality. Parents were asked to provide consent for their own participation and their children's participation. Adolescents provided consent for their own participation. Thereafter, a message and the questionnaire link were sent to the parents. Families who had no access to WhatsApp received soft copy questionnaires via e-mail. To match between dyads, while ensuring anonymity, parents and children were requested to provide a code (four digits of a phone number). Adolescents were offered support in completing the questionnaire via a WhatsApp video call or Zoom. Questionnaire completion time was approximately ten minutes for parents and twenty for adolescents.

2.3. Measures

2.3.1. Self-determination

Parents were asked to complete the parent version of the American Institute for Research Self-Determination Scale (AIR-SDS; Wolman et al., 1994). This version includes 18 items—6 measuring the child's capacity and 6 each for opportunities at home and opportunities at school. An example from the capacity section: "My child knows what she needs, likes, and is good at." An example from the opportunity section: "At home/school people listen when my child talks about what (s)he wants and is good at."

Adolescents completed the student version of the AIR Self-Determination Scale (AIR-SDS, Wolman et al., 1994). The original student scale includes 24 items: the capacities subscale includes two sections relating to self-determined behavior: things students do (competencies) to be self-determined (6 items) and how they feel regarding their performance (6 items), for example: "I like to make plans to meet my goals." The opportunities section measures students' perception about SD opportunities provided to them at school (6 items) and at home (6 items), for example: "I have someone at school/home who can tell me if I am meeting my goals."

Cronbach's alpha for the student version SD competencies = 0.79, SD feelings = 0.70, opportunities at school = 0.79, and opportunities at home = 0.83 (Wong et al., 2017). There is no information regarding specific reliability and validity of the parents' version of the AIR-SDS. In the current study reliabilities were: a) for adolescents: capacities $\alpha = 0.74$, opportunities at school $\alpha = 0.79$, opportunities at home $\alpha = 0.80$, and (b) for parents: child capacities for SD $\alpha = 0.79$, school opportunities $\alpha = 0.79$, home opportunities $\alpha = 0.64$.

Scales were translated into Hebrew by the first author and back translated by an English speaker. Adaptations were made for adolescent scales to enable use by participants with various disabilities. These included language simplifications resulting in a 28-item scale for the AIR-SDS and 5 items for the PADM scale. In addition, Likert scales were reduced to three-point scales (Never (1), Sometimes (2), Always (3)), and the questionnaire design integrated color and symbols. These adaptations are described in depth elsewhere (Authors, submitted), including the results of our pilot study ($N = 33$) showing internal consistency of $\alpha = 0.91$ for PADM and $\alpha = 0.89$ for AIR-SDS. The AIR-SDS subscales' internal consistency showed $\alpha = 0.82$ for Capacities, and $\alpha = 0.86$ for both Opportunity scales. To enable comparison between adolescents and their parents, the Likert scales of the parent version were also reduced from 5 to 3 points. Scale scores were calculated by item means.

A principal component factor analysis with varimax rotation of the parents' 18 items ($n = 80$) converged into three factors. Capacities (6 items): Eigenvalue = 3.44, 19.11% of the variance, loadings 0.54–0.82. Opportunities at school (6 items): Eigenvalue = 3.12, 17.34% of the variance, loadings 0.57–0.76. Opportunities at home (6 items): Eigenvalue = 2.12, 11.80% of the variance, loadings 0.46–0.71 (with one item loading at 0.31).

A principal component factor analysis with varimax rotation of the adolescents' 28 items ($n = 89$) converged into three factors. When simplifying the questionnaire, we chose to split items that included two clauses and were confusing. Two of these items from the capacity section had a low variance and were removed. Within each item that was split, we kept the ones that showed a better loading. The analysis with 26 items showed: Capacities (12 items): Eigenvalue = 3.32, 12.77% of the variance, loadings 0.44–0.65 (with two items loading at 0.38 and 0.39). Opportunities at school (7 items): Eigenvalue = 3.31, 12.72% of the variance, loadings 0.44–0.74. Opportunities at home (7 items): Eigenvalue = 3.32, 12.77% of the variance, loadings 0.42–0.79. The resulting factorial structure, for both parents and adolescents, is conceptually consistent with the original scale structure, and was used in subsequent analyses.

2.3.2. Promotion of autonomous decision-making

Manzi et al. (2012) derived five items from the Autonomy Support of the Perceptions of Parents Scale (Grolnik et al., 1997), creating the Promotion of Autonomous Decision-Making scale (PADM). Internal consistency of this scale was found to be good, ranging between $\alpha = 0.79$ and $\alpha = 0.90$ in different studies (Soenens et al., 2007). The original scale measures adolescents' perception of their parents' autonomy support in the domain of decisions about their lives. Items were adapted for this study to enable both adolescent and parental reporting (examples: "My parents let me make my own plans for things I want to do" / "I enable my child to make his/her own

plans according to what he/she wants to do”). In our study, the parents’ version revealed an acceptable internal consistency $\alpha = 0.73$ and the child’s version a low, but acceptable internal consistency $\alpha = 0.61$. This scale was also translated into Hebrew by the first author and back translated by an English speaker. It was adapted in a similar fashion to the previous scale mentioned, including language simplifications and reduced Likert scales.

A principal component factor analysis of the parents’ Promotion of Autonomous Decision-Making items ($n = 80$) revealed one factor (eigenvalue = 2.46, 49.15% of the variance). Likewise, a principal component factor analysis of the adolescents’ Promotion of Autonomous Decision-Making items ($n = 89$) revealed one factor, as well (eigenvalue = 2.02, 40.44% of the variance). The resulting factorial structure, for both parents and adolescents, is conceptually consistent with the original scale structure, and was used in subsequent analyses.

2.3.3. Demographic information

Parents were asked for their gender, age, religion, and religiosity, child’s disability, schooling, and level of daily support (1 = independent, 5 = needs full support). Adolescents were asked for their gender, age, and disability.

2.4. Data analysis

Data were analyzed with SPSS version 27. Background characteristics were described with means and standard deviations, frequencies, and percentages, and compared between complete and incomplete parent-adolescent dyads with t-tests and chi-square tests. Principal components EFA with varimax rotation were calculated for the parents’ and adolescents’ SD and PADM scales. Criteria were eigenvalue > 1 and item loading > 0.40. Sample size did not allow for CFA. Internal consistencies were examined and variables were composed with item means. All distributions did not deviate from normality (skewness = -0.64 to -0.01, SE = 0.29), including that of the five-level daily support (skewness = 0.43, SE = 0.29), thus all were regarded as normally distributed.

Differences in PADM and SD, between complete and incomplete parent-adolescent dyads, were calculated with a series of t-tests. Next, for complete parent-adolescent dyads, the study variables were described with means and standard deviations, and Pearson correlations were calculated between them. T-tests were calculated for gender differences in the study variables, and Pearson correlations for adolescent age and level of daily support with the study variables. Parent-adolescent differences, and differences within parents and within adolescents, were examined with a multivariate analysis of covariance, controlling for the adolescents’ gender. Significant interactions were interpreted with estimated marginal means. Power analysis (Paul et al., 2009) for regression models showed that for a regression model with four predictors, moderate effect size $f^2 = .20$, $\alpha = 0.05$, and power = 0.80, the required sample size was 65 participants. For a general within-factors MANOVA model, comparing two measurements (parents/adolescents), with a low-moderate effect size $\eta^2 = .06$, $\alpha = 0.05$, and power = 0.80, the required sample size was 65 participants.

The study model was first examined with six multiple regression models, and then with a path analysis, using AMOS version 27. Chi square, NFI, NNFI, CFI, and RMSEA were used as measures of fit. Adolescent gender was controlled for the independent variables and the dependent ones were allowed to correlate among themselves. According to the two research questions, the roles of adolescent’s gender, age and daily support were first examined with correlations and t-tests. Next, their moderating effects were examined with regression models, standardizing continuous variables. Significant interactions were interpreted with the Process procedure model 1 (Hayes, 2018).

Due to the uniqueness of the study and its novelty, as no previous research has examined adolescent-parent pairs in terms of factors that are related with SD of adolescents with a disability, and due to the small sample, the p level was set at .05, and the Bonferroni correction for multiple comparisons was not applied.

3. Results

3.1. Descriptive statistics

Table 2 presents the distribution of the study variables and their intercorrelations. All means are somewhat above the scale midpoint. The distribution of all variables did not deviate from normality (skewness values = -0.64 to -0.01, SE = 0.29). No outliers were detected for the parents’ data, and very few outliers were detected for the adolescents’ data, each concerning a different variable for a

Table 2
Means, standard deviations and pearson correlations for the study variables (N = 69).

		M (SD)	2.	3.	4.	5.	6.	7.	8.
Parent	1. PADM	2.53 (0.35)	0.31 **	0.17	0.50 ***	0.52 **	0.08	0.11	-0.07
	2. Capacities	2.37 (0.42)		0.11	0.35 **	0.27 *	0.28 *	0.29 *	0.21
	3. School opportunities	2.45 (0.42)			0.28 *	0.16	0.14	0.40 ***	-0.16
	4. Home opportunities	2.65 (0.28)				0.42 ***	0.09	0.12	0.13
Adolescent	5. PADM	2.46 (0.33)					0.43 ***	0.10	0.24 *
	6. Capacities	2.42 (0.32)						0.40 ***	0.23 (p = .056)
	7. School opportunities	2.15 (0.46)							0.27 *
	8. Home opportunities	2.40 (0.44)							

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Variable range: 1–3.

different participant. Thus, all data were retained. Further, using the Mahalanobis distance, no deviation from multivariate normality was detected, as the lowest p value was above .001 ($p = .030$) (Arifin, 2015).

Positive correlations were found between parents' perception of PADM and their perception of the adolescents' capacities and opportunities for SD at home (but not at school). Similar correlations were found among adolescents. Parents' perception of PADM was positively related with that of adolescents. Similarly, parents' perception of capacities and opportunities for SD at school (but not at home) were positively related with those of adolescents, respectively. Parents' perception of PADM was unrelated with adolescents' perceptions of capacities and opportunities for SD, yet adolescents' perception of PADM was positively related with parents' perception of capacities and opportunities for SD at home (but not at school).

Several gender differences were found for the study variables. Parents' perception of capacities was higher for girls ($M = 2.51, SD = 0.42$) than for boys ($M = 2.27, SD = 0.40$) ($t(67) = 2.32, p = 0.023, d = 0.57$). Likewise, adolescents' own perception of capacities was higher among girls ($M = 2.53, SD = 0.33$) than boys ($M = 2.35, SD = 0.29$) ($t(67) = 2.40, p = 0.019, d = 0.66$). In addition, parents' perception of opportunities for SD at school was higher for girls ($M = 2.58, SD = 0.42$) than for boys ($M = 2.35, SD = 0.40$) ($t(65) = 2.25, p = 0.028, d = 0.56$). Other differences were not significant ($p = 0.163$ to $p = 0.997$). The adolescent age was unrelated with the study variables ($p = 0.107$ to $p = 0.983$), and degree of daily support was also unrelated with the study variables ($p = 0.163$ to $p = 0.956$). Thus, the study hypotheses were examined while controlling only for the adolescents' gender.

3.2. Differences between and within

Parent-adolescent differences (between), and differences within parents and within adolescents were examined with a multivariate analysis of covariance, controlling for the adolescents' gender (1-boys, 0-girls). Means and standard deviations are shown in Table 2. The overall parent-adolescent difference was significant ($F(1, 65) = 10.65, p = 0.002, \eta^2 = 0.141$), and so was the interaction between the type of participant (parent/adolescent) and the rank of the four variables within each participant (PADM, capacities, and opportunities for SD at home and at school) ($F(3, 195) = 5.30, p = 0.002, \eta^2 = 0.075$). Interpretation of these results, with estimated marginal means, revealed that, overall, parents' perceptions were higher than those of their adolescents ($M = 2.50, SE = 0.03$ vs. $M = 2.36, SE = 0.03$). More specifically, opportunities for SD at school were evaluated more highly by parents ($M = 2.45, SE = 0.05$) than by adolescents ($M = 2.14, SE = 0.06$) ($F(1, 65) = 25.40, p < 0.001, \eta^2 = 0.281$) and, similarly, opportunities for SD at home were evaluated more highly by parents ($M = 2.65, SE = 0.03$) than by adolescents ($M = 2.41, SE = 0.05$) ($F(1, 65) = 15.91, p < 0.001, \eta^2 = 0.197$). No differences were found for PADM ($p = 0.126$) or capacities ($p = 0.410$).

In addition, within parents, opportunities for SD at home were evaluated as highest ($M = 2.65, SE = 0.03$), higher than opportunities for SD at school ($M = 2.45, SE = 0.05$), capacities ($M = 2.38, SE = 0.05$), and PADM ($M = 2.52, SE = 0.04$) ($F(3, 63) = 16.00, p < .001, \eta^2 = .432$). Within adolescents, opportunities for SD at school were evaluated as lowest ($M = 2.14, SE = 0.06$), lower than opportunities for SD at home ($M = 2.41, SE = 0.05$), capacities ($M = 2.42, SE = 0.04$), and PADM ($M = 2.46, SE = 0.04$) ($F(3, 63) = 9.00,$

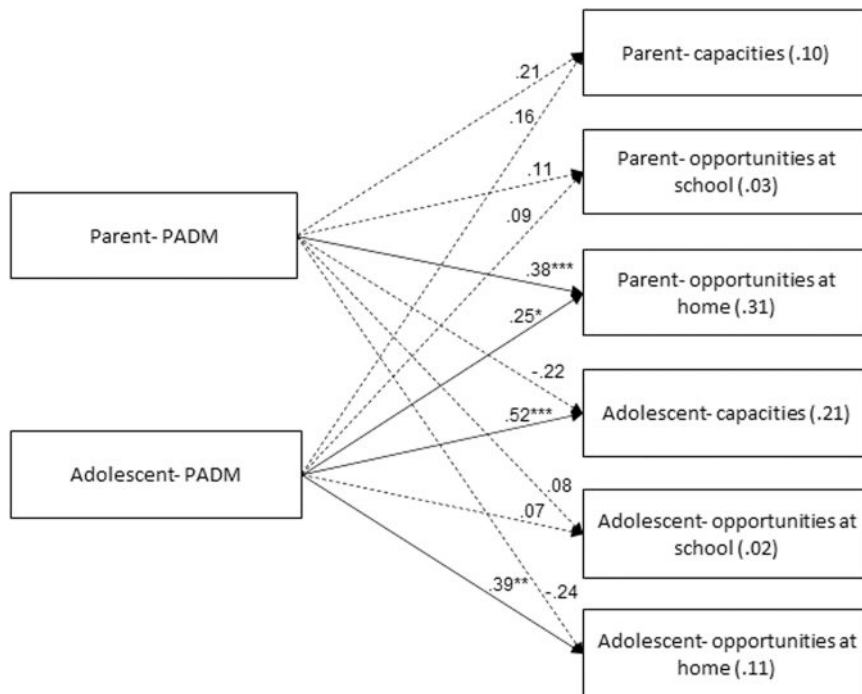


Fig. 2. Path Analysis Model for SD and PADM. Notes: R^2 – values within rectangles; β – standardized regression coefficient – values above arrows; whole lines – significant relationships, dashed lines – non-significant relationships; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

$p < .001, \eta^2 = .300$).

3.3. The research model

Due to sample size, the research model was first examined with six multiple regression models, one for each outcome of SD (capacities and school and home opportunities according to the perspectives of parents and adolescents). The adolescents' gender was entered in the first step, and PADM (parents' and adolescents' perspectives) was entered in the second. Adolescents' age and level of daily support were not used as they were unrelated with the outcomes. Next, a path analysis model was exploratorily attempted, taking into consideration the small sample size. The results that were found were identical with those of the six regression models, and thus this model is presented in Fig. 2. The adolescents' gender was controlled for (used as a covariate) and is not presented here for reasons of clarity. The two independent variables were correlated, and correlations between the dependent variables were allowed. The model was found to fit the data: $\chi^2(13) = 15.42, p = .282, NFI = 0.901, NNFI = 0.924, CFI = 0.978, RMSEA = 0.053$.

Results show several significant relationships. Parents' perception of PADM was positively related with their perception of opportunities for SD at home. The adolescents' perception of PADM was positively related with their perception of capacities and opportunities for SD at home, as well as with parents' perception of opportunities for SD at home. That is, higher PADM, as perceived by both parents and adolescents, was related with parents' perception of greater opportunities for SD at home. Further, higher PADM, as perceived by adolescents, was related with their perception of higher capacities and greater opportunities for SD at home.

Finally, as mentioned above, age and level of daily support were unrelated with the study variables, and thus PADM could not mediate the relationships between age and daily support and the outcome variables of capacities and opportunities for SD. The moderating effect of gender was examined with the six regression models. It was found significant for the interaction between gender and adolescents' perception of PADM, regarding the outcome of parents' perception of capacities ($\beta = -0.38, p = 0.046$). Interpretation of the interaction with the Process procedure model 1 (Hayes, 2018) showed a significant positive relationship for girls (effect = 0.19, SE = 0.09, $p = .031, 95\%CI = 0.02, 0.36$), and a non-significant relationship for boys (effect = $-0.01, SE = 0.06, p = 0.857, 95\%CI = -0.14, 0.12$). That is, a higher perception of PADM among adolescent girls was related with parents' perception of higher capacities, yet the parallel relationship concerning boys was not significant.

4. Discussion

The main aim of this study was to examine the associations between personal factors (age, gender, and level of daily support), promotion of autonomous decision making (PADM), and the self-determination (SD) of adolescents with disabilities from the perspectives of both the adolescents and their parents. The findings showed that within adolescents, significant relations were found between PADM and both capacities and opportunities for SD at home. Within parents, significant relations were found between PADM and opportunities for SD at home. Further, relations were found between adolescents' perspectives of PADM and their parents' perspectives regarding opportunities for SD at home. No relations were found between age or level of daily support and PADM. Gender had a moderating effect such that higher perception of PADM among adolescent girls, but not boys, was related with parents' perception of higher capacities for SD.

4.1. Relations between PADM, capacities, and opportunities for SD within and between adolescents and parents

Regarding our first hypothesis (see 1.4.1), our research model showed several significant relationships within and between adolescents and their parents. Higher ratings of PADM as perceived by both adolescents and their parents were related to higher ratings of opportunities at home, as perceived by both parties, in line with similar recent research that found autonomy to be influenced by opportunities at home (Vicente et al., 2020). In addition, these adolescents reported higher capacities for SD.

The relationships found between PADM and opportunities for SD at home demonstrate how paramount parents' PADM is for developing their child's SD. Autonomy-supportive parenting has been described as a parenting style that encourages adolescents to act volitionally while recognizing their feelings and ideas, enabling choice and respecting their personal preferences (Soenens et al., 2007). Adolescents experiencing this parenting style feel more connected to their parents, since their relationship enables them to act as partners while they negotiate and have an open dialogue with their parents who act as supportive mentors and provide guidance to their children (Han et al., 2022; Van Petegem et al., 2013, 2017). These findings may explain the relationships found among both parents and their adolescent children, meaning that adolescents raised in a family atmosphere that encourages and respects choice, preferences, and autonomous decision-making experience an enhanced environment for SD.

Autonomy-supportive parenting has been positively associated with children's perceived competence (Neubauer et al., 2021; Vasquez et al., 2016), which may explain our findings regarding the relationships found within adolescents between their perspectives of PADM and capacities for SD. Adolescents experiencing higher PADM from their parents felt that their capacities for SD were greater as well. This relationship was not found within parents and could reflect a change among parents of adolescents with disabilities, reflecting a deeper understanding that autonomous decision-making and SD are not necessarily dependent on capacity, but more importantly, on providing opportunities for SD while learning through experience, and offering support when needed (Bigby et al., 2021).

No relationship was found between adolescents' and parents' perspectives of PADM and opportunities for SD at school. It may be that since PADM was examined from the points of view of adolescents and parents, it was more relevant to opportunities offered for SD at home rather than at school. Perhaps the essence of opportunities for SD differs between the two environments, with educators basing

frequency and types of opportunities on cognitive or educational capacities, as opposed to parents and adolescents who aspire for opportunities that expand their daily life experience, regardless of their SD capacities (Bigby et al., 2021).

Regarding our second hypothesis (see 1.4.1), parents rated all four variables (PADM, capacities, and opportunities for SD at home and at school) higher than their children. Similar to our findings, Carter et al. (2006) found that adolescents in general rated their opportunities as being lower both at school and at home. Throughout their adolescent years, adolescents strive to express their personal preferences and to make their own decisions, and as part of their attempt to gain separateness will often feel they are being restrained even though it may not be the case (Han et al., 2022). Nevertheless, it is vital for parents and educators who constitute their immediate environment to hear their voices and make every effort possible to offer opportunities to practice SD in their daily encounters, regardless of capacities that do not need to constitute a prerequisite for practicing and experiencing SD.

4.2. Personal variables

In relation to our first research question, no correlations were found between age and level of daily support and any of the four variables. Regarding age, our findings are in line with previous research (Carter et al., 2010; Wehmeyer et al., 2013), suggesting that SD develops throughout adolescence and is experienced equally by both younger and older youth.

To explain our findings regarding level of daily support, note that one third of our sample were adolescents with a physical disability and almost half of the parents reported that their child needed some to full daily support. The fact that no correlation was found between PADM and capacities and opportunities for SD is promising, since according to recent findings, reports on quality of life by adolescents with a physical disability included being autonomous and making personal choices. These adolescents reported that they often experienced participation restrictions and activity limitations often stemming from parental overprotectiveness (Ow et al., 2021). Our findings show that parents acknowledge that all people with disability have an equal right to make decisions autonomously and be offered opportunities for SD and develop capacities for SD, regardless of their ability to be independent. This is conveyed to their children as well.

Gender was correlated with SD capacities and opportunities at school. Adolescents' and parents' perception of capacities for SD were significantly higher for girls than for boys. In addition, parents' perception of opportunities for SD at school were higher for girls than for boys. Regarding our second research question (see 1.1.4), gender was found to have a moderating effect. Our research model found that a higher perception of PADM among girls was related with parents' perception of higher capacities. These findings are in line with previous research that found that females report higher levels of SD (Mumbardó-Adam et al., 2017a, 2017b; Shogren et al., 2007), and parents reported adolescent girls to be more responsible and trustworthy. Thus, parents felt more assured to allow them greater autonomy (Han et al., 2022).

4.3. Limitations & future research

Several limitations of this research should be considered. Our sample was small and non-random. Most of the parent respondents were mothers (94%). Even though we aspired to include a wide variety of disabilities, almost none of the adolescents had visual or hearing impairments and none had intellectual disability, limiting the generalizability of our findings. In addition, several parents found it challenging to rate their child on a 3-point Likert scale and felt they would have been able to rate more accurately on a wider scale. An additional shortcoming was the low (albeit acceptable) internal consistency of the adolescent scale for measuring PADM. Finally, this study was based on self-reporting, and actual behavioral aspects of PADM and SD were not examined.

Future research should include adolescents with intellectual disability. Perceptions of educators are also imperative to gain a wider understanding of opportunities for SD at school. Since SD should begin in early life (Hagiwara et al., 2021), we recommend employing longitudinal studies, examining PADM and SD opportunities of young children with disabilities and during different stages of life. In addition, qualitative in-depth interviews with adolescents, parents, and educators may provide a more extensive picture and perspective of what is available and what is missing regarding SD capacities and opportunities at home and at school. There may also be cultural factors that shape Israeli families' values regarding their expectations for SD among adolescent girls in comparison to boys, a phenomenon that should be further examined among other cultures, as well (Hagiwara et al., 2021).

4.4. Implications for practice

Practical recommendations include the need for collaboration between families and educators, with adolescents being the main authority leading the process in enhancing their self-determined behavior. Parents and educators should receive practical tools to support adolescents' autonomous decision-making and SD, while learning together to listen and reflect upon what works and what needs improving (Hagiwara et al., 2021; Mumbardó-Adam et al., 2020; Vicente et al., 2020; Wehmeyer, 2005). In particular, tools and guidance regarding PADM and SD should be provided for adolescent boys. Parents and educators should be encouraged to support their children/students with disabilities, while being attentive to individual needs, to ensure they receive maximal opportunities for SD in every possible way, enabling them to lead their lives volitionally with respect to their choices, needs, and preferences.

5. Conclusions

SD is a complex process. Our research emphasizes the important role the environment plays in nurturing it. We found that parents reporting higher PADM also reported higher ratings of opportunities for SD at home and so did their adolescent child. Hence, these

adolescents also reported higher PADM and more opportunities at home for SD. In addition, these adolescents reported higher capacities for SD, meaning that a child raised by parents who encourage autonomous decisions and who provide opportunities to do so at home while their children become more self-determined, receives a clear message that enhances their personal competence and increases their perceptions regarding their SD capacities. In a virtuous circle, these perceptions reflect back to their parents, who in turn promote autonomous decision-making and create more opportunities for SD at home.

Many professionals stress the importance of personal characteristics for the development of SD, but our research indicates that capacities are only one component in a broader context within the immediate environment of adolescents with disabilities. Our research also shows the pivotal role of families in facilitating PADM and providing opportunities for SD at home.

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CRediT authorship contribution statement

Tamar Taub: Conceptualization, Funding acquisition, Methodology, Writing – review & editing. **Shirli Werner:** Conceptualization, Methodology, Supervision, Writing – review & editing.

Declaration of interest

None.

Data availability

Data will be made available on request.

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