



Practical skills of persons with vision impairment

Praktične veštine osoba sa oštećenjem vida

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Abstract

Background/Aim. The acquisition of practical skills (PS), as well as adaptive behavior (AB) in general, is affected by an array of personal and environmental factors. The aim of this study was to determine the level of acquisition of practical adaptive skills (PAS) among adults with vision impairment (VI), in comparison to the norms among the general population and with regard to the vision status (low vision and blindness), age of vision loss onset, gender, age, living arrangements, education, and employment status. **Methods.** Seventy-nine (62.2%) participants who were blind and forty-eight (37.8%) participants with low vision and typical intellectual abilities voluntarily took part in the study. The respondents were aged from 19 to 60 years, with a mean age of 36.1 ± 11.8 years. PAS were assessed using the PS domain which is part of the Adaptive Behavior Assessment System II – ABAS II. **Results.** The scores achieved in the skill areas of the PS domain range from extremely low to average. Extremely low scores were detected in the Work skill area, while for the skill areas of Community use, Home living, and Health and safety, the scores were below average, and average scores were noted in the Self-care skill area. The degree of PS acquisition among participants with VI depended primarily on the vision status, but a significant connection with living arrangements and employment status was also established. **Conclusion.** Persons with VI showed significant limitations in the area of PS, which indicates the need for support programs designed to foster the development of self-reliance.

Key words:

adaptation, psychological; aptitude; surveys and questionnaires; vision, low; vision disorders.

Apstrakt

Uvod/Cilj. Niz ličnih i činilaca sredine utiče na usvajanje praktičnih veština (PV), kao i na adaptivno ponašanje (AP) u celini. Cilj rada bio je da se utvrdi nivo usvajanja praktičnih adaptivnih veština (PAV) kod odraslih osoba sa oštećenjem vida (OV), u poređenju sa normama u opštoj populaciji, kao i u odnosu na vizuelni status (slabovidost i slepilo), vreme gubitka vida, pol, životno doba, porodični status, nivo obrazovanja i radni status ispitanika. **Metode.** U istraživanju je dobrovoljno učestvovalo 79 (62,2%) slepih i 48 (37,8%) slabovidih ispitanika tipičnih intelektualnih sposobnosti. Ispitanici su bili starosti od 19 do 60 godina, srednja vrednost $36,1 \pm 11,8$ godina. Za procenu nivoa usvajanja PAV korišćen je domen PV koji pripada sistemu *Adaptive Behavior Assessment System II* (ABAS II). **Rezultati.** Vrednosti skorova ostvarenih na subtestovima/oblastima koji pripadaju domenu PV kretali su se u rangu od ekstremno niskih do prosečnih. Ekstremno niske vrednosti su zabeležene na subtestu Posao. Na subtestovima Život u zajednici, Život u kući i Zdravlje i bezbednost, skorovi su bili u rangu vrednosti ispod proseka, a na subtestu Briga o sebi, postignuti rezultati bili su u rangu prosečnih. Stepenn usvajanja PV kod osoba sa OV prvenstveno je zavisio od kategorije OV, a utvrđena je i značajna povezanost sa porodičnim statusom i radnim iskustvom. **Zaključak.** Osobe sa OV ispoljavaju značajna ograničenja u oblasti PV, što ukazuje na potrebu podrške programa koji podstiču razvoj njihovog nezavisnog funkcionisanja.

Ključne reči:

adaptacija, psihološka; sposobnost; ankete i upitnici; vid, oslabljen; vid, poremećaji.

Introduction

People with vision impairment (VI) face many difficulties in different areas of life, such as daily living skills, orientation, mobility, leisure activities, social interaction, and career choice^{1,2}.

According to the results of some studies, VI greatly affects the development of motor skills, which in turn directly affects the acquisition of practical skills (PS)³⁻⁶, relevant for self-care and instrumental daily living skills⁷. Among conceptual and social skills, PS represent an integral component

of adaptive behavior (AB), which is essential for the person's independence and safety⁸⁻¹⁰.

The acquisition and maintenance of PS is particularly difficult for people with VI, as the learning process requires observation, demonstration, and practice in everyday situations. Children and adults who are blind have a more narrow repertoire of acquired PS compared to those with low vision^{4, 11, 12}.

Besides confirmed differences related to the level of VI, daily functioning, vitality, and outdoor participation among young adults (18 to 25 years old) with VI significantly are lower than the norms of the age-related general population¹³.

Adults and elderly people with VI face difficulties with certain practical life skills two to three times more frequently than individuals from the general population. Binns et al.¹⁴ point out that persons with VI have a more limited set of PS, that they use the PS less often, feel insecure, and exhibit greater dependence on assistance from others. That primarily pertains to those PS which require good eyesight, such as personal hygiene, meal preparation, and movement outside the home (e.g., visits to a physician or shopping)^{15, 16}. Elderly people with vision loss (both partial and total) primarily face difficulties when it comes to independent movement, the use of public transport, completing tasks in their wider surroundings, and regular visits to the doctor¹⁷⁻²⁰; however, difficulties concerning household chores are not insignificant either.

PS, like AB in general, are affected by an array of personal and environmental factors²¹. That is why the creation of more efficient programs aimed at improving the self-reliance of people with VI requires a good understanding of the degree to which they succeed in acquiring a wide spectrum of practical adaptive skills (PAS) and the factors that affect this process²².

The aim of this study was to determine the level of acquisition of PAS among adults with VI in comparison to the norms among the general population and with regard to the vision status (low vision and blindness), age of vision loss onset, gender, age, living arrangements, education, and employment status.

Methods

Study sample

The participants are members of the Organization of Citizens with Visual Impairment of Belgrade (OCVIB), which is the largest in Serbia by number of members. The research sample consisted of 127 volunteers with VI of both genders, aged 19–60 years, mean age of 36.1 ± 11.8 years. The group included 79 (62.2%) participants who were blind [visual acuity lower than 0.05 (20/400)] and 48 (37.8%) participants with low vision [visual acuity ranging from 0.05 (20/400) to 0.3 (20/60)] according to World Health Organization, 2016²³. Seventy-nine participants (62.2%) had VI since birth. All participants lived in an urban environment and were involved in some of the rehabilitation programs

within the OCVIB (computer work, massage training, psychosocial counseling, orientation and mobility training, and daily life skills training). According to data obtained by the psychosocial services of the OCVIB, all participants exhibited typical intellectual abilities with no additional impairment.

The research sample was almost completely balanced regarding gender (51.2% of female, 48.8% of male participants). Concerning living arrangements, 60 (47.2%) persons lived with their parents, 41 (32.3%) lived with their spouses, and 26 (20.5%) lived alone. The majority had graduated from high school ($n = 86$; 67.7%) and a third of them had higher education ($n = 41$; 32.3%). Considering that only 38 (29%) respondents were employed at the time of the testing, we considered their work experience as well. More than half of the group confirmed that they had prior work experience ($n = 80$; 63%).

Instrument and procedure

To assess PS as a component of AB, we used the PS domain from the Adaptive Behavior Assessment System II – ABAS II²⁴. This domain consists of five skill areas (Community use, Self-care, Health and safety, Home living, and Work), encompassing a total of 116 items. Community use assesses the use of community resources and skills required for shopping and moving around. Self-care subtest involves the skills needed for eating, getting dressed, hygiene, and face and body care. Activities such as cleaning, doing repairs, housekeeping, and preparing food all relate to the Home living subtest. The skills necessary for maintaining health and responding to injury are part of the Health and safety subtest and include following safety rules and general caution. The Work subtest is applied only when a participant is employed part-time or full-time. It refers to the skills necessary for successful functioning and keeping a job (completing work tasks, working with a supervisor, and keeping up with the work schedule).

The respondents graded a statement by selecting one of the four answers provided: 0 – not applicable, 1 – never, 2 – sometimes, and 3 – always. The answers were added up after each skill area, providing a raw score which was subsequently converted to a standard score based on the chronological age of the participant. The standard score for each separate domain was obtained by adding up all the raw scores from the separate skill areas.

The values of the composite scores in each domain, based on the achievement of the American population, are sorted into one of the following categories: “very superior” (130 or more), “superior” (120–129), “above average” (110–119), “average” (90–109), “below average” (80–89), “borderline” (71–79), and “extremely low” (70 or less). The standard scores in skill areas belonging to the PS domain are distributed across the following categories: “superior” (15 or more), “above average” (13–14), “average” (8–12), “below average” (6–7), “borderline” (4–5), and “extremely low” (3 or less).

The study was conducted over six months, directly, through an interview with each participant, in the daytime

period, at the moment which was the most suitable for them. Professionals of the Organization assisted in making the initial contacts with the participants. We contacted 170 adults with VI by phone, and 131 of them accepted participation in the research, and for four participants, the data was not completed. After acquiring the data relevant to the visual status, age of vision loss onset, gender, age, education, living arrangements, and work experience, the participants were familiarized with the structure of the scale and the answers provided. The statements were read aloud to the participants, and their responses were recorded.

The study was approved by the Ethics Committee of the University of Belgrade – Faculty of Special Education and Rehabilitation (No. 17/30)

Data analysis

The Statistical Package for Social Science (SPSS, version 19) was used for data analysis. The achievements of participants with VI in the PS domain are presented in the form of basic descriptive measurements: arithmetic mean, standard deviation, and minimum and maximum values. The relationship between the variables was determined using the correlation coefficient. The significance of the differences in the achievements in the applied skill areas in accordance with the defined independent variables was tested through the application of one-way analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA).

Results

Observing the range of values of the standard scores achieved by participants with VI in different skill areas belonging to the PS domain, it is evident that the minimal values range from 0 to 2, which is extremely low in comparison to the norm-referenced score provided by the ABAS II, while the maximum values fall within the “above average” (13–14) to “average” (8–12) level. In comparison to the norm-referenced skill area scores, the mean values fall within the category of “extremely low” in the skill area of Work and “below average” in the skill areas of Community use and Home living. The scores achieved in the skill areas of Health and Safety and Self-care fall within the “average” category (more details in Table 1).

In comparison to the norm-referenced score, the minimum values of the composite scores achieved by participants with VI in the PS domain are at the “below average” level, while maximum values are “average”. The mean value of the score in the PS domain falls within the “borderline” category (4–5) (more details in Table 1).

Table 2 shows the intercorrelation between the skill areas belonging to the PS domain (more details in Table 2).

The relationship between the Practical skills domain scores and independent variables

Pearson coefficient showed no significant correlation between the age of a respondent and any of the assessed PS areas.

Table 1

Achieved scores for the skill areas of the Practical skills domain presented with descriptive parameters

Practical skills domain	Values	
	min-max	mean ± SD
Skill areas		
Community use	1–13	6.9 ± 2.8
Home living	1–13	7.3 ± 2.9
Health and safety	1–13	7.6 ± 2.8
Self-care	2–12	9.6 ± 2.9
Work	0–13	2.9 ± 3.9
Domain composite score		
Practical skills	49–100	79.2 ± 10.6

min – minimum; max – maximum; SD – standard deviation.

Table 2

Correlation between different skill areas of the Practical skills domain

Skill areas		Community use	Home living	Health and safety	Self-care	Work
Community use	<i>r</i>	/	0.475	0.577	0.359	0.042
	<i>p</i> -value	/	0.000	0.000	0.000	0.638
Home living	<i>r</i>	0.475	/	0.319	0.427	0.159
	<i>p</i> -value	0.000	/	0.000	0.000	0.075
Health and safety	<i>r</i>	0.577	0.319	/	0.314	0.019
	<i>p</i> -value	0.000	0.000	/	0.000	0.834
Self-care	<i>r</i>	0.359	0.427	0.314	/	0.114
	<i>p</i> -value	0.000	0.000	0.000	/	0.201
Work	<i>r</i>	0.042	0.159	0.019	0.114	/
	<i>p</i> -value	0.638	0.075	0.834	0.201	/

***r* – correlation coefficient; *p* – statistical significance.**

Bolded values are statistically significant.

The results of variance analysis indicate that there were no statistically significant differences between male and female participants with VI ($p = 0.769$). The relation analysis between the participants' gender and the achievements in individual skill areas revealed a significant score difference in favor of the female participants when it comes to the Home living skill area ($p = 0.002$), while the differences in other skills areas were not statistically significant (from $p = 0.142$ to $p = 0.998$).

Analysis of the relationship between visual status and the scores in the area of PAS is shown in Table 3.

The visual status has the most profound effect on the scores achieved in the Community use skill area ($\eta^{2part} = 0.412$).

No significant relation was found between the age of vision loss onset and the composite score in the PS domain, nor in the individual skill areas.

The level of education of the respondents turned out to be a statistically significant factor only in the Work skill area – $F(1) = 31.39$, $p \leq 0.000$. The participants who graduated from high

school estimate their Work skills significantly less favorably (mean value = 1.84) in comparison to those with higher education (mean value = 5.22). The scores of the respondents who graduated from high school and those with higher education did not differ significantly in other skill areas or the PS domain.

A similar result was observed through analysis of the relationship between participants' work experience and the PS. It was determined that work experience significantly affects only the estimation of work skills included in the Work skill area [$F(1) = 33.82$, $p \leq 0.000$]. Those with work experience estimated their work skills significantly better (mean value = 4.10) in comparison to those with no work experience (mean value = 0.94). In other skill areas and the PS domain, no significant differences were found with regard to whether the participants had prior work experience.

The analysis of variance also revealed a statistically significant relationship between living arrangements and PS (more details in Table 4).

Table 3
The relationship between the visual status and the scores in the Practical skills domain

Practical skills domain	Visual status	Values		F(1)	p-value	η^{2part}
		min-max	mean \pm SD			
Skill areas						
Community use	blindness	1–12	5.5 \pm 2.4	87.660	0.000	0.412
	low vision	5–13	9.2 \pm 1.6			
Home living	blindness	1–12	6.4 \pm 2.8	22.407	0.000	0.152
	low vision	3–13	8.8 \pm 2.4			
Health and safety	blindness	1–13	6.7 \pm 2.5	28.165	0.000	0.184
	low vision	1–13	9.2 \pm 2.5			
Self-care	blindness	2–12	71.4 \pm 4.3	5.876	0.017	0.045
	low vision	6–12	73.4 \pm 2.3			
Work	blindness	7–39	2.8 \pm 3.9	0.116	0.734	0.001
	low vision	21–45	3.1 \pm 3.9			
Domain composite score						
Practical skills	blindness	49–95	24.1 \pm 7.7	58.433	0.000	0.319
	low vision	70–100	33.9 \pm 5.7			

η^{2part} – partial eta-squared; F – coefficient of ANOVA. min – minimum; max – maximum; SD – standard deviation. Bolded values are statistically significant.

Table 4
Relationship between living arrangements and the scores in the Practical skills domain

Practical skills domain	Visual status	Values		F(1)	p-value	η^{2part}
		min-max	mean \pm SD			
Skill areas						
Community use	family of origin	1–13	6.7 \pm 3.2	3.479	0.034	0.054
	alone	4–12	7.5 \pm 2.1			
	married	3–11	6.9 \pm 2.6			
Home living	family of origin	2–12	6.5 \pm 2.7	6.982	0.001	0.102
	alone	5–12	8.7 \pm 1.9			
	married	1–13	7.7 \pm 3.2			
Health and safety	family of origin	1–13	7.2 \pm 2.4	6.263	0.003	0.092
	alone	1–13	9.0 \pm 3.3			
	married	1–13	7.5 \pm 2.6			
Self-care	family of origin	2–12	8.6 \pm 3.0	7.143	0.001	0.104
	alone	5–12	10.7 \pm 2.2			
	married	4–12	10.2 \pm 2.7			
Work	family of origin	0–11	2.4 \pm 3.6	0.611	0.545	0.010
	alone	0–13	3.4 \pm 3.9			
	married	0–12	3.5 \pm 4.5			
Domain composite score						
Practical skills	family of origin	7–45	24.7 \pm 8.6	13.763	0.000	0.183
	alone	20–44	32.6 \pm 5.9			
	married	13–42	29.4 \pm 7.9			

min – minimum; max – maximum; SD – standard deviation. Bolded values are statistically significant.

Post hoc analysis revealed a statistically significant difference between Domain composite scores of PS found between the participants who live with their family of origin and those who live alone (mean difference = 7.23, $p = 0.004$). The same analysis of the relationship between living arrangements and individual skill areas of the PS domain identified significant differences in the Self-care skill area between those who live with their families of origin and both those who live alone ($p = 0.007$) and those who are married ($p = 0.017$). In the Home living skill area, there was also a statistically significant difference ($p = 0.004$) between those who live in their families of origin and those who live alone. Furthermore, it was determined that the self-estimation of successfulness in carrying out household chores differed significantly between participants who lived alone and those who lived in their family of origin ($p = 0.001$). The difference between those who live alone and those who live in their family of origin with regard to the degree of acquisition of skills necessary for maintaining personal safety and health is also significant ($p = 0.013$).

Discussion

The mean value of the score (borderline) in the domain of PS indicates the significant limitations in this area of AB according to self-evaluation of the participants with VI, which is in line with the findings of other studies of both children and adolescents^{3, 5, 25}, young adults¹³, as well as elderly persons with VI^{16, 17}. It is possible that, along with the primary impairment, environmental factors also have an impact on the limited acquisition of PS since it is known that young and adult people with VI are not independent in their decision-making or in performing daily tasks such as doing chores and caring for their own health^{6, 7, 11–13, 19, 26–28}.

Observing the scores of the participants in the skill areas in the domain of PS, it is clear that the lowest scores are seen in the skill area of Work, which may be connected to the fact that most of the participants are unemployed. The high percentage of unemployment among people with VI may be a result of the poor job market, lack of motivation with regard to searching for work, and also the inability to get about independently as a significant reason for leaving an existing job²⁹. Among the employed participants, we identified difficulties in accessing the workplace and work materials. We should also take into consideration the fact that the limited scope of work for people with VI dictates, to a degree, their choice of profession, which may impact their motivation³⁰. Furthermore, previous research found that negative attitudes toward disability and unfavorable economic situations were additional factors for the low employment rate among people with VI in our society³¹.

The mean score achieved by the participants' self-evaluation in the skill area of Community use is also lower than that of the norm for the typical population, and here the greatest difficulties were caused by activities that require good motor skills and mobility. The Orientation and Mobility training is not available for all people with blindness in Serbia, especially those who lost vision in adulthood; therefore, it could be one of the reasons for the lower score in this skills area. The results of

other studies indicate that only 30–45% of adults with VI are active in their communities^{20, 32}. Authors point out that most elderly persons with VI spend their time at home without going out or performing other daily activities in their community³³, which is in accordance with our observations from the conversations we had with our participants. The studies that have focused on daily functioning in adults and elderly people who lost their sight in adulthood indicate that they have difficulties performing activities such as self-care, going to the bank or a social gathering, shopping, and using public transport independently^{17, 18}. The participants with VI had the highest average score in the domain of PS in the skill area of Self-care, which corroborates the results of previous studies^{18, 19, 26}. Qualitative analysis has shown that the participants have trouble performing tasks dependent on good vision and established aesthetic criteria. Although most claim to successfully care for their clothes, some believe that their attire is not following social norms; thus, they rely on help from family members or friends to choose their clothing. The results of previous studies show that VI negatively affects daily functioning at home^{12, 16, 34}. The average scores of our participants in the skill area of Home living and Health and safety are in the category of "below average" compared to the norm for the typical population. The parental overprotection of children with VI in their early years can lead to difficulties in performing household tasks³⁵. As they grow up, the demands upon them increase. Regardless of their visual status, the adults are expected to find a way and create strategies for performing household tasks independently due to new living arrangements³³. In our cultural and social environment, families tend to overprotect even adult people with VI, especially those who have lost vision later in life. The family members' expectations regarding the functioning and independence of people with VI are usually quite low.

Most of our participants are able to care for their own safety and maintain a high level of caution, which is to be expected given the higher risk of injury due to the difficulty or impossibility of visually monitoring the environment and events occurring within it. In the skill area of Health and safety, many difficulties concerning the care for their health were observed, as was a general divergence between the two groups of participants in this area. The interviews showed that one group exhibits great uneasiness and dependence on others, while the second group, in contrast, tends to neglect their health. Medical treatment outcomes may sometimes result in a loss of faith in public health institutions or the development of resistance towards medical services due to the nature of treatment and frequent hospitalization³⁶. Taking into consideration the dynamics of the acquisition, maintenance and weakening of PS through life, and the results of other studies^{17, 37}, the absence of a relationship between age and PS is somewhat surprising. As the age range (from 19 to 60 years) was encompassed in this research, we could have expected that the young adult persons acquired PS with more success than older participants since motor skills and physical activity decreased by the age^{3, 5, 17, 28, 34, 37, 38}. This can likely be explained by the stronger influence of other factors such as visual status, living arrangements, etc. Comparison of the results of female and male participants shows a significant difference only in the domain of

household tasks, which may be attributed to cultural gender roles in the country^{39, 40}. Female participants did not exhibit greater care for their health, hygiene, or appearance, even though some authors consider them more responsible and more successful in these areas of PS⁴¹. Following the results of previous studies^{17, 18, 42}, it has been established that persons with low vision acquire PS with more success than persons who are blind. The statistically significant differences in favor of the participants with low vision were established in all skill areas in the domain of PS, except in the skill area of Work. The results of other studies also confirm that for most persons who are blind, daily living activities, as well as leisure, are, in fact, a greater difficulty than for people with low vision^{2, 7, 15, 16}.

Although participants with low vision express more doubts about their success with completing household chores, the results in the skill area of Home living tell us that persons who are blind perform significantly fewer tasks in the home and they require help from family members or friends, as was established in the previous study³⁵. It was noted that good orientation in a familiar space and adaptation might help the person with blindness to be more independent in performing household tasks and feel safer³⁷. The significantly lower results of the respondents who are blind in the skill area of Health and safety may be attributed to difficulties in caring for their health (e.g., going to the doctor, getting information on their health condition, and taking prescribed medication)⁴³ and the decreased safety in open spaces due to a lack of visual information, which can cause them to overlook dangerous situations or obstacles and fail to protect themselves adequately^{35, 38}. The results in the skill area of Self-care indicate that persons who are blind have significantly more difficulties in maintaining personal hygiene and choosing appropriate clothing than persons with low vision, which confirms the findings of earlier studies^{7, 19} but is not in accordance with Langelaan et al.¹⁸ who claim that this visual status does not significantly affect the area of self-care. The age of vision loss onset might also influence the acquisition and practice of acquired PS. Partial or complete loss of vision in adulthood often leads to functional difficulties because the person is unable to perform practical tasks for which they relied on their vision before the impairment^{19, 38}. One of the greatest difficulties for persons who lose sight in adulthood is the mobility decrease, which influences their engagement in their environment. Nevertheless, our research detected no significant differences between participants with congenital and acquired VI concerning the acquisition of PS. Engaging in the practical aspects of life might decrease after vision loss, while participants with congenital VI have never acquired PS at an optimal level. A significant relationship between PS and the level of education, as well as work experience, was not found, which brings into question the assumption that for persons with VI, independence in daily tasks is a precondition to developing a career. Analyzing the influence of living arrangements, it was found that respondents with a VI who live alone have acquired better PS than the other two groups of participants (who live in a family of origin/parents and married participants), with the difference being statistically significant when compared to the group of participants who live with their parents. It is possible that, under the opinions of

some authors, participants who experienced independence during childhood had the opportunity to acquire PS and a sufficient level of self-confidence to begin independent life^{44, 45}. In accordance with our results, Desrosiers et al.³³ did not find any differences in the level of PS attainment between persons with VI who are married and those who are not.

Although family life requires a higher degree of responsibility and engagement in the practical aspect of life, the participants who are married have significantly lower results in the skill area of Self-care compared to those who live alone, which may be attributed to the possibility that this group of participants is protected by their spouses. Other authors point out that spouses and other family members often take on health care, household chores, and grocery shopping instead of persons with VI²⁷.

The limitations of this study include the fact that many participants ($n = 47$; 37%) did not have any work experience, which may have influenced the achievements in the Work subtest. Furthermore, some quality of life parameters, which might have been significant for the participants' achievements in the PS domain, were not included.

Conclusion

Based on the analysis of the results, we can conclude that adults with VI exhibit significant limitations in the domain of PAS. The scores achieved in the skill areas of the PS domain range from "extremely low" to "average". Extremely low scores were detected in the Work skill area, while for the skill areas of Community use, Home living, and Health and safety, the scores were "below average", and for the Self-care skill area, the scores were "average".

The study showed that the degree of PS acquisition among persons with VI depends primarily on the visual status, but a significant relationship between living arrangements and work experience was also established.

In summary, these results allow us to make recommendations for support services. It is necessary to establish specialized programs of instruction in everyday activities for children and adults who are blind, and for persons with low vision to make adaptations in the home, the environment, and the workplace. The training for the use of aids should become part of clinical practice in acquired VI, and enable more effective and motivated performance of PS. It is of particular importance for the parents of children with VI to be made aware of the importance of providing their children with opportunities to acquire PS since they are among the preconditions of future independence.

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Conflict of interest

The authors declare no conflict of interest.

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