EFFECTS OF TEAM-SPORT PRACTICE ON THE WELL-BEING AND QUALITY OF LIFE OF PEOPLE WITH VISUAL IMPAIRMENTS: A SYSTEMATIC REVIEW

EFECTOS DE LA PRÁCTICA DE DEPORTES DE EQUIPO EN EL BIENESTAR Y LA CALIDAD DE VIDA DE LAS PERSONAS CON DISCAPACIDAD VISUAL: UNA REVISIÓN SISTEMÁTICA

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Collective Sports and Quality of Life in People With Visual Impairment

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Abstract

The purpose of this systematic review was to analyze the scientific published evidence of the last ten years in relation to the effects of team-sports practice on the well-being and quality of life of people with visual impairments. The following keywords were used: ["quality of life" AND "adapted sport" OR "visual impairment" AND "adapted sport" OR "paralympic sport" AND "quality of life" OR "visual impairment" AND wellness OR "paralympic sport" AND wellness] in electronic databases (Web Of Science, PubMed, EBSCO, Scielo and Elsevier). Articles published between June 2011 and June 2021 were specifically considered for review. A total of seven articles were selected, all research (six cross-sectional and one longitudinal) that had studied the variables of well-being and quality of life in people with visual impairment aged between 20 and 45 years, who practice an adapted sport of collective modality. Findings support there is a relationship between the perception of quality of life and well-being with the practice of adapted sports of collective nature, in the population of people with disabilities who practice torball, Italian baseball, goalball and blind football. In addition, it is highlighted that sports practice is a tool for equity, since studies show that subjects with visual impairment can reach the same levels of perception of quality of life and well-being as subjects without visual impairment.

Keywords: Quality of life, well-being, visual impairment, adapted sport.

Resumen

El objetivo de esta revisión sistemática fue analizar la evidencia científica publicada en los últimos diez años en relación con los efectos de la práctica de deportes de equipo sobre el bienestar y la calidad de vida de las personas con discapacidad visual. Se utilizaron las siguientes palabras clave: ["quality of life" AND "adapted sport" OR "visual impairment" AND "adapted sport" OR "paralympic sport" AND "quality of life" OR "visual impairment" AND wellness OR "paralympic sport" AND wellness] en bases de datos electrónicas (Web Of Science, PubMed, EBSCO, Scielo y Elsevier). Se consideraron específicamente para la revisión los artículos publicados entre junio de 2011 y junio de 2021. Se seleccionaron un total de siete artículos, todas investigaciones (seis transversales y una longitudinal) que habían estudiado las variables de bienestar y calidad de vida en personas con discapacidad visual de entre 20 y 45 años, que practican un deporte adaptado de modalidad colectiva. Los resultados apoyan que existe una relación entre la percepción de calidad de vida y bienestar con la práctica de deportes adaptados de carácter colectivo, en la población de personas con discapacidad que practican torball, béisbol italiano, goalball y fútbol para ciegos. Además, se destaca que la práctica deportiva es una herramienta de equidad, ya que los estudios demuestran que los sujetos con discapacidad visual pueden alcanzar los mismos niveles de percepción de calidad de vida y bienestar que los sujetos sin discapacidad visual.

Palabras Clave: Calidad de vida, bienestar, discapacidad visual, deporte adaptado.

Introduction

Visual impairment encompasses both low vision and blindness and stands as a significant contributor to challenges in human functionality worldwide (Pascolini & Mariotti, 2011; Stevens et al., 2013; World Health Organization [WHO], 2023). According to WHO (2020), the global prevalence of visual impairment reaches 2.2 billion people, with an alarming estimate of one billion cases being potentially preventable or unaddressed (WHO, 2023). The absence of sight profoundly impacts motor development and abilities. Kohda et al. (2019) highlights the challenges and discomfort experienced in daily activities

such as walking, reading, driving, and sewing. Despite this, individuals with visual impairments remain capable of engaging in physical activities (Malwina et al., 2015). Nevertheless, research by van der Ploeg et al. (2004) suggests that, on average, individuals with visual impairments are less active compared to the general population; and increasing the likelihood of decrease health outcomes (Siira et al., 2019). In fact, it is further demonstrated that individuals with visual impairments tend to lead more sedentary lifestyles compared to those with other disabilities, resulting in lower levels of physical fitness—a factor crucial for mental and physical health (Lee, 2014; Malwina et al., 2015; Siira et al., 2019; Starkoff et al., 2017; Warburton et al., 2006).

A substantial proportion of individuals with visual impairments fail to meet recommended levels of physical activity (Ross et al., 2022). As noted by Starkoff et al. (2017), this can have significant implications for their mental health specifically. Additionally, approximately one-third of individuals with visual impairments experience psychological depression and anxiety, as reported by Goodwin (2003) and Zhai et al. (2015), respectively. Moreover, a notable 5% to 7% exhibit significant symptoms of depression and anxiety, surpassing the prevalence observed in the sighted population (Lee et al., 2014). Moreover, those with visual impairments are often associated with mental fatigue, reduced social interactions, and can precipitate feelings of loneliness and social isolation (Kohda et al., 2019). Furthermore, as highlighted by Kohda et al. (2019), these psychological challenges are evident even among children with visual impairments. Thus, it is imperative to deepen our understanding and investigation of the psychological characteristics unique to individuals with visual impairments, with the aim of facilitating their personal development and enhancing their overall well-being and quality of life.

Quality of Life (QoL) is considered as proposed by the WHO, in conjunction with Ardila (2003). Then, here we recognize QoL as a state of general satisfaction, derived from the performance of the potentialities of the person. Moreover, QoL is composed of both objective and subjective aspects and its perception is of an individual nature (Siira et al., 2019). Both QoL and visual impairment are complex concepts that encompass objective (such as employment, socioeconomic status, and health) and subjective (values and beliefs) components, integrating into personal, social, and environmental contexts. Visual impairment impacts not only the physical, but also the psychological, spiritual and social, requiring adaptive mechanisms to cope with barriers and prejudices that can influence the CV of people with this disability (Castro et al., 2016).

People with visual impairment face considerable challenges in daily tasks that affect their QoL and their interaction with the environment (Alibegovic & Hadzipasic, 2022). However, the use of alternative techniques allows them to develop self-reliance and effectively adapt to their specific visual limitations, whether low vision or blindness (Retamozo & García, 2015). Physical activity, although beneficial, poses particular challenges for this population due to environmental and social barriers to participation in sports and fitness activities (Kirk et al., 2021; Kohda et al., 2019). These barriers contribute to lower levels of fitness among people with visual impairment compared to those without visual impairment (Kirk et al., 2021; Mirandola et al., 2019). Nevertheless, physical activities and sports have substantial potential to promote positive values, equitable opportunities, and social inclusion (Luarte-Rocha et al., 2023). Furthermore, social support, defined as encouragement from a person's social network, which includes family, friends, and health care providers, can improve mental quality of life and physical activity participation, underscoring the potential of structured physical activity and sports to improve mental well-being through social interaction and support (Haegele et al., 2023).

A growing body of research indicates the potential benefits of sports participation for both physical and mental wellbeing (Goodwin, 2003; Starkoff et al., 2017; Zhai et al., 2015). However, there remains a big gap in knowledge regarding the health status of individuals with visual impairments who engage in sports activities in particular. Additionally, limited information exists concerning the mental health of visually impaired athletes, including those competing at high levels (Kohda et al., 2019). Despite ongoing advancements in research, gaps persist in understanding the QoL among athletes with visual impairments. Recognizing the importance of comprehensive biopsychosocial monitoring for athletes, various factors such as physical and mental health, emotional wellbeing, and cultural considerations need to be taken into account (Vigário et al., 2019; Correa et al., 2020). Generating scientific evidence pertaining to psychosocial aspects in athletes with visual impairments is crucial, as these individuals not only constitute a vulnerable group influenced by factors related to sports participation and training but also face specific challenges inherent to their disability (Vigário et al., 2019). Indeed, findings from research focusing on paralympic athletes (Jefferies et al., 2012) underscore the undervaluation of athletes with visual impairments. Additionally, this indicates a need for heightened attention to their unique needs within physical activity contexts (Haegele et al., 2023), including team-sports environments (Mastro et al., 1996).

For this reason, although has revealed research in the relationship between health and sports activity of people with visual impairments; there are few studies that consider that both sports practice and the QoL in this population. Moreover, quantitative data related to athletes with visual impairments continues to be scarce (Vigário et al., 2019). Therefore, the purpose of this study was to analyze the scientific evidence related to the effects of team-sports practice on the well-being and quality of life of people with visual impairments. This study aims to contribute to the academic community and society by examining the impact of sports practice on the well-being and quality of life of individuals with visual impairments. Based on a systematic review from 2011 to 2021, we seek to better understand how sports practice can overcome social barriers,

create inclusive opportunities, and promote athletic development for individuals with visual impairments, ultimately enhancing their overall well-being.

Materials and Methods

Type of Study

The process of completing and reporting this review adhered to the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) Protocols (Page et al., 2021). The paradigm that guides this systematic review corresponds to the interpretive paradigm (Pérez-Serrano, 1994), the qualitative approach of descriptive scope (Hernández et al., 2014; Ramos, 2015).

Procedures

A search for the relevant literature was conducted using the following electronic databases: (a) Web Of Science, (b) PubMed, (c) EBSCO, (d) Scielo and (e) Elsevier databases were used. The search for articles was performed until June 30, 2021 and specifically articles published from June 2011 to June 2021 were considered for review. For the purposes of searching the data sources indicated previously, the following keywords and boolean operators were used in the English, Spanish, and Portuguese languages, respectively. Specifically in English the terms used were ["quality of life" AND "adapted sport" OR "visual impairment" AND "adapted sport" OR "paralympic sport" AND "quality of life" OR "visual impairment" AND "wellness" OR "paralympic sport" AND "wellness"]. In the Spanish we utilized: ["calidad de vida" AND "deporte adaptado" OR "discapacidad visual" AND "deporte adaptado" OR "deporte paralímpico" AND "calidad de vida" OR "discapacidad visual" AND "bienestar" OR "deporte paralímpico" AND "bienestar"]. Lastly, in the Portuguese language we considered: ["qualidade de vida" AND "esporte adaptado" OR "deficiência visual" AND "esporte adaptado" OR "esporte paralímpico" AND "qualidade de vida" OR "deficiência visual" AND "bem-estar" OR "esporte paralímpico" AND "bem-estar"].

Inclusion and Exclusion Criteria

To be considered within this review, we considered articles that: (a) be published within the years 2011 and 2021, (b) be published in the English, Portuguese and Spanish languages due to the language expertise of the research team, (c) the sample included people with visual impairments, without sex nor gender distinction , (d) ages between 20 and 45 years of age, (e) the study was carried out within the context of adapted sports of a collective nature (e.g., wheelchair basketball), and were empirically based. The exclusion criteria were studies published in languages other than English, Spanish, and Portuguese; the participants considered were with physical, sensory, auditory and cognitive disabilities; worked that corresponded to without methodological support or book chapters, as well as thesis and dissertations.

Evaluation Criteria

The articles found were submitted to reading and judgment by all researchers independently. Disagreements regarding search terms and information platforms were resolved, so the participation of a mediator was not necessary. For the methodological review, the Critical Appraisal Checklist for Qualitative Research tool (Lockwood, 2015) was used for appraisal of each article considered for review. This is an instrument that carries out an exhaustive analysis to assess the methodological quality of the selected articles. This assessment is carried out through a list of 10 questions, being answered with "yes", "no", "unclear" and "not applicable" (Table 1).

Table 1
Quality Evaluation of Selected Studies

Studies	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Ilhan et al. (2021)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Vigário et al. (2019)	Y	Y	Y	Y	Y	Y	Y	Unclear	Y	Y
Kohda et al. (2019)	Y	Y	Y	Y	Y	Unclear	N/A	Y	Y	Y
Mirandola et al. (2019)	Y	Y	Y	Y	Y	Y	Unclear	Y	Y	Y
Roztorhui et al. (2018)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Guerra et al. (2018)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Di Cagno et al. (2013)	Y	Y	Y	Y	Y	Y	Unclear	Y	Y	Y

Note. Q1: Is there congruence between the declared philosophical perspective and the research methodology?; Q2: Is there congruence between the research methodology and the research question or objectives?; Q3: Is there congruence between the research methodology and the methods used to collect data?; Q4: Is there congruence between the research

methodology and the representation and analysis of data?; Q5: Is there congruence between the research methodology and the interpretation of results?; Q6: Is there a statement that locates the researcher culturally or theoretically?; Q7: Is the influence of the researcher on the research and vice versa addressed?; Q8: Are participants and their voices adequately represented?; Q9: Does the research ethics conform to current criteria or, in the case of recent studies, and is there evidence of ethical approval by an appropriate body?; Q10: Are the conclusions drawn in the research report derived from the analysis or interpretation of the data?

Statistical Analysis

In this review, we analyzed the qualitative variables based on the effects provided by the practice of physical activity and adapted sport in adults with visual impairments. At a psychological level, variables related to mood will be evaluated, directly linked to the well-being of individuals with visual impairments who practiced adapted sports, in comparison with groups of participants of similar characteristics who did not practice nor participated in any physical activity or adapted sport. Likewise, the social component was integrated to the psychological aspect, directly determines the QoL of persons with visual impairments. The descriptive analysis of this systematic review was developed following the selected literature, regarding the relationship between the keywords of well-being, QoL and collective sports practice of people with visual impairments. The sports practice considered in each study was analyzed and related to the results obtained, the study variables, the characteristics of the sample (e.g., population of people with sedentary disabilities, genders, and levels of visual impairment; B1, B2 and B3 according to International Blind Sports Federation [IBSA]) (Table 2).

Table 2
Summary of Selected Studies

Author (Year)	Research design	Sample		Sport	Variables considered	Measurements	Results
Ilhan et al. (2021)	Cross-sectional	100 athletes with VI (22.5 ± 8 years) 100 sedentary subjects with VI (22.8 ± 8.3 years)	Active and sedentary subjects	Non-identified	Quality of life	SF-36	SF-36 scores were higher among athletes in contrast to sedentary subjects. The duration of sports activities in years positively correlated with the physical functioning score. Athletes who had vision loss at a younger age had better scores on physical functioning and role limitations due to physical problems
Vigário et al. (2019)	Cross-sectional	44 athletes (n = 32 men and n = 12 women) ages 26.8 ± 6	Active men and women	Blind Soccer Goalball Other individual sports	Mood Quality of life	Beck's depression scale SF-36 POMS	The participants presented a positive profile of mood states, low risk of depressive disorder and positive perception of quality of life.
Kohda et al. (2019)	Cross-sectional	81 athletes (n = 59 men, n = 22 women) ages 32.8 ± 12	Active men and women	Goalball Blind Soccer Other individual sports	Mental health	K8 Japanese scale	11.9% of men and 45.5% of women participating in the study had poor mental health conditions. Women had "higher evaluation of the environment for competition stressors" and "lower social support from family members" were the risk factors for poor mental health.

Mirandola et al. (2019)	Cross-sectional	43 baseball players with VI (n = 36 men and n = 7 women) ages 38.1 ± 12 34 sedentary subjects with VI (n = 20 men y n = 14 women)	Active and sedentary men and women	Baseball	Psychological wellbeing Quality of life	PWB-18 SF-12	The practice of baseball can have a positive impact on the psychological well-being and quality of life of people with visual impairments.
Roztorhui et al. (2018)	Longitudinal	34 persons with VI (n = 16 women and n = 18 men) B1 (25.63 ± 6.35 years) B2 (27.4 ± 5.74 years) B3 (26.25 ± 7.02 years)	Active men and women	Blind Soccer Other individual sports	Quality of life	SF-36	The perception of the quality of life of Persons with VI depends on the level of vision loss. B1 athletes have a significantly lower perception of quality of life than B2 and B3 athletes. The implementation of the sports and rehabilitation program has been proven effective for the perception of quality of life in people with visual disabilities.
Guerra et al. (2018)	Cross-sectional	37 men with VI. 12 blind soccer athletes (27.3 ± 10.2 years) 13 Goalball athletes (30.3 ± 7 years) 12 sedentary subjects (25.3 ± 2.3 years)	Sedentary and active men	Goalball Blind Soccer	Quality of life	WHOQOL-Bref	Athletes with VI had higher overall quality of life and general health scores across all domains of the WHOQOL-Bref than physically inactive people. No signifcant differences among goalball and blind soccer athletes. Sports practice could be related to a better quality of life in people with VI. Sports activities had positive relationships in all domains of quality of life in individuals with DV.
Di Cagno et al. (2013)	Cross-sectional	17 Torball players (36 ± 3.46 years) 13 sedentary subjects (34.8 ± 2.53 years)	Sedentary and active men	Torball	Psychological wellbeing Sleep quality Social participation	Participation Scale (PS) PWBS Symptom Checklist 90 R (SCL – 90 – R)	The psychological well-being, a low level of symptoms of psychological disorders and a high social participation of Torball players suggested that PWBS could achieve psychological well-being and improve their social skills through the practice of Torball.

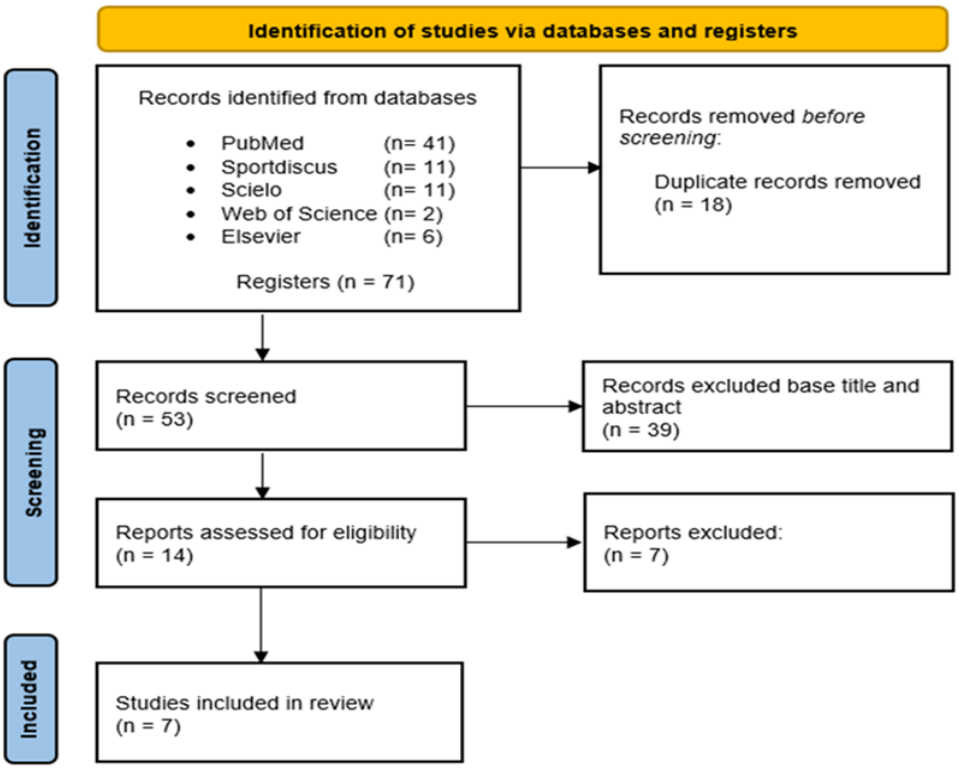
Note. VI = Visual impairment; SF = Short form; PWB = Psychological wellbeing; POMS = Profile of Mood States; WHOQOL-Bref = World Health Organization Quality of Life questionnaire short version; SCL – 90 – R = Symptom Checklist 90 R

Results

In a first analysis, 71 documents were identified in the aforementioned databases. After eliminating duplicates, 53 documents were selected for initial review by reading titles and/or abstracts, with the purpose of finding information relevant to

the purpose of the study. Of these, 39 articles were excluded due to not meeting the inclusion criteria (e.g., other than visual impairment, age above 40 years), leaving a total of 14 documents for exhaustive reading. After detailed analysis, seven of these documents were excluded. Finally, seven articles met the inclusion criteria established for this research and were submitted to appraisal and analysis (Figure 1).

Figure 1
Flowchart of Article Selection



The analysis of the different studies gave results according to the variable of interest. First, in relation to the Quality of life variable, this was evaluated in five of the seven studies reviewed through the SF-12, SF-36 and World Health Organization Quality of Life questionnaire short version (WHOQOL-Bref) questionnaires. Along with this, the psychological well-being variable was found in two of the seven studies through the Psychological Well-Being Scale (PWBS) scale (Table 3). When consulting about the aforementioned variables and their joint research, we realize that only one article (e.g., Mirandola et al., 2019) worked on them in this way. Similarly, another article (e.g., Vigário et al., 2019) of the seven analyzed, investigated QoL, but linked to the mood variable. After completing the review according to the variables independently and in pairs, we found that only one study of the seven reviewed investigated three variables together. These variables were psychological well-being, sleep quality, and social participation (Table 3).

Table 3
Summary of Variables Considered With Respective Instrument of Measurement

Study/Variable	Psychological Wellbeing	Quality of Life	Sleep Quality	Social Participation	Mental Health	Mood
Ilhan et al. (2021)		SF-36				
Vigário et al. (2019)		SF-36				POMS/PDI
Kohda et al. (2019)					K6 Scale	
Mirandola et al. (2019)	PWBS Scale	SF-12				
Roztorhui et al. (2018)		SF-36				
Guerra et al. (2018)		WHOQOL-Bref				
Di Cagno et al. (2013)	PWBS Scale		SCL-90-R	PS Scale		

Note. PWBS = Psychological Well-Being Scale; SF = Short Form Health Survey; WHOQOL-Bref = Bref: World Health Organization Quality of Life questionnaire short version; SCL-90-R = Symptom Checklist-90-R; PS = Participation Scale; POMS/PDI = Profile of Mood States.

All the studies analyzed agreed that there is a relationship between sports practice, psychological well-being, and the perception of quality of life. Moreover, when considering the different instruments used (PWBS, SF12, SF36, WHOQOL-Bref, among others). On the other hand, in four studies (Ilhan et al., 2021; Guerra et al., 2018; Di Cagno et al., 2013; Mirandola et al., 2019), two ways of analyzing the variables of well-being and quality of life were distinguished. life, first perceived by people with visual disabilities who participated in sports and then by subjects with DV who were sedentary. The four studies (Ilhan et al., 2021; Guerra et al., 2018; Di Cagno et al., 2013; Mirandola et al., 2019) coincide, resulting in subjects with visual impairments presenting better indicators of well-being and QoL compared to subjects with visual impairments and sedentary behaviors (Table 2).

Continuing with the results obtained by the analysis, we found that, in three of the seven studies reviewed (Guerra et al., 2018; Vigário et al., 2019; Kohda et al., 2019), only one group of people with visual impairments, practiced only one sport. With this, one of the studies (Kohda et al., 2019), a poor percentage of mental health was found in athletes, due to stressors strictly related to competition and family support. However, in the other two studies (Guerra et al., 2018; Vigário et al., 2019) it was found that blind soccer and goalball practitioners presented a positive profile in moods, a low risk of depressive disorder and a positive perception of quality of life. Thus, the three studies that only evaluated the group of people with visual impairments agreed that there seems to be a closeness relation between the nature of the collective sports practice with mood states, and the domains of quality of life (Table 2).

After analyzing a change in variable and delving into the literature review across studies, with a focus on participant gender, we observed that among the seven studies examined (Mirandola et al., 2019; Roztorhui et al., 2018; Vigário et al., 2019; Kohda et al., 2019), four of them explicitly differentiate based on sex. One study indicates, interestingly, a significantly higher prevalence of low mental health among women compared to men, attributed to heightened stressors related to competition and perceived lack of familial social support (Kohda et al., 2019). However, the remainder of the study does not explicitly make comparisons or highlight differences in outcomes between females and males (Table 2). Concerning the comparison among subjects B1, B2, and B3, the reviewed studies have revealed that the QoL perception among individuals with visual impairments is contingent upon the severity of their vision loss. More specifically, the QoL perception of those with visual impairments is lower in B1 when compared to B2 and B3 (Ilhan et al., 2021; Roztorhui et al., 2018).

Upon reviewing the variables based on individual or collective sports, it became apparent that only three out of the seven studies distinguished between these categories when discussing the quality of life variable. Consequently, they consolidated the results across sports without delineating characteristics specific to their practitioners. On the other hand, in one of the seven studies reviewed (Guerra et al., 2018), which focused on practitioners of team sports such as goalball versus football practitioners for the blind, it was discovered that there are no major differences between the perception of QoL among participants. Expanding on the sport-related variables, one of the seven studies examined (Roztorhui et al., 2018) investigated blind football alongside other individual sports within a sports program. This program measured the QoL before and after participants engaged in sports learning, enabling an assessment of the program's impact on the perception of QoL among individuals with visual impairments. These findings suggest that sports participation may correlate with an enhanced perception of QoL among adult participants with visual impairments.

Lasltly, upon analyzing the articles based on their research design and how variables were approached, we observed that one study adopted a longitudinal approach (Roztorhui et al., 2018), while the others used a cross-sectional design (Ilhan et al., 2021; Guerra et al., 2018; Di Cagno et al., 2013; Mirandola et al., 2019; Vigário et al., 2019; Kohda et al., 2019). This variation complicates the determination of a causal relationship between sports participation and the perceived enhancement of QoL or well-being. Furthermore, among the six cross-sectional studies, four (Ilhan et al., 2021; Guerra et al., 2018; Di Cagno et al., 2013; Mirandola et al., 2019) compared their findings with those of a sedentary control group (Table 2).

Discussion

The purpose of this systematic review was to analyze the scientific published evidence of the last ten years in relation to the effects of team-sports practice on the well-being and quality of life of people with visual impairments. The analysis of the different studies gave results according to the variable of interest. First, in relation to the Quality of life variable, this was evaluated in five of the seven studies reviewed through the SF-12, SF-36 and World Health Organization Quality of Life questionnaire short version (WHOQOL-Bref) questionnaires. Along with this, the psychological well-being variable was found in two of the seven studies through the Psychological Well-Being Scale (PWBS) scale (Table 3). When consulting about the aforementioned variables and their joint research, we realize that only one article (Mirandola et al., 2019) worked on them in this way. Similarly, another article (Vigário et al., 2019) of the seven analyzed, investigated QoL, but linked to the mood variable. After completing the review according to the variables independently and in pairs, we found that only one study of the seven reviewed investigated three variables together. These variables were psychological well-being, sleep quality, and social participation (Table 3).

All the studies analyzed agreed that there is a relationship between sports practice, psychological well-being, and the perception of quality of life. Moreover, when considering the different instruments used (SF36, SF12, PWBS, WHOQOL-Bref, among others). As for the SF-36 questionnaire, it contemplates a score that can range from 0 to 100, where a higher score indicates a better quality of life in that area, when an indicator does not exceed 50 points, it can be considered unsatisfactory (Pavlova et al., 2016). According to the results obtained in the study by Ilhan et al. (2021), athletes who participate in sports activities have a better quality of life in the dimensions of the SF-36 questionnaire, the results being in accordance with the normative values explained in Demiral et al. (2006). In addition, the study by Vigário et al. (2019) obtained values higher than the expected mean in all dimensions (< 50), which is attributed to a beneficial effect on the quality of life of people with visual impairment who practice sports, which is also reflected in the study by Lima et al. (2010).

On the other hand, in four studies (Ilhan et al., 2021; Guerra et al., 2018; Di Cagno et al., 2013; Mirandola et al., 2019), two ways of analyzing the variables of well-being and quality of life were distinguished, first perceived by people with visual disabilities who participated in sports and then by subjects with DV who were sedentary. The four studies (Ilhan et al., 2021; Guerra et al., 2018; Di Cagno et al., 2013; Mirandola et al., 2019) coincide, resulting in subjects with visual impairments presenting better indicators of well-being and QoL compared to subjects with visual impairments and sedentary behaviors (Table 2).

Continuing with the results obtained by the analysis, we found that, in three of the seven studies reviewed (Guerra et al., 2018; Vigário et al., 2019; Kohda et al., 2019), only one group of people with visual impairments, practiced only one sport. With this, one of the studies (Kohda et al., 2019), a poor percentage of mental health was found in athletes, due to stressors strictly related to competition and family support. However, in the other two studies (Guerra et al., 2018; Vigário et al., 2019) it was found that blind soccer and goalball practitioners presented a positive profile in moods, a low risk of depressive disorder and a positive perception of quality of life. Thus, the three studies that only evaluated the group of people with visual impairments agreed that there seems to be a closeness relation between the nature of the collective sports practice with mood states, and the domains of quality of life (Table 2).

After analyzing a change in variable and delving into the literature review across studies, with a focus on participant gender, we observed that among the seven studies examined (Mirandola et al., 2019; Roztorhui et al., 2018; Vigário et al., 2019; Kohda et al., 2019), four of them explicitly differentiate based on sex. One study indicates, interestingly, a significantly higher prevalence of low mental health among women compared to men, attributed to heightened stressors related to competition and perceived lack of familial social support (Kohda et al., 2019). However, the remainder of the study does not explicitly make comparisons or highlight differences in outcomes between females and males (Table 2). Concerning the comparison among subjects B1, B2, and B3, the reviewed studies have revealed that the QoL perception among individuals with visual impairments is contingent upon the severity of their vision loss. More specifically, the QoL perception of those with visual impairments is lower in B1 when compared to B2 and B3 (Ilhan et al., 2021; Roztorhui et al., 2018).

According to the above, it is possible to explain that visual impairment has an effect on physical functions, because a large percentage of information is obtained through vision, using visual data in movement skills (Logan et al., 2010), such as standing and walking (Hallemans et al., 2010; Turano et al., 1998). Therefore, it has been identified that visual impairment is a significant factor in the loss of physical performance (Leat & Lovie-Kitchin, 2008; Chadha & Subramanian, 2011) and the degree of visual field is a criterion for planning mobility rehabilitation programs (Lovie-Kitchin et al., 2010), therefore, this explains the benefits of sports activities in a better perception of the quality of life of people with visual impairment.

Upon reviewing the variables based on individual or collective sports, it became apparent that only three out of the seven studies distinguished between these categories when discussing the quality of life variable. Consequently, they consolidated the results across sports without delineating characteristics specific to their practitioners. On the other hand, in one of the seven studies reviewed (Guerra et al., 2018), which focused on practitioners of team sports such as goalball versus football practitioners for the blind, it was discovered that there are no major differences between the perception of QoL among participants. Expanding on the sport-related variables, one of the seven studies examined (Roztorhui et al., 2018) investigated blind football alongside other individual sports within a sports program. This program measured the QoLbefore and after participants engaged in sports learning, enabling an assessment of the program's impact on the perception of QoL among individuals with visual impairments. These findings suggest that sports participation may correlate with an enhanced perception of QoL among adult participants with visual impairments.

Lasltly, upon analyzing the articles based on their research design and how variables were approached, we observed that one study adopted a longitudinal approach (Roztorhui et al., 2018), while the others used a cross-sectional design (Ilhan et al., 2021; Guerra et al., 2018; Di Cagno et al., 2013; Mirandola et al., 2019; Vigário et al., 2019; Kohda et al., 2019). This variation complicates the determination of a causal relationship between sports participation and the perceived enhancement of QoL or well-being. Furthermore, among the six cross-sectional studies, four (Ilhan et al., 2021; Guerra et al., 2018; Di Cagno et al., 2013; Mirandola et al., 2019) compared their findings with those of a sedentary control group (Table 2).

Conclusions

In conclusion, the research reveals that participation in adapted collective sports positively influences the well-being and quality of life of people with visual disabilities. An association is evident between practicing sports, such as torball, Italian baseball, goalball and soccer for the blind, and an improved perception of quality of life. However, the lack of longitudinal studies makes it difficult to establish clear causal relationships between physical activity and well-being in this group. Although the age of onset of visual loss and the type of sport can influence the results, in general, regular physical activity seems to be a determining factor for the psychological well-being and quality of life of people with disabilities. Visual impairment, equating in many aspects to those without visual impairment and surpassing those with sedentary visual impairment. These findings underline the fundamental role of adapted sport as a tool of equity and well-being for people with visual disabilities.

Ethics Committee Statement

Not applicable because the research deals with the synthesis of published studies related to a specific topic.

Conflict of Interest Statement

The authors declare that they have no conflict of interest.

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Authors' Contribution

Conceptualization C.L., K.C., G.L. & F.A.; Methodology C.L., F.S., C.V., K.C.; Formal Analysis F.S., C.V., K.C.; Investigation C.L., F.S., C.V.; Resources C.L., F.S., C.V; Data Curation C.V., F.S., C.L.; Writing – Original Draft C.L., F.S., C.V., K.C., G.L., F.A.; Writing – Review & Editing K.C., G.L., F.A.; Visualization K.C., F.A.; Supervision C.L.; Project Administration C.L., F.S., C.V. All authors have read and agree with the published version of the manuscript.

Data Availability Statement

Data available upon request to the author (cristian.luarte@uss.cl)

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