

SOCIAL RELATIONSHIPS, SELF-ESTEEM, AND LONELINESS IN ADOLESCENTS WITH LEARNING DISABILITIES

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Abstract

Objective: Many studies have underlined that students with learning disabilities (LDs) feel that school is their main factor of frustration and reflects on their social reputations, isolation, and sociorelational discomfort. However, the role of LDs in psychosocial outcomes in adolescence is still unclear. In the present study, we explore the differences among three groups of adolescents (adolescents without LDs, adolescents with LDs, and adolescents with LDs who have the support of psychosocial educational intervention) in self-esteem, friendship quality, loneliness, and secrecy.

Method: The sample comprised 93 adolescents, 49 males (53%) and 44 females (47%), in the 11–16 age range ($M = 13.73$; $SD = 1.66$). Participants completed measures on self-esteem (Multidimensional Self-Concept Scale), friendship quality (Friendship Quality Scale), loneliness (Loneliness and Aloneness Scale for Children and Adolescents), and secrecy (Self-Concealment Scale).

Results: Our findings showed that students with LDs who underwent psychosocial educational intervention felt less parent-related loneliness and showed higher self-esteem than other adolescents regarding interpersonal relationships, their duties, their families, and their bodies.

Conclusions: The study suggests that having the support of a psychosocial educational intervention could have a role in adolescent psychosocial adjustment.

Key words: learning disabilities, loneliness, self-esteem, adolescents, training program

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Learning Disabilities (LDs) have been of growing interest in the last 30 years. According to the Italian Ministry of Education, Universities, and Research (MIUR, 2019), Italy has an average prevalence of 3.2% of students with LDs in primary and secondary schools. LDs are defined as neurologically-based problems interfering with learning of academic skills related to reading, writing, and/or mathematical reasoning in youths with average or above-average intelligence (Fletcher, Lyon, Fuchs, & Barnes, 2019). Despite the huge amount of research on this issue, there are still pervasive disagreements about diagnostic criteria, assessment, treatment procedures, and educational policies (Fletcher, Denton, & Francis, 2005; Fletcher et al., 2019). The fact that the causes of LDs are neurologically-based clinical conditions causes teachers to face many problems, as there is no apparent way to treat the conditions or improve academic learning. Each student with an LD needs to find his or her own individual learning trajectory to achieve basic skills. The heterogeneity of the expressions of LDs has forced researchers to study the related cognitive dysfunctions and the efficacy of rehabilitation programs (for meta-

analyses, see Chard, Vaughn, & Tyler, 2002; Lee, Wehmeyer, & Shogren, 2015; Magnani & Musetti, 2017; Peijnenborgh, Hurks, Aldenkamp, Vles, & Hendriksen, 2016; Serniclaes, Collet, & Sprenger-Charolles, 2015; Swanson, 1999; Tressoldi, Vio, Lorusso, Facchetti, & Iozzino, 2003). However, difficulty in achieving high academic performance during childhood and adolescence is not confined to academic study itself, but can also involve socioaffective dynamics in daily school relationships (Musetti, Pasini, & Cattivelli, 2016). Students with LDs feel that school is their main factor of frustration, reflecting social reputation, isolation, sociorelational discomfort (Amodeo & Bacchini, 2002; Armstrong & Humphrey, 2009), and self-esteem (Byrne & Gavin, 1996; Marinelli, Romano, Cristalli, Franzese, & Di Filippo, 2016; Re, Ghisi, Guazzo, Boz & Mammarella, 2014; Weisz et al., 1993). Indeed, the presence of an LD doubles the likelihood of developing a psychopathology (Penge, 2010). Various authors have reported a higher frequency of internalizing disorders, such as anxiety and depression (Mammarella et al., 2016; Sahoo, Biswas, & Padhy, 2015; Schulte-Körne, 2016), externalizing disorders, and social deviance

(Arnold et al., 2005; Carroll, Maughan, Goodman, & Meltzer, 2005; Cornoldi & Tressoldi, 2007; Morgan, Farkas, Tufis, & Sperling, 2008; Sahoo et al., 2015) in students with LDs when compared to students without learning problems.

For a child or adolescent, school represents his or her most frequent activity, and academic success is one of the principal means to fulfil developmental tasks. By the end of the academic process, the developmental tasks to be carried out are identity formation, achievement of autonomy, development of intimacy with peers, healthy expression of sexuality, and finally, the redefinition of relational context (Brooks-Gunn & Paikoff, 1997; Carver, Joyner, & Udry, 2003; Corsano, Majorano, Musetti, & Antonioni, 2014; Kroger, 2004; Majorano, Musetti, Brondino, & Corsano, 2015). The achievement of these developmental tasks produces a feeling of psychological wellness and a perception of adequacy supported by feedback from adults and peers (Corsano, Musetti, & Gioia, 2016; Scholte, van Lieshout, & van Aken, 2001). However, such an achievement is deeply affected by the social environment (Kroger, 2004; Steinberg, 1998), which is in turn influenced by academic success. For these reasons, research on students with LDs has shifted its focus from purely cognitive functioning to psychosocial factors in order to promote a holistic understanding of these individuals (Al-Yagon & Mikulincer, 2004; Bender & Wall, 1994; Greenham, 1999; Huntington & Bender, 1993; Murray & Greenberg, 2006; Schulte-Körne, 2016).

On one hand, having an LD could negatively affect one's relationship with the social environment. It has been shown that endogenous difficulties in achieving academic success interfere with peer relationships (Estell et al., 2008; Haager & Vaughn, 1995; Holopainen, Lappalainen, Junttila, & Savolainen, 2012; Putnam, Markovchick, Johnson, & Johnson, 1996; Wiener, 2004). On the other hand, the academic social environment might be more or less supportive, aiding adolescent adjustment (Schulte-Körne, 2016). In the context of the debate on the complexity of the relationships among LDs, social environment, and adjustment in adolescence, we asked whether the presence of an LD has a role in psychological and social life outcomes.

According to labeling theory (Shifrer, 2013), poorer outcomes for students labeled with LDs depend more on different social expectation than on the adolescents' own deficiencies. Therefore, the individual difficulties of adolescents with LDs have to be considered within the social and environmental contexts in which they are inserted. Several psychodevelopmental models indicate healthy relationships with peers as a fundamental factor in developing good self-esteem and good adult social adaptations (Stone & La Greca, 1990; Swanson & Malone, 1992; Tabassam & Grainger, 2002; Vaughn, McIntosh, & Spencer-Rowe, 1991). In this vein, it has been found that adolescents with LDs often have difficulties establishing peer relationships, with a tendency to create small groups with other individuals who have similar features and a consequent tendency to be isolated from social activities (Deshler & Schumaker, 1983; Holopainen et al., 2012; Horn, O'Donnell, & Vitulano, 1983; Lane, Carter, Pierson, & Glaeser, 2006; Martínez, 2006; McConaughy, 1986; Peleg, 2009; Phil & McLarnon, 1984; Tur-Kaspa, 2002). In particular, the literature shows that most of these students report higher levels of loneliness than their peers without LDs, and that this feeling increases during adolescence (see Eboli & Corsano, 2017, for a review). In the case of a lack of integration with peers, students with LDs could

display a more negative self-view than their classmates (Kaukiainen et al., 2002; Peleg, 2009; Silverman & Zigmond, 1983; Valas, 1999). Consequently, if adolescents feel isolated from their peers and do not feel enough support in the context of peer relationships, they may be more likely to keep secrets from peers. Secrecy is another important psychosocial factor that has an effect on identity formation and development of intimacy. Indeed, showing low levels of secrecy toward peers represents an indicator of social integration and wellness in adolescents and is related to positive self-esteem (Corsano, Musetti, Caricati, & Magnani, 2017; Musetti & Corsano, 2019). To the best of our knowledge, there are no studies dealing with secrecy in adolescents with LDs, although this is a relevant issue because youths with neurobiological developmental disabilities could be socially stigmatized (Corsano, Musetti, Guidotti, & Capelli, 2017; Shifrer, 2013). On the other hand, some studies show that different educational trainings can affect the psychosocial status of students with LDs (Coleman, McHam, & Minnett, 1992; Eboli & Corsano, 2017). Therefore, studies are needed to explore whether adolescents with LD diagnoses present different patterns of psychosocial maladjustment than other adolescents, and whether the psychosocial functioning of adolescents with LDs who follow a specific educational training for their LDs differ (Fletcher et al., 2019).

The aim of this study was to explore the role of having an LD diagnosis on friendship quality, self-esteem, loneliness, and secrecy from friends. We administered self-reported measures for each psychosocial variable of interest to a group of students without LDs, a group of students with LDs, and a group of students with LDs who had the support of psychosocial educational interventions for their disabilities. Based on literature, we expected higher psychosocial maladjustment in the adolescents with LDs compared to those without LD diagnoses and adolescents with LD diagnoses who followed the treatment. In particular, we expected low levels of self-esteem and high levels of loneliness in the former group relative to the latter two. Finally, to better understand the complexity of the psychosocial functioning of adolescents with LDs, we were interested in exploring differences concerning secrecy from friends and friendship quality among the three groups.

Methods

Participants

We first recruited a group of 326 adolescents (ages 11–16; mean age = 14.17 years; $SD = 1.52$ years) from eight secondary schools and a learning and research center in North Italy (Emilia Romagna and Lombardy). Subsequently, participants were divided into three groups: adolescents without LDs (Group 1), adolescents with LDs who did not follow a treatment program for their respective LDs (Group 2), and adolescents with LDs who followed treatment programs for LDs (Group 3). From the 269 adolescents without LDs, we randomly selected 36 subjects who were paired by gender and age with subjects in Group 3. Thus, the three groups were of comparable size and did not differ with respect to gender, $\chi^2(2) = 1.05, p = .59$, or age, $F(2, 90) = .24, p = .79$. Group 1 included 36 adolescents (20 males, mean age = 13.67 years, $SD = 1.67$ years) who self-reported no diagnosis of an LD. The other two groups comprised adolescents with formal LD diagnoses made by expert clinicians of the public health services. Group 2 ($n =$

21, 9 males, mean age = 13.95 years, $SD = 1.66$ years) included students with certified LD diagnoses who did not follow a treatment program for their respective LDs. Group 3 ($n = 36$, 20 males, mean age = 13.67 years, $SD = 1.67$ years) was made up of students with a certified diagnosis of an LD who followed treatment programs for their LDs in the same learning and research center in North Italy. There was a multicomponent program comprising the strengthening of basic and instrumental abilities, acquisition of a tailored study method, and psychoeducational activities (i.e., individual and group exercises for emotional, social, and sexual spheres) for self-consciousness improvement. Participants attended the center three times a week for two hours at a time, for six hours a week altogether. The program was conducted by psychologists. We administered self-report questionnaires to these students after six months of treatment.

Procedure

A letter with a detailed description of the study aim and informed consent information was delivered to the students' parents. Students whose parents both signed the informed consent form were involved in the study. We explained the aims and duration of the study, as well as participation criteria. Participants were informed of their role as participants, that they were free to ask questions, and that participation was voluntary. All the adolescents involved at this stage agreed to participate in the study. All the students in every group answered a series of questionnaires in a single session in February 2017, six months after the start of the treatment program for Group 3. Questionnaires were administered during school lessons and a teacher was present during the administration. Instructions were given to underline the anonymity of the questionnaire and the importance of autonomy in giving responses. Adolescents were also informed that they could receive counseling after administration of the questionnaire (no participants required this). The study was designed and carried out according to the Ethical Code of the Italian Association of Psychology and the American Psychological Association.

Instruments

Friendship quality. We used the Friendship Quality Scale (Bukowski, Hoza, & Boivin, 1994; Italian version by Fonzi, Tani, & Schneider, 1996) to measure the adolescents' perceptions of current friendship quality. This is a self-reported questionnaire composed of 22 items rated on a 5-point Likert scale ranging from 1 (not at all true) to 5 (very true). As indicated in the written instructions of the questionnaire, students were instructed to refer to their relationship with their current best friend (Fonzi et al., 1996). Following previous studies (e.g., Baiocco et al., 2011), a two-factor structure was adopted: A positive friendship quality factor comprised the stay together, help, security, and intimacy subscales (Cronbach's α for this subscale = .86) for a total of 18 items. A negative friendship quality factor comprised the conflict (Cronbach's α for this subscale = .66) subscale, which was made up of four items. For each student, positive and negative friendship quality scores were obtained by adding up the item scores of the respective subscales. The response range for the positive friendship quality subscale was 18–90,

whereas for the negative friendship quality subscale, it was 4–20. Given the direction of the Likert scale responses, the higher the score, positive or negative, the higher the friendship quality that was perceived.

Self-Esteem. We used the Multidimensional Self-Concept Scale (Bracken, 1992; Italian version *Test Multidimensionale dell'Autostima* [TMA], Bracken, 2003) to measure different dimensions of self-esteem. This self-reported questionnaire consisted of 150 items rated on a 4-point Likert scale from 1 (absolutely true) to 4 (absolutely untrue). The test evaluates six dimensions using subscales comprising 25 items each. The dimensions of self-esteem are interpersonal relationships (Cronbach's α for this dimension = .76), duties (Cronbach's α for this dimension = .71), emotionality (Cronbach's α for this dimension = .76), academic sphere (Cronbach's α for this dimension = .60), familiar sphere (TMA-F; Cronbach's α for this dimension = .90), and body sphere (Cronbach's α for this dimension = .64). Each subscale's score is obtained by the sum of singular item scores, and the range is 40–100. The higher the score, the higher the self-esteem in that dimension.

Loneliness. We used the Loneliness and Aloneness Scale for Children and Adolescents (Marcoen, Goossens, & Caes, 1987; Italian version by Melotti, Corsano, Majorano, & Scarpuzzi, 2006) to measure the participants' loneliness. This self-reported questionnaire is made up of 48 items rated on a 4-point Likert scale from 1 (never) to 4 (often). Loneliness is evaluated on four subscales composed of 12 items each. The subscales are peer-related loneliness (Cronbach's α for this dimension = .90), parent-related loneliness (Cronbach's α for this dimension = .86), individual attitude toward aloneness on two dimensions as an aversion to being alone (Cronbach's α for this dimension = .83), and an affinity for being alone (Cronbach's α for this dimension = .85). For each subscale, the score is obtained by the sum of the singular item score, and the range is 12–48. The higher the score, the higher the perceived loneliness in that dimension.

Secrecy. We used the Self-Concealment Scale (Larson & Chastain, 1990) adapted to secrecy behavior toward friends (Laird, Bridges, & Marsee, 2013). The scale was translated into Italian by a translation/back-translation procedure. The instrument measures secrecy toward friends on 10 items rated on a 5-point Likert scale from 1 (not at all) to 5 (extremely). The total score is obtained by adding up the scores of singular items, the range is 1–50, and the higher the score, the higher the secrecy toward friends. Cronbach's alpha for this instrument was .86.

Analysis and Results

A series of one-way ANOVAs was performed using the three groups (Group 1, no LDs; Group 2, untreated LDs; and Group 3, treated LDs) as factors in order to reveal differences in the investigated psychopathologic areas (friendship quality, self-esteem, loneliness, and secrecy). Post hoc analyses were conducted with the LSD test, and the effect sizes were reported as partial eta-square values. A maximum of $p < .05$ was used to indicate statistical significance. Descriptive statistics and ANOVA results for each group are reported in **table 1**.

ANOVA results showed statistically significant differences among the groups for the following variables: TMA (interpersonal), $p < .001$, $\eta p^2 = .30$;

TMA (duties), $p < .001$, $\eta p^2 = .26$; TMA (emotionality), $p < .001$, $\eta p^2 = .26$; TMA (academic sphere), $p < .001$, $\eta p^2 = .16$; TMA (familiar sphere), $p < .001$, $\eta p^2 = .59$; TMA (body sphere), $p < .001$, $\eta p^2 = .21$; and parent-related loneliness, $p < .001$, $\eta p^2 = .40$. Post hoc analyses using LSD indicated that adolescents with a diagnosis of an LD who followed a treatment program for their LDs (Group 3) showed significantly higher scores in all the domains of self-esteem investigated than adolescents without LDs (Group 1) and adolescents with a diagnosis of an LD who did not follow a treatment program for their LDs (Group 2). Regarding loneliness, adolescents with a diagnosis of an LD who followed a treatment program for their LDs (Group 3) showed significantly lower parent-related loneliness than adolescents without LDs (Group 1) and adolescents with a diagnosis of an LD who did not follow a treatment program for their LDs (Group 2). Regarding friendship quality and secrecy, no significant differences were observed in the results, $p > .05$ for all comparisons.

Discussion

In this research, we investigated the state of psychosocial functioning in students with and without

LDs, who either did or did not follow a psychosocial educational intervention. Specifically, we aimed to explore the possible roles of LDs on the realms of friendship quality, self-esteem, loneliness, and secrecy. Unexpectedly, adolescents without LDs did not differ from adolescents with LDs who did not follow a psychosocial educational intervention in terms of loneliness or self-esteem. Hence, our results suggest that having an LD per sé is not sufficient cause to feel more isolated from social contexts. This result could be linked to the spread of inclusive policies in Italy (European Agency for Special Needs and Inclusive Education, 2016). Law 170/2010 stated that students with LDs need a new way of teaching according to their way of learning. Thus, Italian schools follow complex and elaborate procedures for the inclusion of students with LDs in the school setting that involve the entire school staff. Therefore, given that nowadays, Italian adolescents with LDs have strong support from their school environment, they tend to feel integrated in their school environment, reducing psychological distress. Here, it is worth noting that the majority of adolescents without disabilities nonetheless experience loneliness frequently (see for example Heinrich & Gullone, 2006; Vanhalst et al., 2012), and that loneliness could have a functional valence in promoting physiological

Table 1. Differences between groups of adolescents on positive friendship quality (FQ-POS), positive negative quality (FQ-NEG), self-esteem in interpersonal relationships (TMA-interpersonal), self-esteem in duties (TMA-duties), self-esteem in emotionality (TMA-emotionality), self-esteem in academic sphere (TMA-academic sphere), self-esteem in body sphere (TMA-body sphere), peer-related loneliness (L-PEER), parent-related loneliness (L-PART), aversion for aloneness (A-NEG), affinity for aloneness (A-POS), and secrecy. * $p < .05$, ** $p < .01$, *** $p < .001$

		Groups			ANOVA		
		1	2	3	$F(2, 90)$	p	LSD tests
<i>N</i>		36	21	36			
FQ-POS	<i>M</i> (<i>SD</i>)	70.61 (10.67)	71.48 (8.62)	70.86 (10.22)	.05	.95	-
FQ-NEG	<i>M</i> (<i>SD</i>)	9.19 (3.52)	10.19 (3.09)	9.06 (2.96)	.91	.41	-
TMA-interpersonal	<i>M</i> (<i>SD</i>)	61.14 (7.88)	63.62 (6.28)	73.50 (9.35)	19.50	.000	3 > 1, 2
TMA-duties	<i>M</i> (<i>SD</i>)	58.64 (8.61)	61.71 (6.82)	69.69 (9.38)	15.64	.000	3 > 1, 2
TMA-emotionality	<i>M</i> (<i>SD</i>)	56.97 (11.39)	61.19 (7.67)	70.08 (10.07)	15.46	.000	3 > 1, 2
TMA-academic sphere	<i>M</i> (<i>SD</i>)	59.86 (9.92)	62.54 (4.77)	66.25 (8.03)	8.44	.000	3 > 1, 2
TMA-familiar sphere	<i>M</i> (<i>SD</i>)	53.00 (10.12)	53.71 (9.32)	78.33 (11.28)	63.86	.000	3 > 1, 2
TMA-body sphere	<i>M</i> (<i>SD</i>)	58.19 (11.17)	58.86 (7.64)	69.08 (10.48)	12.02	.000	3 > 1, 2
L-PEER	<i>M</i> (<i>SD</i>)	24.36 (9.37)	25.00 (8.59)	21.11 (7.84)	1.83	.16	-
L-PART	<i>M</i> (<i>SD</i>)	35.19 (4.31)	34.19 (5.60)	26.17 (5.82)	30.45	.000	1, 2 > 3
A-NEG	<i>M</i> (<i>SD</i>)	32.17 (6.97)	28.38 (7.86)	30.44 (7.36)	1.79	.17	-
A-POS	<i>M</i> (<i>SD</i>)	32.14 (7.22)	33.95 (7.70)	31.06 (8.20)	.93	.40	-
Secrecy	<i>M</i> (<i>SD</i>)	29.69 (10.64)	32.19 (9.04)	27.89 (9.99)	1.22	.30	-

separation and individuation processes in adolescence (Buchholtz, 1997; Corsano, Majorano, & Musetti, 2011, 2013). Therefore, it is possible that adolescents with LDs differ from adolescents without LDs on specific issues of solitary experience (e.g., the feeling of ambivalence toward help), which may not be caught by quantitative methods. Future qualitative studies are needed to address loneliness in adolescents with LDs.

As for the self-esteem dimensions, having an LD diagnosis was not enough to cause a worsened view of oneself. This result should be taken with caution considering the small number of subjects involved in the present research. However, a recent Italian study (Giorgetti, Andolfi, & Antonietti, 2015) that involved 155 parents of adolescents with LDs found positive parental representation with respect to children's inner resources and self-efficacy. Positive parental representation may thus be a protective factor for self-esteem. Other studies are needed to simultaneously evaluate adolescents with LDs' self-esteem and parental representation. With respect to adolescents without LDs and adolescents with LDs who did not receive a specific treatment for their LDs, no other differences were found either in scores of friendship quality or secrecy. One possible explanation is that students with LDs experienced good friendship quality and comparable secrecy from friends if they referred in their self-reported responses to their best friends, who could be adolescents with similar problems. Indeed, one limitation of this study that should be controlled in future research is that the friendship quality and secrecy measures we adopted did not take into account the spread or the heterogeneity of the social networks in which those students operated. Relationship quality and secrecy attitudes toward best friends should be examined further in future studies.

The more interesting and surprising results are that students with LDs who had the support of psychosocial educational intervention showed higher self-esteem in all dimensions of self-esteem compared to the other two groups. One possible explanation for the results is that the treatment program favored the development of good self-consciousness and/or good acceptance attitudes toward personal difficulties that, in turn, favored self-esteem. Students with LDs following a program may have experienced good relationships with peers with the same difficulties, and they might have generalized relationships external to the group of treatment. Moreover, they could have developed strategies to face emotional, family, and body consciousness issues. Students with LDs who experience discomfort in different areas, but who have had the chance to face such discomfort with expert professionals, can draw benefits from self-regulation, fostering their self-esteem in several spheres. In the academic self-esteem dimension, it is surprising that students with LDs following the treatment differed both from students without LDs and from students with LDs who did not follow any treatment. One possible explanation is that students following a treatment program recognize that having an LD puts them at a disadvantage compared to those who do not have an LD. Achieving good academic results is more difficult for those with LDs than for their classmates without LDs. Thus, good academic results could lead to higher pleasure and self-evaluation, increasing their academic self-esteem. However, further studies centered on this variable and on students with and without LDs, whether following psychosocial treatment or not, are necessary.

Concerning loneliness, we found another surprising difference among the students with LDs who followed the treatment and the other two groups. Students with

the support of a psychosocial educational intervention showed lower levels of parent-related loneliness than students with or without LDs who did not follow the intervention. This finding may be linked to the importance of the context of the team of psychologists in building a communication bridge between students and parents during adolescence. It can be also hypothesized that adolescents whose parents decided to let their children attend the learning center three times a week felt high parental supportiveness. As far as friendship quality and secrecy, we did not find any differences among the groups. Hence, the adolescents who strengthened their academic skills through the treatment had more positive self-esteem, felt less lonely toward parents, and respected peers who did not follow the treatment, but this difference did not affect friendship ties. This is not surprising, because the treatment is focused on supporting adolescents in their learning of academic and social skills, but it is not a psychotherapeutic or psychoanalytical intervention that could create changes in intimate relationship functioning (Hollins & Sinason, 2000).

Overall, these results suggest that treatments for LD that include psychosocial modules are associated with lower psychosocial discomfort in students with LDs than in other students who need to face complex developmental tasks even in the absence of LDs. However, in order to discuss the efficacy of the treatment itself, further studies comparing the three groups before and after treatment are necessary.

Despite some interesting results about loneliness and self-esteem in treated students with LDs compared to other students, we are aware of several limitations of the present study. First, the limited sample size of the three groups must be highlighted. To avoid generalizations, there is a need to replicate these findings in larger groups of adolescents with and without LDs. Second, the lack of data from the adolescents before treatment did not allow us to detect a specific effect of the treatment. Furthermore, we did not investigate other psychopathological variables in the three groups that could affect psychosocial functioning. Therefore, future studies must include a pre-post assessment of outcomes and include comparison groups, controlling for psychopathological symptoms. Third, we employed only self-reported and quantitative questionnaires to assess the variables, which can present relevant bias problems (e.g., social desirability). Probably, a multimethod assessment including qualitative data and the reports of teachers and peers could describe the psychosocial condition of students with LDs more in depth. Fourth, the cross-sectional design of the research made it impossible to definitively determine the direction of the associations between the variables investigated. Therefore, longitudinal studies are necessary to advance this line of work.

Conclusion

Notwithstanding its limitations, this research has provided an overview of the psychosocial state of students with and without LDs who do or do not follow a psychosocial treatment program. Overall, the results suggest that LDs are heterogeneous, complex, and context-dependent for their psychosocial correlates. The association found between following a treatment for LD disability and better self-esteem and relational status of adolescent students with LDs suggests that experiencing academic and social support can play an important role in preventing negative adolescent

psychosocial outcomes. This result could help educators to manage and monitor learners' activities.

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