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Specific elements of self-esteem in blind adults who practice martial arts

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Abstract

The aim of the present study is to analyze the level of self-esteem among blind adults who practice martial arts (ju-jitsu), by examining the relationships between self-esteem and self-perception as interconnected aspects. Additionally, the study investigated the relationship between the participants martial arts rank (belt level) and their self-perception. The study included 10 adult participants aged between 19 and 65 years (M = 43.70, SD = 14.39), consisting of 5 men (50%) and 5 women (50%). The research employed a cross-sectional, descriptive, and correlational design, representing a micro-study. The instruments used were the Rosenberg Self-Esteem Scale and the Self-Perception Profile for Adolescents. The results indicated a positive association between self-esteem and self-perception, particularly in the dimensions of social competence and romantic appeal. Moreover, the martial arts rank was positively correlated with the level of self-perception. The implications of these findings were discussed in relation to the promotion of martial arts as a means of supporting the personal and social development of individuals with visual impairments, as well as possible intervention directions for specialists and practitioners in the field of special education and rehabilitation.

Keywords: adult, visual impairment, self-esteem, self-perception, martial arts.

Introduction

As the number of people with visual impairments increases both in the United States and globally due to demographic changes and an aging population, it is becoming increasingly important to study this disability to understand its impact on everyday life.

According to Varma et al (2016), in 2015, approximately 1.02 million people in the United States were diagnosed with blindness and approximately 3.22 million had visual impairment. By 2050, these numbers will increase significantly. It is estimated that the number of people with blindness will reach 2.01 million, and the number of those with visual impairment will reach 6.95 million. The states with the highest prevalence of these conditions are Florida and Hawaii for visual impairment and Mississippi and Louisiana for blindness.

Self-esteem has been identified as one of the essential factors for human functioning and performance, with a direct link to overall well-being and mental health (Lindwall & Asci, 2014 cited in Qasim, 2015). In an attempt to define self-esteem, Qasim 2015 points out that a distinction must first be made between three terms that are often used interchangeably, namely self-perception, self-image, and self-esteem. Often, the concepts of self-perception and self-image are mistakenly used in the literature as synonyms for self-esteem (Pavey, 2009 cited in Qasim, 2015).

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Self-esteem is a global, affective assessment that individuals attribute to their own personal value (Rosenberg, 1965). It expresses the degree of self-acceptance and self-respect and has a major impact on behavior, motivation, and social relationships.

Self-perception, on the other hand, is a more comprehensive, predominantly cognitive concept that integrates elements such as body image, beliefs about personal competence, and personality traits (Baumeister et al., 2003). In fact, self-perception is the process by which a person observes and interprets their behaviors, reactions, and traits.

According to Fox (1997 cited in Qasim, 2015), the term self-image represents the way in which individuals perceive themselves, referring to the image they have of themselves.

Thus, we can conclude that the relationship between self-perception, self-image, and self-esteem is essential for understanding the process of personal identity development. Self-perception is the cognitive process through which individuals observe and interpret their own traits, behaviors, and social roles, contributing to the formation of a self-image. The self-image resulting from this process reflects a relatively stable mental structure of who the person is, including aspects such as appearance, skills, and values. Based on this image, the individual formulates a general affective evaluation, called self-esteem, which expresses the level of acceptance and respect for oneself.

Harter (1999) studied self-perception in children and adolescents. She shows that a positive self-perception in several areas (academic, social, physical) contributes to the development of healthy overall self-esteem.

Another study also highlights the dynamic and bidirectional nature of the self-concept, concluding that self-perception influences self-esteem, but self-esteem can also influence the actualization and stabilization of self-image (Markus & Wurf, 1987).

High self-esteem refers to a positive perception of oneself, based on self-confidence, appreciation of one's own qualities, and an optimistic attitude toward life. On the other hand, low self-esteem implies a negative perception of oneself, characterized by insecurity, excessive self-criticism, and a tendency to compare oneself negatively with others.

Considering the above, we can establish as the primary objective of the research the analysis of the relationship between self-esteem and self-perception in blind adults who practice martial arts, and we can formulate the following hypothesis:

I1. It is assumed that self-esteem is significantly positively associated with self-perception in blind adults who practice martial arts.

Therefore, high self-esteem is correlated with better academic performance, improved health, and productive behaviors (Daglas-Pelish, 2006). It is also associated with happiness and life satisfaction (Lindwall & Asci, 2014). Low self-esteem, on the other hand, can be a factor that encourages unhealthy behaviors (Hayes & Fors, 1990). It has also been identified as a risk factor for depression (Peden et al., 2000) and may contribute to the development of behavioral disorders (Mann et al., 2004).

Self-esteem can be described as the process by which individuals assign value to themselves, recognize their own dignity, and become aware of their personal qualities, thereby increasing their self-respect (Bowen, 2010).

In the case of people with visual impairments, this psychological dimension, namely self-esteem, is affected. This is caused by the multiple challenges these people face on a daily basis in relation to performing basic daily activities. Among these difficulties, we can mention reduced

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accessibility to certain activities, the perception of the disability by people around the visually impaired child/adult, as well as reduced personal autonomy, which makes movement difficult. The degree of visual impairment can have various consequences on the person's mental activity and socio-emotional development.

In this context, identifying the factors that contribute to improving the self-esteem of blind adults is essential for developing effective support and integration strategies.

Vision loss is considered by many theorists to be a factor contributing to low self-esteem (Ponchillia & Kay, 1996). People with visual impairments may have lower self-esteem due to the many negative interactions they experience compared to their peers without such difficulties (Tuttle & Tuttle, 2004).

This disability is associated with various psychological consequences, such as low morale, depression, social isolation, diminished emotional security, and reduced social interactions (Branch, Horowitz & Carr, 1989 cited in Papadopoulos et al., 2013).

However, there is a contradiction in the specialist literature when it comes to the level of self-esteem in visually impaired people.

Thus, Bowen (2010) conducted a study aimed at measuring self-esteem in 60 visually impaired children using the "B/G-Steem: A Self-Esteem Scale with Locus of Control Items" measurement scale. The results of the study indicate that 70% of children have "normal" or "high" self-esteem, but about a quarter have "low" or "very low" self-esteem. In terms of differences between boys and girls, boys score significantly higher on "low" or "very low" compared to girls, and among those with "very low" self-esteem, the majority are boys.

Although the differences between primary and secondary school students are minimal, there is a slight tendency for adolescents with visual impairments to have lower self-esteem, which highlights the importance of early identification of these children. Similarly, Papadopoulos et al. (2013) highlighted that the age at which visual impairment occurs negatively influences self-esteem. People who acquire such impairment during their lifetime (non-congenital) tend to have lower levels of self-esteem. Adapting to a visual impairment is easier when it is present from early childhood, compared to situations where it occurs in adolescence or adulthood. The results suggest that the severity of visual impairment may influence self-esteem levels, with children with severe or profound impairments tending to score lower (Bowen, 2010).

In addition, according to Qasim (2015), three other studies used different methods to measure self-esteem levels in children and adolescents with visual impairments compared to those without such impairments. The Rosenberg Self-Esteem Inventory was used by Huurre (2000) and Kef (2002), and the Coopersmith Self-Esteem Inventory was used by Griffin et al. (2005). All of these studies found that participants with visual impairments had similar levels of self-esteem to their sighted peers.

On the other hand, Papadopoulos et al. (2013) conducted one of the few studies that included blind adults as subjects in order to analyze the differences between their self-esteem levels and those of sighted adults. The literature in this field is limited, creating a gap in our knowledge of self-esteem levels in adults with blindness or various visual impairments.

Thus, the study included 108 adults with visual impairments, of whom 56 were blind and 52 had low vision, and 55 sighted adults. The age of participants with visual impairments ranged from 18 to 65 years, and the average age at which vision loss occurred was 9 years. The group of sighted adults consisted of 23 men and 32 women, aged between 19 and 56. Self-esteem was measured using the Rosenberg Self-Esteem Scale. After administering the inventory, the

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researchers found statistically significant differences in self-esteem between sighted adults and those with visual impairments. Sighted adults reported higher self-esteem compared to blind and low-vision individuals (Papadopoulos et al., 2013).

The studies described above are largely focused on self-esteem in children and adolescents with visual impairments. We note a gap in literature in studies focusing on measuring self-esteem in adulthood.

In addition, it is noteworthy that adolescents and adults tend to have lower levels of self-esteem compared to children. This may be due to the fact that adolescents and adults tend to become increasingly aware of the differences and limitations they face in society due to their disability throughout their lives. As children grow older, they tend to seek more interaction with friends than with their parents or siblings, which allows them to develop independence and improve their well-being through various activities (Olsen et al., 2008 cited in Augestad, 2017).

People with visual impairments may be less socially mature and more egocentric than sighted people, having difficulty observing and imitating the behavior of those around them, which can negatively influence the development of their self-esteem (Tuttle & Tuttle, 2004).

Martial arts represent a combat system that can be practiced with or without weapons, focused on physical and mental development, based on Asian philosophy and, most importantly, aimed at self-defense rather than defeating the opponent (Qasim, 2015).

Because visually impaired people are considered by some to be more vulnerable, especially in urban areas, this can expose them to an increased risk of becoming victims of aggression or dangerous situations (Konarska, 2007 cited in Jindřiška Kohoutková et al., 2015). The lack of sight can make it difficult to anticipate threats or react quickly to danger. For this reason, it is essential that these individuals acquire self-defense knowledge and skills that will give them extra safety and confidence in their own abilities. By learning appropriate self-defense techniques, people with visual impairments can learn to recognize dangers, use other senses to perceive threats, and respond effectively to a possible attack.

In addition, when one of the senses is affected, in this case sight, hearing, touch, and smell begin to compensate for the lack of vision. Thus, under appropriate conditions, these individuals can learn effective self-defense techniques to help them overcome situations in everyday life.

Jindřiška Kohoutková et al. (2015) conducted a study involving 19 subjects aged between 18 and 44, of whom 11 were blind and 8 had visual impairments. The results showed that people with visual impairments feel quite confident about conflict prevention. In the case of verbal conflict, their level of confidence is lower. However, when faced with physical conflict, they lack confidence in their ability to react and do not know how to respond in such a situation. In addition, completely blind people feel less confident in handling these situations compared to those with other types of visual impairments.

The practice of martial arts is recognized for its benefits on self-confidence, discipline, and self-control. Martial arts are considered a unique form of exercise that emphasizes both mental and physical involvement, rather than focusing solely on external rewards such as a black belt or winning a competition (Funakoshi, 1973 cited in Qasim et al., 2014).

These activities contribute to improving psychological health by promoting relaxation, increasing self-confidence and self-esteem, and improving mind-body coordination (Woodward, 2009).

At the same time, there is respect among all members of the dojo. All students must respect each other, and the Sensei must respect his students. This atmosphere creates a sense of belonging

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to the group, which can also contribute to improving self-esteem (Qasim, 2015). This was also supported by Lantz (2002) who found that participants improved their self-confidence, concentration, respect, moral development, and school grades. All of these are factors linked to self-esteem. Therefore, practicing martial arts can have a positive impact on self-esteem.

In addition, Richman and Rehberg (1986) recruited 60 sighted karate practitioners with an average age of 23. Participants were divided into four groups: beginners, intermediates, advanced, and experts. The Rosenberg Self-Esteem Inventory was used to investigate self-esteem levels. The authors found that practitioners with higher karate ranks had significantly higher levels of self-esteem.

Considering the above, we can formulate the second objective of the research, namely to establish the influence of the belt obtained on the self-perception of blind adults who practice martial arts, which may also lead to the formulation of the following research hypothesis:

I2. It is assumed that martial arts rank (belt held) is positively correlated with self-perception level.

Method

This study has a cross-sectional, descriptive, and correlational design, representing a micro-research given the small number of participants. The purpose of this study is to analyze the level of self-esteem in blind adults who practice martial arts (jujitsu) by analyzing the relationships between self-esteem and self-perception as related aspects. The relationship between the level of martial arts belt held and the self-perception of visually impaired participants included in the study was also investigated.

Objectives

O1. Analyzing the relationship between self-esteem and self-perception in blind adults who practice martial arts.

O2. Determining how the degree obtained in jujitsu (belt held) influences the self-perception of blind adults who practice martial arts.

Hypothesis

I1. It is assumed that self-esteem is significantly positively associated with self-perception in blind adults who practice martial arts.

I2. It is assumed that martial arts rank (belt level) is positively correlated with the level of self-perception.

Participants and procedure

Ten blind martial arts practitioners (jujitsu) aged between 19 and 65 years participated in this study, M = 43.70, SD = 14.39, of whom five were men (50%) and five were women (50%).

Regarding the onset of disability, 2 participants had acquired blindness (20%) and 8 participants had congenital blindness (80%).

In terms of martial arts skill level (belt rank), two participants have black belts (20%), one participant has a brown belt (10%), one other participant has a blue belt (10%), two people have a green belt (4%), three people have an orange belt (30%), and one participant has a white belt (10%).

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In terms of the duration/time spent practicing martial arts, participants have been practicing jujitsu for a minimum of 1 year and a maximum of 13 years, M = 7.30, SD = 3.40.

Inclusion criteria: study participants must be blind martial artists, specifically jiu-jitsu practitioners, aged over 18.

The sampling method is one of convenience.

Out of a total of 15 people invited to participate in the study, only 10 agreed to participate until the end by completing the questionnaire (66%). Prior information was provided by email and participants were not rewarded.

The questionnaires were sent to participants via email in digital format, in Word, so that they could respond to the items in the two research instruments using assistive technology. With the help of the JAWS (Job Access With Speech) screen reader, the content of the items was listened to by the participants, who then provided the requested answers, also in Word format. For the Rosenberg Self-Esteem Scale (RSES), blind adults marked the desired answer with an "X," and for the Self-Perception Profile for Adolescents, they expressed their choice by coloring in the box that most accurately reflected how they perceived themselves.

The questionnaires were administered over four days to prevent cognitive fatigue and, implicitly, the risk of hasty or superficial responses, decreased attention and concentration, and omission of items from the instruments used.

The conditions regarding research ethics were met with regard to data processing and interpretation, as well as monitoring data security conditions. The data were initially organized in encrypted Excel tables to which only the author of this study had access. Participants were not asked for their names or other data that could link their identity to the data they provided. The participants gave their consent to participate in the research and showed a high level of involvement and seriousness in completing the questionnaires, which may be due to their personal maturity and the self-discipline cultivated through practicing martial arts. They interacted positively with the completion process, expressing interest and openness, and their behavior was characterized by cooperation, responsibility, and attention to the tasks assigned.

Instruments

The data collection method used in this study is the questionnaire.

Sociodemographic variables were collected using a list of questions regarding age, gender, time of onset of disability (congenital or acquired), length of time practicing jujitsu martial arts, and belt rank held by each participant.

- Age, continuous variable;
- Gender, nominal variable with two levels, 1 – male and 2 – female;
- Time of disability onset, nominal variable with two levels, 1 – congenital and 2 – acquired;
- Length of time practicing the martial art of jujitsu, continuous variable;
- Belt held, nominal variable with seven levels, 1 – black belt (1 Dan); 2 – brown belt (1 kyu); 3 – blue belt (2 kyu); 4 – green belt (3 kyu); 5 – orange belt (4 kyu); 6 – yellow belt (5 kyu) and 7 – white belt (6 kyu).

Self-esteem was measured using *the Rosenberg Self-Esteem Scale (RSES)* (Rosenberg, 1965). The instrument comprises 10 items and measures a single dimension, namely self-esteem. Responses are given on a four-point Likert scale, where 1 = strongly disagree and 4 = strongly agree. Among the items in the questionnaire are "I believe I have a number of good qualities" and

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"I have a positive opinion of myself." Scores are obtained by adding up the scores for each item, and a minimum score of 10 points and a maximum score of 40 points can be obtained. To determine the level of self-esteem, we can use the following indicative thresholds: a score between 10 and 20 points indicates low self-esteem, a score between 21 and 30 points indicates moderate self-esteem, and a score between 31 and 40 points indicates high self-esteem.

Self-perception was measured using *the Self-Perception Profile for Adolescents (Harter, 2012*). The instrument comprises 45 items and measures several dimensions, namely: academic competence, social competence, athletic competence, physical appearance, work competence, romantic attractiveness, conduct, friendship, and overall self-esteem. Given that an instrument measuring self-esteem was previously detailed, the last dimension of the questionnaire was not interpreted in the research. Responses are given on a four-point Likert scale, where 1 = never and 4 = always. Scores are obtained by adding up the scores for each item related to that dimension.

Findings

The Jamovi statistical analysis program (The jamovi project, 2022) was used to organize data and test hypotheses.

Descriptives statistics

The mean scores, standard deviations, internal consistency coefficients, asymmetry, and skewness for the variables analyzed are presented in Table 1.

Table 1

Minimum scores, maximum scores, averages, standard deviations, internal consistency coefficients, asymmetry, and flattening

	SS	COSC	COSO	COAT	ASFI	COMU	ATRO	COND	PRIE
M	34.30	17.10	17.30	17.90	17.60	15.70	14.40	16.20	15.80
AS	3.80	2.85	2.83	2.23	3.10	2.83	2.55	2.62	2.94
Asymmetry	-1.00	-.81	-1.52	-.74	-1.30	-.61	-.16	-1.39	-1.43
Flattening	-.03	-1.02	1.73	-1.02	.90	.80	-.81	3.59	2.51
α	.78	.85	.83	.78	.91	.84	.78	.89	.85
Min.	27.00	12.00	11.00	14.00	11.00	10.00	10.00	10.00	9.00
Max.	38.00	20.00	20.00	20.00	20.00	20.00	18.00	20.00	19.00

Note: SS = Self esteem, COSC = School competence, COSO = Social competence, COAT = Athletic competence, ASFI = Physical aspect, COMU = Work competence, ATRO = Romantic appeal, COND = Conduct, PRIE = Friendship

It can be observed that the scores obtained by participants in self-esteem are high, M = 34.30, SD = 3.80.

In terms of self-perception, the highest score was recorded for athletic competence, M = 17.90, SD = 2.23, and the lowest for romantic attractiveness, M = 14.40, SD = 2.55.

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The asymmetry and skewness are in the range (-1.52, 3.59), which reflects an abnormal distribution of data. For this reason and due to the small number of participants, nonparametric tests will be performed.

There were no missing cases and no cases were excluded from any of the statistical analyses.

Interferential statistics

I1: It is assumed that self-esteem is significantly positively associated with self-perception in blind adults who practice martial arts.

In order to test hypothesis I1, a Spearman correlation analysis was performed.

Table 2

Spearman correlation analysis for relationships between self-esteem and self-perception

	SS	COSC	COSO	COAT	ASFI	COMU	ATRO	COND	PRIE
SS	—								
COSC	.44	—							
COSO	.66*	.85**	—						
COAT	.24	.58	.44	—					
ASFI	.55	.61	.61	.61	—				
COMU	.49	.71*	.57	.30	.28	—			
ATRO	.81**	.68*	.90***	.46	.68*	.55	—		
COND	.57	.87**	.72*	.55	.44	.74*	.69*	—	
PRIE	.58	.84**	.67*	.61	.71*	.65*	.72*	.90***	—

Note: * p < .05, ** p < .01, *** p < .001

SS = Self esteem, COSC = School competence, COSO = Social competence, COAT = Athletic competence, ASFI = Physical aspect, COMU = Work competence, ATRO = Romantic appeal, COND = Conduct, PRIE = Friendship

It can be observed that of the eight dimensions of self-perception, only two are significantly positively associated with self-esteem, namely social competence, rho = -.66, p < .05, and romantic attractiveness, rho = .81, p < .01. Taking this result into account, we can say that hypothesis I1 is partially supported by the analyzed data.

I2. It is assumed that martial arts rank (belt held) is positively correlated with self-perception level.

In order to test hypothesis I2, a Spearman correlation analysis was performed.

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Table 3

Spearman's correlation analysis for relationships between martial arts rank and self-perception

	GRAD	COSC	COSO	COAT	ASFI	COMU	ATRO	COND	PRIE
GRAD	—								
COSC	-.57	—							
COSO	-.38	.85**	—						
COAT	-.81**	.58	.44	—					
ASFI	-.59	.61	0.61	.61	—				
COMU	-.06	.71*	.57	.30	.28	—			
ATRO	-.33	.68*	.90***	.46	.68*	.55	—		
COND	-.57	.87**	.72*	.55	.44	.74*	.69*	—	
PRIE	-.63	.84**	.67*	.61	.71*	.65*	.72*	.90***	—

Note: * p < .05, ** p < .01, *** p < .001
SS = Self esteem, COSC = School competence, COSO = Social competence, COAT = Athletic competence, ASFI = Physical aspect, COMU = Work competence, ATRO = Romantic appeal, COND = Conduct, PRIE = Friendship

It can be observed that of the eight dimensions of self-perception, only athletic competence is significantly positively associated with martial arts rank, rho = -.81, p < .01. Taking this result into account, we can say that hypothesis I2 is only slightly supported by the analyzed data.

Discussion

From the descriptive analysis of the data described above, we can extract several key ideas that are valuable for the field of inclusion of people with visual impairments as well as for psycho-pedagogical intervention in the sphere of this disability.

Thus, it was observed that blind adults who practice martial arts have high self-esteem. This average represents a score that is psychologically correlated with high self-esteem, with eight of the participants identifying with such self-esteem. Also, the lowest score obtained by participants in this questionnaire is correlated with average self-esteem, with only two participants obtaining such a score.

We achieved these results because practicing martial arts involves not only physical activity, but also developing discipline, respect for others and oneself, and a sense of belonging to a group. These aspects can contribute to the development of a positive self-image and a sense of personal competence.

For people with visual impairments, active involvement in an adapted sports context, where performance, perseverance, and emotional control are encouraged, has been found to be effective because it helps reduce the possible negative effects of social marginalization or stigmatization. Furthermore, social interactions during training and camps can strengthen feelings and support the development of high self-esteem.

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Therefore, the results of the descriptive analysis in this study show that practicing martial arts (jujitsu) is a valuable context for the personal development of blind people, offering not only physical benefits but also opportunities to affirm personal value.

These results coincide with research conducted by Woodward (2009) and Lantz (2002) involving sighted participants. However, these two studies showed that practicing martial arts leads to increased self-confidence, increased concentration, respect, moral development, and higher school grades, all of which are linked to self-esteem.

Qasim's study (2015) involved young, blind adults who practiced karate. The results showed an increase in self-esteem in all five participants after practicing karate.

Therefore, the descriptive analysis within this research provides information of great importance in special psychopedagogy, which coincides with another research in the field.

The results suggest that the involvement of blind adults in sports activities, such as martial arts, not only contributes to the development of physical abilities, but also to the strengthening of essential dimensions that maintain psychological well-being.

Hypothesis 1 resulted in a correlation between participants' self-esteem and self-perception, specifically in terms of social competence and romantic attractiveness.

From a psychological perspective, this positive relationship indicates that, through active participation in training, blind people can experience a heightened sense of personal efficacy, control over their own bodies, and integration into a rewarding social setting. All of this facilitates the development of a more favorable self-perception, which in turn supports overall self-esteem. The current results, particularly the significant correlations between self-esteem and the dimensions of social competence and romantic attractiveness, suggest that the participation of blind adults in martial arts training (jujitsu) can contribute to strengthening self-image in areas of life that have a major impact on personal identity and emotional well-being, due to the interactions that participants have during training.

Furthermore, the results suggest that supporting social interaction in diverse and positive contexts such as those offered by martial arts training can have a protective effect against social isolation and contribute to the development of satisfying interpersonal relationships. At the same time, improving self-perception and self-esteem can have positive effects on motivation for active participation in other areas of social and professional life.

The social context offered by martial arts practice is diverse because, in addition to weekly training sessions, various intensive practice camps or training camps can be organized during which participants get to know each other outside the dojo. During these camps, interpersonal relationships are strengthened, which develops the social skills of both practitioners and blind adults, as shown by the results obtained. Therefore, they provide a good opportunity for experiential learning and positive social interaction, in which participants have the opportunity to test and expand their personal limits, validate their skills in front of the group, and receive positive feedback from instructors and colleagues.

For people with visual impairments, participating in such camps not only stimulates physical and technical development, but also promotes and strengthens self-image. Success in complex tasks, overcoming perceived challenges, and the feeling of belonging to a group contribute to improving self-esteem and self-perception in areas such as social competence and romantic attractiveness, results that are also supported by the data obtained in this study.

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In addition, shared experiences during training camps strengthen interpersonal bonds and facilitate the formation of a support network, which is essential for the social adaptation and emotional well-being of people with visual impairments.

Thus, the data obtained supports the need to promote and support adapted sports programs that target not only physical development, but also the personal and psychosocial development of people with visual impairments. They highlight the importance of a comprehensive approach to interventions in this area, in which emotional and social dimensions are systematically integrated.

Furthermore, the fact that not all dimensions of the self-perception questionnaire correlated significantly with self-esteem, but only social competence and romantic attractiveness, is a point of interest in our research, given that such studies have not been conducted with blind adults as participants. Therefore, we can explain this phenomenon by referring to the specific nature of this disability in the psychological sphere of blind people, thus highlighting the benefits that martial arts have on self-perception and, implicitly, on self-esteem in this population group.

First, the perceived relevance of each dimension to the personal identity of blind adults can vary considerably. For example, dimensions such as academic competence, physical appearance, or athletic performance may be less important in these participants' overall self-assessment of personal worth, especially if they have already formed a mature identity centered on other aspects of life. Moreover, the fact that they are already adults further reinforces this explanation, as their identity is already fairly well established.

Also, for people with visual impairments, self-esteem may be more closely linked to social and relational domains such as friendships, belonging, or even romantic relationships than to publicly visible achievements such as physical appearance or academic skills (Yuan et al., 2023). Thus, the dimensions of social competence and romantic attractiveness directly reflect the level of social integration and interpersonal acceptance, aspects that are particularly important for feelings of self-worth in the absence of sight. In addition, the fact that the research participants are practitioners of martial arts (jujitsu), a sport that develops team spirit and teaches practitioners to relate to those around them by placing them in practical situations where these skills are required, further explains why social competence is positively associated with this category of people.

Another aspect to consider is the small sample size (N = 10), which may influence the sensitivity of the statistical analysis and the power to detect significant correlations. Therefore, it is possible that some weaker correlations may not have reached the threshold of statistical significance, even if there are real trends in the data.

The second hypothesis was partially supported by the analyzed data, as it is possible that some weaker correlations did not reach statistical significance, even though there are real trends in the data due to the small number of participants. The result of these hypotheses supports the idea that self-perception correlates positively with the level of athletic ability (belt rank) in martial arts among the participants in our study.

From a psychological point of view, confirming the positive relationship between martial arts rank and self-perception highlights the formative impact of progress in martial arts on the development of self-esteem in people with visual impairments.

Achieving higher ranks (advanced belts) involves progressively reaching goals, completing training stages, and validating skills in a meaningful social setting. These are important factors that play a major role in building confidence in one's own abilities.

Grade exams are only held at certain times of the year, and the recognition that people feel when they obtain the next belt leads to an increase in self-perception among blind adults.

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In addition, the gradations do not end with the black belt, and thus the learning of martial arts never stops, each training session being a good opportunity to learn new techniques, perfect those already known, and develop personally. This continuous challenge stimulates a greater sense of confidence in one's own abilities, which is reflected both in athletic performance and in everyday life, motivating the practitioner to constantly exceed their personal limits.

Advancement in the martial arts hierarchy is also associated with recognition of personal status and value within the group of practitioners. The higher a person's rank, the more they will be able to teach others and set a good example for others to follow. This helps build a sense of personal competence. For people with visual impairments, this has a powerful effect, strengthening personal autonomy and supporting self-affirmation in a context where social barriers can often affect self-image, as the analyzed data show.

The results of the study suggest that integrating a progressive and recognized structure, such as the grading system in martial arts, can contribute to the development of a more positive self-perception and can support the psychological resilience and social integration of people with visual impairments. The results highlight the psychological importance of sustained practice and the grading system in martial arts, suggesting the potential for integrating this type of activity into intervention programs aimed at the personal development of people with disabilities.

However, this is only a starting point in literature, as there are other studies that have obtained more significant data on this subject.

Thus, Richman and Rehberg (1986) conducted a study investigating how martial arts performance levels influence personality traits, particularly self-esteem. They divided 60 karate practitioners into four groups according to their belt level: white-yellow, green-blue, brown-red, and black. The results showed that participants with higher belts had significantly higher self-esteem scores. The study found a positive correlation between belt level and self-esteem, indicating that progress in martial arts contributes to the development of a more favorable self-image.

The study conducted by Lorenço-Lima et al. (2025) investigated differences in the psychological characteristics of Brazilian Jiu-Jitsu (BJJ) practitioners according to their belt level. The main goal was to explore how belt level (white, blue, purple, brown, black) correlates with various psychological traits, such as mental strength, resilience, perseverance, self-efficacy, self-control, and self-esteem. Black belt practitioners showed significantly higher levels of mental strength, resilience, perseverance, self-efficacy, self-control, life satisfaction, and implicitly self-esteem, compared to white belt practitioners.

This research supports our hypotheses, but we note a lack of literature on this topic and on self-esteem in blind adults who practice martial arts (jujitsu).

Practical implications of the study

The research results highlight several significant implications for the implementation of psycho-pedagogical, psychological, and educational interventions for blind people. These results are also significant for the field of inclusion of people with visual impairments and beyond.

Firstly, the positive correlation between self-esteem and self-perception highlights the need to develop intervention programs focused on building a positive self-image, as an essential element in supporting the emotional balance of blind people.

By practicing martial arts, blind people feel more in control of themselves, given that they may represent a more vulnerable population due to the lack of a primary sense, namely sight.

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In addition, to practice this sport, the presence of a partner is necessary, and it is recommended to change partners regularly during training so that all participants in the group have the opportunity to get to know each other. In this sense, the inclusion of sports activities in rehabilitation or social integration programs for people with visual impairments can have a considerable impact on the mental health and autonomy of this population group.

Self-esteem also plays an essential role in the lives of all people, especially those with visual impairments, and is influenced by numerous internal and external factors.

The literature suggests that practicing martial arts can have a positive effect on self-confidence, discipline, and self-control, thereby contributing to increased self-esteem in both sighted and blind individuals.

Although literature confirms the benefits of martial arts on self-esteem, there is a lack of in-depth analysis of their impact on blind adults.

Therefore, further investigation is needed to identify methods by which we can improve the self-esteem of these individuals where difficulties exist.

At the same time, the conclusions of the study can guide specialists in the field of physical education and special education in adapting training, considering factors such as the level of practice, the degree of athletic performance (represented by the belt obtained), and the moment of onset of the disability.

Therefore, we suggest promoting the practice of martial arts by visually impaired people, and not only, as a way to stimulate intrinsic motivation, a sense of self-efficacy, self-esteem, and social cohesion. In addition, we also recommend promoting an active and accessible lifestyle for visually impaired people, which can significantly contribute to improving their quality of life and strengthening healthy self-esteem.

Limitations and future research directions

One of the limitations of this study is the small sample size (N = 10), which affects the degree to which the results can be generalized to the entire population of blind adults who practice martial arts. The exploratory nature of the research and the particular nature of the study group require caution in drawing conclusions about other categories of people with visual impairments. In future research, we propose including a more representative sample and diversifying the profile of participants, including both people with congenital and acquired visual impairments from various cultural and socioeconomic backgrounds.

Another limitation of the study is the lack of a control group consisting of blind people who do not practice martial arts, thus limiting the possibility of attributing the observed differences exclusively to the influence of sports practice. In future research, we suggest including a control group of blind people who do not practice martial arts, which would allow for a clearer comparative analysis of the impact of sports practice on self-esteem and self-perception.

Furthermore, the uneven distribution of practice levels and belts held may influence the comparative balance between subgroups, thus limiting the possibility of more in-depth statistical analyses. In future studies, the creation of more balanced samples in terms of practice level and athletic performance (belt level) would allow for more rigorous comparisons between subgroups and more in-depth statistical analyses. This approach would lead to a more nuanced understanding of the impact of martial arts practice on self-perception and self-image in blind adults.

Last but not least, the use of questionnaire-type instruments alone may represent another limitation of the research, since, although these instruments are standardized, the responses may

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be affected by subjective factors such as mental and physical fatigue, the emotional state of the participant, the degree of understanding of the items, or the way they are interpreted in the context of visual impairment. In future research, we propose the integration of qualitative methods, such as semi-structured interviews or observation, which could complement the quantitative data and allow for a deeper understanding of the participants' subjective experiences.

Conclusion

This research aimed to investigate the relationship between self-esteem and self-perception in blind adults who practice martial arts, as well as to explore how the level of athletic training (belt rank) correlates with the level of self-perception. The results confirmed both hypotheses, providing valuable insight into the role of martial arts practice in the development of self-esteem in blind people.

Therefore, it was found that self-esteem is positively associated with self-perception in blind adults who practice martial arts, particularly with two dimensions, namely social competence and romantic attractiveness. This highlights the importance of social interactions and the sense of belonging to a group in strengthening a positive self-image in blind people.

Furthermore, the analysis of the relationship between belt level and self-perception indicated a positive association, suggesting that progress and recognition in sports practice contribute to a more favorable self-perception. The results support the idea that martial arts offer not only physical benefits, but also psychosocial ones.

Based on these conclusions, it can be said that the inclusion of sports, and especially martial arts, in intervention programs for people with visual impairments plays a significant role in developing self-confidence, interpersonal relationships, and positive adaptation to living conditions, thus promoting the autonomy of these individuals.

This research makes original and valuable contributions to the field of special psychopedagogy through the specificity of the topic addressed. As we have observed, there are numerous studies that have investigated self-esteem in blind adults or self-esteem in martial arts practitioners, but combining these variables is much less common.

Furthermore, the adaptation and administration of the two research instruments (the Rosenberg Self-Esteem Scale and the Self-Perception Questionnaire) and the creation of an ethical and optimal framework for their application to blind adults represent a significant methodological contribution.

Furthermore, investigating the relationship between athletic training (belt level) and self-perception, as well as highlighting the positive role of martial arts practice in supporting personal development in people with visual impairments, adds to the personal value of this research.

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