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Well-being in adolescents with and without visual impairments

Alina Chiracu, PhD.
University of Bucharest, Faculty of Psychology and Educational Sciences, Department of Special Psychopedagogy
Cristian Buică-Belciu, PhD.
University of Bucharest, Faculty of Psychology and Educational Sciences, Department of Special Psychopedagogy

Abstract

The present study has two main objectives. First, to analyze the differences between adolescents with visual impairments and those without visual impairments in terms of peer attachment, loneliness, self-esteem, and well-being. Secondly, to investigate the relationships between these variables among adolescents, starting from the premise that peer attachment is negatively associated with loneliness, which in turn is negatively associated with well-being. At the same time, self-esteem moderates the relationship between peer attachment and well-being. A number of 80 adolescents participated in the study, of which 40 with visual impairments and 40 without visual impairments, aged between 17 and 18 years, M = 17.58, SD = .50. The instruments used were Index of Parents and Peers Attachment, UCLA Loneliness Scale, Rosenberg's Self-Esteem Scale, and Oxford Happiness Questionnaire. The results showed that, unlike adolescents without visual impairments, those with visual impairments report lower levels of peer attachment, self-esteem and well-being, and higher levels of loneliness. Loneliness also mediates the relationship between peer trust/peer alienation and well-being, and self-esteem moderates the relationship between peer communication and well-being. Possible ways of increasing self-esteem and well-being among adolescents with visual impairments, as well as reducing feeling of loneliness, are discussed. At the same time, intervention models are proposed to improve the well-being of adolescents by implementing psychoeducational programs to increase the level of socialization, alleviate loneliness and increase self-esteem.

Keywords: visual impairment, adolescents, peer attachment, loneliness, self-esteem, well-being

Introduction

Visual impairment (VI) is a sensory impairment in which visual function is affected, with or without organic damage and is defined as impairment in the structure and function of the eye (Deitz & Ferrell, 1993). It includes both low vision and blindness. Low vision is defined as visual acuity of less than 6/18 but equal to or better than 3/60, or a corresponding visual field loss to less than 20°, in the better eye with the best possible correction. Blindness is defined as visual acuity of less than 3/60, or a corresponding visual field loss to less than 10°, in the better eye with the best possible correction (WHO, 1993). The International Classification of Impairments, Disabilities, and Handicaps classifies the levels of visual impairment as moderate VI, severe VI, and blindness. Blindness is also defined as the inability to see or the loss or absence of perception of visual stimuli (WHO, 2004).

A number of 448 million children and adolescents have refractive errors worldwide, 90 million live with sight loss, among which two million with blindness, 30 million with moderate to severe sight loss, and 58 million with mild sight loss (Bourne et al., 2021). Children and adolescents with

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visual impairment present a higher risk of experiencing social exclusion and violence in schools (Gur & Albayrak, 2017; Soleimani-Sefat et al., 2016), negative attitude toward others, violence and bullying, sexual assault, and loneliness (Brunes et al., 2018; McDonnall & Antonelli, 2018).
Visual impairments increase the likelihood that affected children and adolescents will suffer from emotional disturbances. For example, vision is an important sensory channel that facilitates interactions with the outer world (Dale & Salt, 2007). Eye contact is a mechanism through which adolescents share opinions, develop joint attention, and identify their own emotions or those of others (Tadi et al., 2009). Adolescence is a period of profound changes, and adolescents with visual impairments experience, in addition to these changes, a series of emotional challenges related to the impairment. It has been shown in numerous studies that adolescents with VI experience emotional and behavioral problems (Achenbach & Edelbrock, 1983), report lower scores in psychosocial functioning (Wong et al., 2009) and higher scores in different psychopathological symptoms (Garaigordobil & Bernaras, 2009) than adolescents with normal vision. It has also been shown that adolescents with VI have a higher incidence of depression and lower self-esteem (Lifshitz et al., 2007).
Among the important aspects of adolescence are friendships and interpersonal relationships. Time spent with friends and colleagues has a particular impact on positive emotions and implicitly on well-being and happiness (Hektner et al., 2007). Adolescents with VI tend to have fewer friends, limited social networks and feel lonelier than their sighted peers (Kef, 2002). This has a negative impact on well-being and happiness (Rosenbaum & Gorter, 2012).
Investigating aspects such as attachment to friends, self-esteem, level of loneliness or well-being among visually impaired adolescents is of great importance to identify factors that may threaten their quality of life. Low levels of socialization, perceived loneliness, low self-esteem are only some of the elements that can lead to poor school and social integration of teenagers with visual impairments. Therefore, in the present study, we aim to verify whether there are differences between adolescents with and without VI in terms of peer attachment, loneliness, self-esteem, and well-being. We therefore establish the first hypotheses of the study:

H1. Adolescents with VI report lower levels of peer attachment than adolescents without VI.
H2. Adolescents with VI report higher levels of loneliness than adolescents without VI.
H3. Adolescents with VI report lower levels of self-esteem than adolescents without VI.
H4. Adolescents with VI report lower levels of well-being than adolescents without VI.

Peer attachment, loneliness, self-esteem, and well-being in adolescents

Psychological well-being is an important variable in the life of each individual and a desire towards which people naturally tend. As for adolescents, well-being is determined by the support, confidence, and resources they receive to reach their maximum potential and to realize their rights in contexts of secure and healthy relationships (Ross et al., 2020). There are numerous predictors of well-being, some of which have the potential to facilitate and others to diminish well-being.

Connectedness refers to positive social and cultural networks, to meaningful relationships with others, including family, peers, and other relevant adults, representing one of the conditions for achieving well-being (Ross et al., 2020). Adolescence is a life stage in which relationships with friends are of great importance, they can determine a higher or a lower level of loneliness, with direct effects on well-being. Peer attachment has an increased importance in adolescence when children build their individual identities and social capital, being associated with mental health and social adjustment (Cand, 2016). A secure peer attachment is linked to better well-being and

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adolescents will feel happier when they have closer and healthier friendships (Blomgren et al., 2016).

Loneliness is a painful feeling of sadness and emptiness that occurs frequently in adolescence, especially when one becomes aware of the inconsistency between actual and desired social connections (Weeks & Asher, 2012). In adolescents, loneliness has been linked to friendship quantity and quality, which can be attributed to a lack of peer acceptance or poor-quality friendships (Kingery & Erdley, 2007). Likewise, loneliness is an indicator of poor functioning in the different domains of well-being (Chen & Feeley, 2014). The aversive effects of loneliness influence overall life satisfaction due to the social disconnection from others (Chernyak & Zayas, 2010).

Starting from the above, we aim to verify whether peer attachment is negatively associated with loneliness, which in turn is negatively associated with well-being, and formulate the following hypothesis:

H5. Loneliness mediates the relationship between peer attachment and well-being in adolescents.

Also, adolescent self-esteem may impact the relationship between peer attachment and psychological well-being. Self-esteem reflects the individuals' emotional evaluation of their worth and sense of pride. It is closely related to self-consciousness and psychological well-being (Olsen et al, 2008). Self-esteem combines both the judgment and the attitude towards the self. Thus, in people with disabilities, self-esteem can affect emotional adjustment, adaptive behavior, social relations, coping strategies, and quality of life or happiness (Kupferberg & Hess, 2013). The development of self-esteem is considered an important step in the life "preparation" of all adolescents and especially of those with disabilities (Field & Hoffman, 2010).

Self-esteem is an essential aspect of personality, determines human behavioral characteristics and development, and includes a set of attitudes and beliefs manifested by people in their relationships with the outside world. Low self-esteem leads to physical and mental disorders such as depression, anxiety, communication problems, feelings of loneliness, indifference, and hopelessness. Such consequences increase visually impaired adolescents' vulnerability and lead to improper interpersonal relationships or lower levels of happiness (Mojarrad Kahani & Ghanavi, 2012).

Taking into account all this, we aim to verify whether self-esteem is associated with the relationship between peer attachment and the well-being of adolescents, thus formulating the following hypothesis:

H6. Self-esteem moderates the relationship between peer attachment and happiness in adolescents.

Method

Participants and procedure

A number of 80 adolescents aged between 17 years and 18 years participated in the present study, M = 17.58, SD = .50, of which 40 with VI (50%) and 40 without VI (50%), 47 males (59%) and 33 females (41%). Teenagers with VI are enrolled in a special high school for the blind, and those without VI are enrolled in mainstream high schools in Bucharest. The participants were informed in a specially organized meeting, in which a description of the research was made, thus obtaining the consent of the adolescents to participate and to process their personal data. The parents of the minors were informed by means of a written document that was presented to them

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during another meeting with the head teacher of each class. After the informed consent was signed by the participants and parents, the pencil-paper version of the questionnaires was applied. Adolescents with VI were helped by the study authors to read and understand the items and provide the appropriate response. Completing the questionnaires took 15 minutes for adolescents without VI and approximately 30 minutes for adolescents with VI. The norms of research ethics were respected.

Instruments

Sociodemographic data were collected by means of a list of questions regarding gender and age.

Peer attachment was measured with the Index of Parents and Peers Attachment, IPPA (Armsden & Greenberg, 1987). The instrument consists of 25 items rated on a 5-point Likert scale, where 1 – almost never or never true and 5 – almost always or always true. Three dimensions are measured, respectively peer trust, peer communication, and peer alienation. Item examples: "My friends understand me.", "My friends don't understand what I'm going through these days.".

Loneliness was measured with the UCLA Loneliness Scale, ULS (Russell, 1996). The instrument consists of 20 items rated on a 4-point Likert scale, where 1 – always and 4 – never. Item examples: "How often do you feel alone?", "How often do you feel that you lack companionship?".

Self-esteem was measured with Rosenberg's Self-Esteem Scale (Rosenberg, 1965). The scale includes 10 items rated on a 4-point Likert scale, where 0- strongly disagree and 3 – strongly agree. Item examples: "I feel that I have a number of good qualities.", "I take a positive attitude toward myself.".

Well-being was measured with the Oxford Happiness Questionnaire, OHQ (Hills & Argyle, 2002). The instrument includes 29 items rated on a 6-point Likert scale, where 1 – strongly disagree and 6 – strongly agree. Item examples: "I feel that life is very rewarding.", "I am always committed and involved.".

Research design

The present study has a differential and correlational cross-sectional design, with one single measurement. Data organization and statistical analyzes were performed using IBM SPSS 24 (IBM Corp, 2016) and Jamovi's medmod module (The jamovi project, 2022).

Results

Descriptive statistics

Means, standard deviations, Cronbach Alpha coefficients and correlations among variables are presented in Table 1.

Table 1. Means, standard deviations, Cronbach Alpha coefficients and correlations

	M	SD	α	IPPAT	IPPAC	IPPAA	ULS	OHQ	RSE
IPPAT	36.30	6.95	.74	1					
IPPAC	25.94	5.98	.70	.79**	1				
IPPAA	17.36	3.61	.75	-.16	-.00	1			
ULS	24.24	12.79	.82	-.57**	-.40**	.38**	1		
OHQ	118.08	24.03	.81	.63**	.43**	-.29**	-.70**	1	
RSE	19.56	7.02	.79	.56**	.45**	-.29**	-.63**	.82**	1

Note: **. p < .01

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IPPAT – peer trust, IPPAC – peer communication, IPPAA – peer alienation, ULS – loneliness, OHQ – well-being, RSE – self-esteem

Skewness and kurtosis range between -1.13 and .24, showing a normal data distribution.

Hypotheses testing

H1. *Adolescents with VI report lower levels of peer attachment than adolescents without VI.*

H2. *Adolescents with VI report higher levels of loneliness than adolescents without VI.*

H3. *Adolescents with VI report lower levels of self-esteem than adolescents without VI.*

H4. *Adolescents with VI report lower levels of well-being than adolescents without VI.*

In order to test hypotheses 1-4, we ran an independent samples t test (Table 2 and Table 3).

Table 2. Differential means and standard deviations for analyzed variables

	Group	N	M	SD	SEM
IPPAT	nonVI	40	40.13	5.89	.93
	VI	40	32.48	5.75	.91
IPPAC	nonVI	40	28.85	5.27	.83
	VI	40	23.03	5.24	.83
IPPAA	nonVI	40	16.50	3.36	.53
	VI	40	18.23	3.68	.58
ULS	nonVI	40	16.33	10.18	1.61
	VI	40	32.15	9.97	1.58
OHQ	nonVI	40	131.40	19.83	3.14
	VI	40	104.75	20.30	3.21
RSE	nonVI	40	23.13	5.47	.87
	VI	40	16.00	6.61	1.05

Note: nonVI – without visual impairments, VI – with visual impairments
IPPAT – peer trust, IPPAC – peer communication, IPPAA – peer alienation, ULS – loneliness, OHQ – well-being, RSE – self-esteem

Table 3. Independent samples t test

									95% CI	
		F	Sig.	t	df	p	MD	SED	Lower	Upper
IPPAT	Equal variances	.88	.35	5.88	78	.00	7.65	1.30	5.06	10.24
IPPAC	Equal variances	.16	.69	4.96	78	.00	5.83	1.17	3.49	8.16
IPPAA	Equal variances	1.34	.25	-2.19	78	.03	-1.73	.79	-3.29	-.16
ULS	Equal variances	.53	.47	-7.03	78	.00	-15.83	2.25	-20.31	-11.34
OHQ	Equal variances	.01	.93	5.94	78	.00	26.65	4.49	17.72	35.58
RSE	Unequal variances	4.36	.04	5.25	75.36	.00	7.13	1.36	4.42	9.83

The results show that there are significant differences between adolescents with VI and those without VI in all analyzed variables. Thus, for peer trust, adolescents without VI reported higher scores, M = 40.13, SD = 5.89 compared to adolescents with VI, M = 32.48, SD = 5.75, MD = 7.65, t(78) = 5.88, CI95% (5.06, 10.24), $p < .01$, with an effect size d = 1.31; for peer communication, adolescents without VI reported higher scores, M = 28.85, SD = 5.27 compared to adolescents with VI, M = 23.03, SD = 5.24, MD = 5.83, t(78) = 4.96, CI95%(3.49 , 8.16), $p < .01$, with an effect size d = 1.11; for peer alienation, adolescents without VI scored lower, M = 16.50, SD = 3.36 than adolescents with VI, M = 18.23, SD = 3.68, MD = -1.73, t(78) = -2.19, CI95% (-3.29, -.16), $p < .05$, with an effect size d = -.49; for loneliness, adolescents without VI

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reported significantly lower scores, M = 16.33, SD = 10.18 compared to adolescents with VI, M = 32.15, SD = 9.97, MD = -15.83, t(78) = -7.83, CI95%(-20.31, -11.34), p < .01, with an effect size d = -1.57; for self-esteem, adolescents without VI scored higher, M = 23.13, SD = 5.47 than adolescents with VI, M = 16.00, SD = 6.61, MD = 7.13, t(75.36) = 5.25, CI95%(4.42, 9.83), p < .01, with an effect size d = 1.17; for well-being, adolescents without VI reported higher scores, M = 131.40, SD = 19.83 than adolescents with VI, M = 104.75, SD = 20.30, MD = 26.65, t(78) = 5.94, CI95%(17.72, 35.58), p < .01, with an effect size d = 1.33.

H5. *Loneliness mediates the relationship between peer attachment and well-being in adolescents.*

In order to test H5 hypothesis, we ran a mediation analysis, having as predictors the three dimensions of peer attachment, as dependent variable well-being and as mediator variable loneliness (Table 4).

Table 4. Indirect and total effects

				95% C.I.				
Type	**Effect**	**Estimate**	**SE**	**Lower**	**Upper**	**β**	**z**	**p**
Indirect	IPPAT ⇒ ULS ⇒ OHQ	.92	.30	.33	1.52	.27	3.04	.00
	IPPAC ⇒ ULS ⇒ OHQ	-.08	.28	-.63	.47	-.02	-.28	.78
	IPPAA ⇒ ULS ⇒ OHQ	-.95	.34	-1.62	-.28	-.14	-2.78	.01
Component	IPPAT ⇒ ULS	-1.01	.27	-1.54	-.49	-.55	-3.77	.00
	ULS ⇒ OHQ	-.91	.18	-1.26	-.56	-.48	-5.13	.00
	IPPAC ⇒ ULS	.09	.31	-.52	.69	.04	.28	.78
	IPPAA ⇒ ULS	1.05	.32	.43	1.67	.30	3.32	.00
Direct	IPPAT ⇒ OHQ	1.51	.46	.61	2.42	.44	3.27	.00
	IPPAC ⇒ OHQ	-.45	.49	-1.41	.51	-.11	-.93	.35
	IPPAA ⇒ OHQ	-.26	.53	-1.31	.79	-.04	-.49	.63
Total	IPPAT ⇒ OHQ	2.44	.50	1.47	3.41	.70	4.92	.00
	IPPAC ⇒ OHQ	-.53	.57	-1.64	.58	-.13	-.94	.35
	IPPAA ⇒ OHQ	-1.21	.58	-2.35	-.07	-.18	-2.09	.04

Note: IPPAT – peer trust, IPPAC – peer communication, IPPAA – peer alienation, ULS – loneliness, OHQ – well-being, RSE – self-esteem

The results show that loneliness mediates the relationship between peer trust and well-being, b = .92, β = .27, CI95% (.33, 1.52), z = 3.04, p < .01 and the relationship between peer alienation and well-being, b = -.95, β = -.14, CI95% (-1.62, -.28), z = -2.78, p < .05, but not the relationship between peer communication and well-being. There are also significant negative associations between peer trust and loneliness, b = -1.01, β = -.55, CI95% (-1.54, -.49), z = -3.77, p < .01 and between loneliness and well- being, b = -.91, β = -.48, CI95% (-1.26, -.56), z = -5.13, p < .01, and positive associations between peer alienation and loneliness, b = 1.05, β =. 30, CI95% (.43, 1.67), z = 3.32, p < .01.

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H6. *Self-esteem moderates the relationship between peer attachment and happiness in adolescents.*

In order to test H6 hypothesis, we ran three moderation analyses, having as predictors, alternatively, the three dimensions of peer attachment, as dependent variable well-being and as mediating variable self-esteem.

Table 5. Moderation estimates for self-esteem in the relationship between peer trust and well-being

			95% CI			
	Estimate	**SE**	**Lower**	**Upper**	**Z**	**p**
IPPAT	.75	.21	.33	1.16	3.53	.00
RSE	2.36	.20	1.96	2.76	11.63	.00
IPPAT ✻ RSE	.05	.03	-.01	.11	1.65	.10

Note: IPPAT – peer trust, RSE – self-esteem

It is observed that self-esteem does not moderate the relationship between peer trust and well-being.

Table 6. Moderation estimates for self-esteem in the relationship between peer communication and well-being

			95% CI			
	Estimate	**SE**	**Lower**	**Upper**	**Z**	**p**
IPPAC	.12	.25	-.38	.61	.45	.65
RSE	2.79	.21	2.37	3.21	13.14	.00
IPPAC ✻ RSE	.09	.04	.01	.17	2.32	.02

Note: IPPAC – peer communication, RSE – self-esteem

It is observed that self-esteem moderates the relationship between peer communication and well-being, b = .12, CI95% (.01, .17), z = 2.32, p < .01.

Table 7. The relationship between peer communication and well-being at different values of self-esteem

			95% CI			
	Estimate	**SE**	**Lower**	**Upper**	**Z**	**p**
Average	.12	.26	-.40	.63	.44	.66
Low (-1SD)	-.51	.41	-1.32	.30	-1.23	.22
High (+1SD)	.74	.34	.07	1.41	2.16	.03

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At low and average levels of self-esteem, the relationship between peer communication and well-being remains unchanged, but at high levels of self-esteem, it intensifies, b = .74, CI95% (.07, 1.41), z = 2.16, p < .05.

Table 8. Moderation estimates for self-esteem in the relationship between peer alienation and well-being

			95% CI			
	Estimate	**SE**	**Lower**	**Upper**	**Z**	**p**
IPPAA	-0.41	0.43	-1.25	0.42	-0.97	0.331
RSE	2.72	0.22	2.29	3.15	12.44	< .001
IPPAA ✻ RSE	-0.04	0.07	-0.18	0.10	-0.57	0.568

Note: IPPAA – peer alienation, RSE – self-esteem

It is observed that self-esteem does not moderate the relationship between peer alienation and well-being.

Discussion

The hypotheses H1-H4 tested the differences between adolescents with and without VI regarding peer attachment, loneliness, self-esteem, and well-being. Peer attachment scored lower in adolescents with VI. They report that their friends do not always manage to understand their emotions, they feel awkward and cannot rely on friendships in the same way as adolescents without VI. This result can be attributed to the fact that the social skills of adolescents with VI are lower, but also to the reluctance that adolescents without VI have to initiate and develop close relationships with their VI peers. Studies show that adolescents with VI receive fewer texts and phone calls than adolescents with other types of disabilities and have less activity on social networks (Jessup et al., 2017). Kelly and Smith (2008) found that adolescents with VI can become more socially isolated even in the digital world, unlike their peers with other types of disabilities.

Our results showed that adolescents with VI spend more time alone, having rather passive activities, without interacting with peers or friends, having smaller social networks, consider friendships to be superficial and find it difficult to make friends. They also feel distant and excluded, misunderstood and unhappy to a greater extent than adolescents without VI. Similar results were found by Hektner et al. (2007), who attribute these experiences to personal characteristics, such as introversion, giftedness, or depression, but also to the disability itself. In a study on the friendships of adolescents with VI, it is shown that they tend to make friends with marginalized peers, considered "outsiders", that their peers without VI normally avoid (Koutsouris, 2014), which suggests that they also feel like "outsiders".

Regarding self-esteem, in our study, adolescents with VI scored significantly lower than adolescents without VI, and this result can be attributed to the fact that in order to develop a healthy self-perception, adolescents need a safe environment that allows them to explore, learn, and know themselves. Most of the participants in the present study are partially institutionalized, living on the high school campus and away from family. Lack of validation from those close to them can be a cause of low self-esteem. The studies carried out in this field have found heterogeneous results, some of them showing that the self-esteem of adolescents with VI is lower than those without VI,

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others showing that there are no significant differences (Augestad, 2017; Griffin-Shirley & Nes, 2005).

Well-being had lower results among adolescents with VI. The presence of VI limits the mobility and ability of adolescents to perform daily activities, thus leading to a decrease in well-being. Similar results were reported by Verstraten et al. (2005), showing that well-being is affected by high levels of loneliness and limited relationships with others.

Through hypothesis H5, the mediating role of loneliness in the relationship between peer attachment and well-being was tested. The results showed that loneliness mediates only the relationship between peer trust and well-being and between peer alienation and well-being. Thus, peer trust is negatively associated with loneliness, which in turn is associated with a lower level of well-being. In the same way, peer alienation is positively associated with loneliness, which in turn is negatively associated with well-being. Loneliness thus proves to be an important factor in determining the well-being of adolescents. It is known that loneliness in adolescence can have multiple causes, being either a form of intentional withdrawal or the result of poor social relationships. Trust in friends is able to reduce the level of loneliness, and alienation from friends accentuates this feeling, indirectly affecting well-being.

A meta-analysis by Achterbergh et al. (2020) showed that the experience of loneliness is driven by relational and environmental factors faced in childhood and adolescence, including parent-child relationships and interactions with peers. Poor relationships with friends lead to social withdrawal, limiting cooperative and collaborative activities, thus increasing loneliness, and negatively impacting well-being.

Through hypothesis H6 we tested the moderating role of self-esteem in the relationship between peer attachment and well-being. Self-esteem moderated only the relationship between peer communication and well-being, thus showing that high levels of self-esteem improve the relationship between peer communication and well-being. Similar results were obtained by Karatzias et al. (2006) in a study on predictors of well-being among adolescents, the authors showing that the strongest predictor is self-esteem.

Conclusion

The aim of the present study was to analyze the differences between adolescents with and without VI in terms of peer attachment, loneliness, self-esteem, and well-being. The results showed that there are significant differences in favor of adolescents without VI. These results emphasize the need to pay more attention to the well-being of adolescents with VI. They mainly attend special schools, which to some extent facilitates peer attachment among adolescents with VI, but beyond the special school environment, they face problems of socialization and social integration. In blind communities, relationships are close and based on trust and communication, but outside of these, adolescents with visual impairments are likely to encounter a number of barriers. Their participation in social life is limited by the nature of the visual impairment, and general functioning is affected.

Peer attachment is the starting point for the quality of later relationships of adolescents. Quality friendships can also help reduce loneliness and withdrawal. Often adolescents with VI avoid contexts in which they have to interact with the world because they feel unable to cope with the demands of everyday life. This phenomenon leads to a decrease in the quality of life and implicitly in the subjective state of well-being. In the present study, loneliness was found to

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mediate the relationship between peer attachment and well-being, which draws attention to the need for adolescents to relate and have quality interpersonal relationships in order to lessen the feeling of isolation and helplessness, to feel understood and valued.

Also, high self-esteem moderates the relationship between peer communication and well-being. Adolescents must be supported to develop a healthy self-concept in order to become responsible and functional adults. This responsibility rests largely with families, but also with schools. Teenagers spend a large part of their time at school, and this environment is not always the most conducive to the development of adequate self-esteem. Phenomena such as violence, bullying, social comparison can easily lead to a decrease in self-esteem and implicitly to a decrease in well-being.

It is recommended that the school environment be as positive as possible, where teenagers are valued and appreciated for what they can do successfully and not punished for what they cannot do well. It is probably necessary for the teachers themselves to make a change of perspective and understand the real needs of the adolescents, bending over them with more attention. Adolescents need to be heard and understood, they need to cooperate and collaborate, they need to be appreciated and to relate to peers and significant adults. All these needs can be covered by focusing on the student and not the teacher, by integrating strategies to increase self-image, by appreciating students according to their successes and not their failures.

Adolescents with VI participating in the present study are enrolled in special schools that focus mainly on teaching ways to adapt to normal life. However, the emotional area of adolescents is rarely discussed. Beyond school, students with VI face real problems of adaptation and social integration, which could easily be ameliorated by personal development and growth efforts that facilitate their adjustment to the social context in which they participate. Instead of retreating into solitude, teens with VI can learn that they, too, have opportunities for success in many professional or social fields. This can improve self-esteem and thus the personal perception of one's own worth.

Limitations and future research directions

Although the present study required a high volume of effort to collect data from adolescents with VI, there are a number of limitations, such as the small number of participants. In our further studies, we will consider recruiting a larger number of participants. Also, an in-depth investigation of peer-attachment, self-esteem, and well-being, as well as the professional integration or social adaptation of several categories of adolescents and young people with disabilities, would be necessary. Another limitation is the use of instruments that have not been validated on the Romanian population, nor in the context of people with VI. Although the adolescents with VI were closely assisted in completing the questionnaires, it is possible that there were items that the adolescents with blindness did not fully understand. In future studies, an adaptation of the instruments in easily accessible languages for all categories of participants with disabilities is recommended.

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