Quality & Quantity (2024) 58:1665–1684
https://doi.org/10.1007/s11135-023-01716-6

Personal well-being index as a measure of quality of life of diverse groups of people with visual impairment and blindness

Ruwan Jayathilaka[1] · Vandhana Dunuwila[1] · Dishal Attale[2] · Hasara De Seram[2] · Dasun Sudusinghe[2] · Induwara Abeyrathna[2] · Theekshana Suraweera[1] · Samantha Thelijjagoda[2]

Accepted: 4 July 2023 / Published online: 12 July 2023

Abstract
Today, the world adopts various assessment tools and indices to measure quality of life (QoL) of different persons. The Personal Well-being Index (PWI) is a popular and validated tool used by developed countries to assess the QoL of their citizens. The PWI consists of seven major domains that define people's QoL. Thus, the main purpose of this study is to explore the application of PWI in measuring the QoL of the visually impaired and blind (VI and B) persons in Sri Lanka, and to identify how QoL varies with their demographic characteristics. Primary data revealed among 64 VI&B, 34 blind and 30 visually impaired people from Hambanthota, was analysed based on vision level, age, gender, marital status, and the level of education. Results indicated that visually impaired (VI) respondents had a higher PWI value than that of the blind. Accordingly, the age group of 40–59 contributes to a higher PWI value than that of others; while the results signify that the PWI values basically depend on the levels of education the participants received. It is significant that the blind and the partially sighted people are concerned about their future security to a greater extent compared to the other domains in the PWI. Also, QoL was perceived to deteriorate with age. Thus, it is evident that efforts to improve QoL of people with visual disabilities requires priority to secure a fruitful and secure future for them.

Keywords Personal well-being index · Quality of life · Seven domains · Visually impaired and blind

1 Introduction

The World Health Organisation (WHO 2021a) specifies that most people with disabilities reside in low and middle-income countries, which constrain their access to crucial resources whilst enduring discrimination and alienation from daily activities. Burton et al. (2021) reported that the incidence of vision loss in low and middle-income nations is approxi-

Extended author information available on the last page of the article

mately four times higher, and that adults with vision impairment often exhibit low productivity, reduced workforce participation, and elevated levels of anxiety and depression (WHO 2021a). It is worth mentioning that people with Visual Impairment and Blindness (VI and B) in developed countries typically receive support through accessible infrastructure and assistive technologies, whereas Sri Lanka, being a lower-middle-income nation, has limited support for visually impaired individuals. Suraweera and Dunuwila (2019) identified insufficient infrastructure support, inadequate workplace safety, and poor job design as the primary factors that impede the employability of individuals with VI and B in Sri Lanka.

Moreover, even if individuals with disabilities possess the necessary qualifications for a job, they often face discrimination during the recruitment process solely based on their disability. The private sector also lacks legal provisions for employment opportunities for people with disabilities, as noted by OHCHR (2017). Only a small number of individuals with disabilities, including those with VI and B work in the private sector, mostly due to corporate social responsibility measures. This indicates that persons with VI and B in Sri Lanka face significant challenges compared to the others. Therefore, investigating the Quality of Life (QoL) of these communities would be of particular importance.

The concept of QoL is multidimensional and controversial and is frequently studied in various fields such as medicine, social sciences, and economics, as demonstrated by several authors (Bowling and Gabriel 2004; Schalock et al. 2016; Van Hecke et al. 2018). The study of QoL has been ongoing since the 1960s, with its initial use as an objective measure of national welfare, including indicators such as air and water quality, employment rates, income, and population health (Cummins 2005). However, by the mid-1970s, QoL research shifted towards a more subjective and individualistic perspective that focused on self-reported satisfaction measures (Beveridge 1976).

Previous research on QoL in the context of visual disabilities has primarily focused on a medical perspective, which aligns with the medical model of disability that originated in the mid-1800s and considers bodily impairment as the primary cause of disability (Olkin 2001). However, the social model of disability introduced by Oliver (1981) and the International Classification of Functioning, Disability and Health model by the WHO (WHO 2021b) define disability as a synthesis of physical, social, and psychological aspects. This contradiction in perspectives creates a significant challenge in measuring QoL for individuals with disabilities. Despite the widespread use of the concept of QoL in social research and policy development, there is no universally understood definition or characterisation of this construct, which further adds to the complexity of studying QoL of persons with VI and B.

Numerous international organisations, such as the United Nations and the World Bank, have implemented special initiatives to promote the QoL of different communities, including those with disabilities (Muhammed and Abubakar 2019; Siu et al. 2021; Burton et al. 2021). However, in order to improve QoL, it must be measured first (Haraldstad et al. 2019). According to the WHO, QoL is defined as "individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (WHO 1998). Therefore, it is evident that QoL is a subjective concept that may vary significantly among different communities.

The research problem of this study originates as there has been no prior study conducted in the Sri Lankan context that explores the satisfaction and QoL of diverse groups of people with VI and B. Despite being the most common functional disability in the country, there is a significant knowledge gap about this population in Sri Lanka, with most research focusing

on specific aspects of disability such as social, medical, and economic concerns. This study aims to fill this gap by exploring the satisfaction and QoL of a diverse group of individuals with VI and B in Sri Lanka.

The Personal Wellbeing Index (PWI) is a measurement tool that is used to assess the multidimensional wellbeing or quality of life of individuals. It has been tailored specifically for measuring the QoL among people with VI and B in Sri Lanka, in this study. The PWI includes seven domains or dimensions, which are standard of living, achievements in life, community connectedness, close relationships, health, safety, and future security. These domains are considered important aspects of QoL and are used to derive a comprehensive assessment of wellbeing among individuals with VI and B. The multidimensional nature of the PWI allows for a more holistic and comprehensive measurement of QoL, considering various domains of life that can impact the overall wellbeing of individuals with VI and B. Besides, the PWI has been utilised in previous research (Vuletić et al. 2016) to assess the QoL of individuals who are blind and partially sighted.

1.1 Objective

VI and B is a condition that affects the daily lives of individuals in various ways, including their QoL. Understanding the experiences and perspectives of individuals with visual impairment in relation to their QoL is essential for developing effective interventions and support systems. Hence, this research aims to explore the QoL of individuals with VI and B in Sri Lanka using the PWI, to shed light on their needs, and perceptions of their overall well-being. This research study will contribute to the existing literature on the QoL of individuals with VI and B by providing a deeper understanding of their satisfaction on various life domains.

As there are almost one million who are experiencing VI and B in Sri Lanka, this research would increase the consciousness of the society along with the government to provide necessary requirements and attention towards the wellbeing of these citizens. Furthermore, this study would encourage other researchers to carry out supplementary investigations targeting the wellbeing of the people with VI and B. The present study would contribute to the existing knowledge gap regarding the satisfaction levels of diverse groups of people with VI and B including those with varying vision levels, age, gender, marital status and education levels. Finally, this research may also serve as a foundation for future studies and interventions aimed at enhancing the QoL of individuals with VI and B and advocating for their rights and inclusion in society.

The next section of this article will be supported by past literature, with the full paper structured as follows. Section 1 depicts a brief introduction to the paper, the research gap, and the objectives while Sect. 2 introduces literature supporting the problem statement. Section 3 describes data and methods used while Sects. 4 and 5 present results and discussion, and the conclusion with policy implications and recommendations, respectively.

2 Literature review

As stated in the introductory section of the paper, the concept of QoL is multidimensional and controversial (Bowling and Gabriel 2004; Schalock et al. 2016; Van Hecke et al. 2018). Therefore, before moving further, it is crucial to investigate the nature of the QoL construct along with its diverse interpretations. This could be achieved by reviewing the definitions and models of QoL introduced to explain this construct. However, due to space restrictions, the literature review of this paper has been limited to a few influential models of QoL.

Sen (1999) is credited with developing the Capability Approach, which is considered a major contribution to early QoL research. This approach evaluates the functions and capabilities of individuals, with functions defined as "beings and doings" and capabilities as "actual opportunities and freedom". Lindström and Eriksson (1993) proposed a hierarchical approach to measure QoL, which was similar to Sen's Capability Approach. They categorised the determinants of QoL into four groups, namely global, external, interpersonal, and personal factors. Personal factors included physical, psychological, and spiritual aspects, while interpersonal factors encompassed family, close relationships, and interpersonal relationships. External factors were represented by work, standard of living, and housing, while global factors comprised the macro environment, human rights, and politics.

Wilson and Cleary (1995) presented a different perspective on QoL in comparison to Lindström and Eriksson (1993) by highlighting the importance of expectations and experiences in determining QoL. Wilson's model emphasised the health-related aspects of QoL, with a focus on the relationship between functional health, general health perceptions, symptom status, physiological variables, and overall QoL. While Wilson's model did not encompass the broad range of internal and external factors that influence QoL, it provided insights into the health-related components that should be considered while measuring QoL.

The WHO has also made important contributions to the measurement of QoL by creating several QoL assessment tools, including the WHOQOL-100 and WHOQOL-BREF. These tools are designed to measure the subjective aspects of QoL and stress the multidimensional nature of the concept. They emphasise that QoL measurement should consider individuals' perceptions of their physical, psychological, social, and environmental circumstances (The WHOQOL Group 1995). However, the QoL model introduced by Felce and Perry (1995) differs from the WHO's QoL model, as it emphasises the importance of measuring both objective and subjective aspects of an individual's life. According to Felce and Perry (1995), QoL measurement should consider objective indicators of an individual's life, their subjective feelings of well-being, and their personal values and expectations regarding different life domains.

Schalock et al. (2002) QoL model aligns with Felce and Perry (1995) model, emphasising the need for objective and subjective evaluation of QoL. Their model proposes that QoL assessment should be universal, encompassing individual, organisational, and societal levels, and utilising culturally sensitive indicators. Moreover, their approach considers the person as a whole, which is more comprehensive and holistic than the focus on disease and disability in Wilson and Cleary (1995) Health-Related QoL model.

In the literature, it is common to see QoL and "standard of living" used interchangeably to assess people's well-being. However, Graham (2015) explains that these terms are different. Standard of living is an objective evaluation of life that includes indicators such as income, wealth, comfort, and ownership of resources. On the other hand, QoL measures a

person's perceived well-being and satisfaction. Koreleski (2007) also distinguishes between the two terms by stating that being wealthy and owning valuable resources does not guarantee happiness and satisfaction. Therefore, some individuals may have a high standard of living but a poor QoL. The main difference between the two terms is that standard of living is objective, while QoL is subjective. The next section of this paper highlights the literature of a few empirical studies in the QoL domain.

The study conducted by Żemojtel-Piotrowska et al. (2017) on measurement invariance of PWI across 26 countries provided information on the possibilities of cross-cultural research, providing evidence of bias measures among college students based on PWI scores. Over the past few years, QoL has become an important topic among researchers that is specifically known to be based on happiness, usually in international comparisons and at national levels. However, international comparisons require measures that prove to be constant across cultural groups and countries, as reliability of the measurement tool is vital for cross-comparisons.

Thus, Żemojtel-Piotrowska et al. (2017) intended to test a fair measurement invariance. Such a measure is the PWI, which is considered the most popular to assess Subjective Well-being (SWB). In general, the purpose of developing a PWI is to identify the most important predictors of life satisfaction. Life satisfaction is a cognitive component of SWB and a character of universal significance; also, SWB impacts a judgment process in which "comparing situations with ideas" become an appropriate standard ". Therefore, life satisfaction refers to assessments which may be related to various areas of life. The choice of domain name is created by an international team and based on several criteria considered as important for predicting "Overall Life Satisfaction", with each area meaning a broad aspect of life. The paper further indicates that PWI could be used to examine correlations of life satisfaction among different countries given the fact that it is impossible to compare raw data across countries.

In the study conducted by Yousefi et al. (2013) on reliability and validity of the PWI on students with mental retardation in Iran indicates that psychological well-being (PWB) is widely used globally to describe how people deliberate about life. It contains emotional response of people, their satisfaction with the realm of life and overall judgment of QoL. Therefore, PWB includes measures of cognition (satisfaction) and effects (how it affects positively). The cognitive element of PWI can be described in two types: life satisfaction and subjective QoL. Thus, the PWI is an indispensable factor for QoL. The seven areas that the study found to be important to PWI are: Standard of living, health, achievements in life, safety, relationships, community connectedness and future security. In general, these areas are important for understanding an individual's intellectual and physical composition and also to identify components that subsidise to PWI. In this study, researchers gathered a total sample size of 200 mentally retarded students in northern Tehran. From the results of this study, it can be concluded that mentally handicapped students have lower emotional, psychological and behavioural abilities and they generally respond inappropriately to stimulus measures of environmental and social expectations. As a result, the use of effective strategies and the ability of researchers to control interference factors has led to the validity and reliability of the indicator in northern Tehran.

Similarly, Vuletić et al. (2016) conducted a study in Croatia with the main objective of multidimensionally exploring QoL of the blind and partially sighted people. The study included a population of 142 participants with visual disabilities (78 blind and 64 partially

sighted people) while 69 of the population was with congenital visual impairments and 73 of assigned population are acquired. This study provided in detail that the subjective QoL of blind and partially sighted people are in line with the theoretically expected global range (60–80%) of the normative range. As expected, QoL was found to vary with the vision, where people with low vision had a better QoL than that of those who are blind.

The study conducted to develop the PWI of Psychological Equality for Adults and School Children by Tomyn et al. (2011) examines the psychometric equivalence of child and adult in the forms of a PWI. The purpose of this study was to use variability measurement tests to assess the extent to which two adolescent versions of the PWI (PWI-School Children) work equally well and determine whether these parallel forms are comparable. The International Wellness Community was created to address the issue of valid and reliable measurement among SWB teams. The instrument considered by the group is the PWI, which seems to be promising in this regard. According to this study, the PWI covers eight domains which are standard of living, health, achievements in life, relationships, safety, community-connectedness, future security, and religion/spirituality. These eight domains represent the first level of deconstruction of the global issue. These areas have been found to be closely linked to global life satisfaction in Western and non-Western cultures, including Australia, China and Algeria. According to this study, the first target is to examine the equivalence of cross-sectional groups of adult and student PWI editions using multivariate compensatory factor analysis. According to the findings, equivalence implies that the concept of the SWB construct is the same for both adults and adolescents which supports the validity of the quantitative comparisons between PWI-Adults and the two versions of PWI.

In the meantime, Misajon et al. (2016) and Tomyn et al. (2020) have investigated the application of Rasch analysis on the PWI. Misajon et al. (2016) used the PWI on 593 healthy adults living in Australia and Canada where the results showed no difference for country or gender while recommending that religion/spirituality should not be included in the PWI assessment in the Western context. Similarly, Tomyn et al. (2020) applied the Rasch approach to the PWI to estimate invariant comparison in a cross-cultural context among 1,040 adolescents aged 12 to 18 years from Australia and Portugal. Results revealed the measure shows cross-cultural validity indicating the appropriateness of the PWI among different cultures and communities. Table 1 demonstrates the different demographic variables that were used for analysis of the PWI among the literature.

Table 1 Common variables used in the PWI

Variable	Research Papers
Vision Status	Mirandola et al. (2019), Vuletić et al. (2016)
Age	Verdugo et al. (2005), Shu and Zhu (2008), McGillivray et al. (2009), Żemojtel-Piotrowska et al. (2017), Yousefi et al. (2013)
Gender	Mirandola et al. (2019), McGillivray et al. (2009), Shu and Zhu (2008), Żemojtel-Piotrowska et al. (2017), Yousefi et al. (2013)
Education	McCarthy and Shevlin (2017)
Marital Status	Shu and Zhu (2008), McGillivray et al. (2009)

Source: Authors' compilation.

3 Data and methodology

3.1 Data

The research in question is conducted through a quantitative study design, which involves collecting numerical data for analysis. The study sample includes 34 blind individuals and 30 visually impaired individuals, who were selected purposively from the *Hambanthota* district of Sri Lanka. The blind individuals represent 53.13% of the sample population, while the visually impaired individuals represent 46.88%. The *Hambanthota* district being the smallest district in Sri Lanka, represents a sizeable proportion of the total visually impaired and blind population.

The questionnaire designed for the study focussed on exploring the seven domains of the PWI, in relation to the QoL of people with VI and B (Appendix 1). Age, marital status, vision status, gender and education level were mainly considered as the demographic factors for the analysis. Based on studies of (Vuletić et al. 2016) and (Robert (A) Cummins 2013), the questionnaire was developed for interviewing the sample population of persons with VI and (B) Accordingly, the questionnaire consisted of eight questions covering the seven domains. The level of satisfaction of the interviewees were recorded on a five-point Likert Scale where "1" represented extremely dissatisfied, "2" dissatisfied, "3" neutral, "4" satisfied and "5" denoting extremely satisfied. Data collection was carried out in the form of telephone calls and proceeded thorough purposive sampling technique. Details of the respondents were sourced through the Divisional Secretariat of *Hambanthota*. The questionnaire was offered to all participants over a one-to-one interview which was carried out by authors of the study.

As the main purpose of this study is to explore the QoL of individuals with VI and B in Sri Lanka using the PWI, the satisfaction on the seven domains of the PWI were assessed in relation to diverse demographic factors such as vision status, age, gender, marital status and the level of education. The seven domains of the PWI included future security, safety, health, achievements in life, close relationships, community connectedness and standard of living,

3.2 Analytical tool

3.2.1 Arithmetic mean and standard deviation

The analysis was performed using the SPSS statistical software towards proceeding the proposed research objectives. Data were collected using a five-point Likert Scale from "1" to "5" where "1" represented extremely dissatisfied, "2" dissatisfied, "3" neutral, "4" satisfied and "5" denoting extremely satisfied. The results are based on the mean and standard deviation of the data set.

$$mean = \frac{sum\,of\,the\,terms}{number\,of\,terms} \tag{1}$$

Equation 1 given above helps to generate the mean value of the data set which is the total terms of the response divided by the number of periodic responses, whereas Eq. 2 calculates

the standard deviation of the sample data set which denotes how data points differ from the mean.

$$\sigma = \sqrt{\frac{\sum(xi - \mu)^2}{N}} \tag{2}$$

σ = Population standard deviation
N = the size of the population
xi = each value from the population
μ = the population mean

3.2.2 Personal well-being index (PWI)

The PWI consists of seven sub-categories of self-assessed satisfaction across domains including future security, safety, health, achievements in life, close relationships, community connectedness and standard of living. For each domain, the respondents were requested to provide an answer on the Likert scale of 5 points, where "1" indicates complete dissatisfaction and "5" denoting complete satisfaction. The PWI is expressed as the arithmetic mean of the seven domains. For the purpose of creating results that are simply comparable to each other, it is recommended to convert all data to a 0–1 point scale (Vuletić et al. 2016) to ensure a consistent format where "0" represents extremely dissatisfied, "0.25" represents dissatisfied, "0.5" as neutral, "0.75" as satisfied and "1" representing extremely satisfied. The PWI is known to have good psychometric properties, and in terms of structural validity, the seven domains as a whole are the minimum domain group that represents the first level of life reconstruction.

3.2.3 Analytical methods

Measures of frequency were used to analyse the demographic characteristics among sample data set, with the arithmetic mean and standard deviation used for PWI development.

Primary data are used for analysis and hence, reliability in terms of internal consistency needs to be reported. The most common measure of reliability is the Cronbach's alpha (α) value which is used to determine if items of a given construct are compatible. According to the accepted norms, if the reliability coefficient is greater than 0.6 it indicates that there is a considerable amount of consistency among the items. According to Table 2, the Cronbach

Table 2 Internal consistency

Domain	Observation	Cronbach alpha for domain	Cronbach alpha if item deleted
Future security	64	0.73	0.87
Safety	64	0.64	0.79
Health	64	0.61	0.76
Close relationship	64	0.67	0.81
Community connectedness	64	0.71	0.83
Achievement in life	64	0.71	0.89
Standard of living	64	0.68	0.79

Source: Authors' calculations.

Alpha value does not drop below the value of 0.60. The results revealed that the internal consistency of the seven domains were acceptable and can be used for PWI development.

4 Results and analysis

The results and analysis section mainly focusses on how the PWI reflects on the seven domains for people with VI and B. The statistical exploration helps to identify how diverse groups of VI and B portray their satisfaction on each of the domains, in relation to different demographic variables.

Table 3 demonstrates the sociodemographic characteristics of the sample. Majority of the people are blind, while 46.88% of the people are visually impaired. In terms of gender, majority of respondents are males (n=44) with only 20 females. In terms of age groups, 36 people were found to be between 40 and 59 years, while 13 people were found in the 60–80 age group. In terms of marital status, majority of the people were married which accounted for 67.19%, while 31.25% were never married. In terms of the education level, 5 people are reported to have never completed elementary education, while 10.94% reported that they completed their tertiary qualifications. Twenty-one of the people representing the majority have passed their G.C.E. Advanced Level (A/L) examinations.

Table 4 indicates that for the seven domains, the maximum value was found to be 01 which depicts 'extremely satisfied' while the minimum value for Safety, Health, Close Relationships and Community Connectedness domains were found to be 0.25, which represents that respondents are 'dissatisfied' on the above-mentioned domains to some extent. However, when considering the three domains, i.e. future security, achievements in life and standard of living, the minimum value was found to be 0 which indicates that respondents were 'extremely dissatisfied'. The health domain had the highest mean value of 0.83 while the domain of close relationships had the next highest mean of 0.82. The mean values of Safety,

Table 3 Sociodemographic characteristics of people with VI&B (N=64)

Variables		N	%
Vision Status	V. Impaired	30	46.88
	Blind	34	53.13
Gender	Male	44	68.75
	Female	20	31.25
Age	20–39	15	23.44
	40–59	36	56.25
	60–80	13	20.31
Marital Status	Never married	20	31.25
	Married	43	67.19
	Divorced	01	01.56
Education Level	No schooling	05	07.81
	Primary (1–5)	08	12.50
	Secondary (6–10)	14	21.88
	Passed GCE O/L	21	32.81
	Passed GCE A/L	02	03.13
	Tertiary (Degree or above)	07	10.94
	Vocational	06	09.38
	Other	01	01.56

Source: Authors' calculation based on primary data.

Table 4 Arithmetic mean, standard deviation, minimum and maximum for the seven domains of QoL and overall PWI (N = 64)

Domains	Mean	SD	Min	Max
Future Security	0.50	0.32	00	01
Safety	0.73	0.22	0.25	01
Health	0.83	0.19	0.25	01
Close Relationships	0.82	0.18	0.25	01
Community Connectedness	0.76	0.21	0.25	01
Achievements in Life	0.76	0.24	00	01
Standard of Living	0.77	0.23	00	01
PWI	**0.74**	**0.25**	**00**	**01**

Source: Authors' calculation based on primary data.

Community Connectedness, Achievements in Life and Standard of Living ranged between 0.73 and 0.77 with Community Connectedness and Achievements in Life having the same mean of 0.76 indicating a high level of satisfaction in overall. Reputedly, the future security domain had the lowest mean of 0.5 among the seven domains. The highest standard deviation was reported from the domain of future security, while safety, community connectedness, achievements and standard of living reported standard deviation among the range 0.21–0.24. The least standard deviation was reported from the domain close relationships.

A similar study conducted by Vuletić et al. (2016) on the QoL in blind and partially sighted people, reported the highest mean value for the safety domain whereas the least mean value was found for the domain of future security. It is significant from both the studies that blind and partially sighted people are concerned on their future security to a greater extent compared to the other domains in the PWI. These findings reconfirms with those of Vuletić et al. (2016) which emphasise on psychological rehabilitation. This indicates that a special mechanism should be effectuated into action to secure the future of this vulnerable group. Hence, social inclusion, prevent such people from being marginalised can be potential concerns for policy makers.

Table 5 depicts the basic statistics (arithmetic mean and standard deviation) for the seven domains according to the vision status namely VI and B. Majority of the VI respondents were satisfied with their close relationships ($M_{Visually\ Impaired} = 0.82$, $SD_{Visually\ Impaired} = 0.17$) and their health status ($M_{Visually\ Impaired} = 0.82$, $SD_{Visually\ Impaired} = 0.18$) while majority of the blind respondents were mostly satisfied with their health ($M_{Blind} = 0.83$; $SD_{Blind} = 0.20$). It is noteworthy that both the VI and the blind respondents have reported similar mean values for the domain close relationships. However, the minority of VI and B respondents were satisfied with the secureness of their future ($M_{Visually\ Impaired} = 0.54$, $SD_{Visually\ Impaired} = 0.32$; $M_{Blind} = 0.47$, $SD_{Blind} = 0.31$). Among the VI and B, the blind seems to have less future security compared to those with VI.

The values of the VI were reported to be higher in all the domains than that of the blind people except for the health domain (Table 5). The study conducted by Vuletić et al. (2016) also presents similar results to this findings of this study, where the visually impaired or the partially sighted reported the highest mean value for the domain of close relationships. However, it is evident in Vuletić et al. (2016) study that the blind have reported the highest mean for safety domain whereas in this context the highest mean among the blind was reported for the health domain. This may indicate that the blind individuals in the sample had better health and were satisfied with their health compared to their everyday safety. Further, both the studies reported the lowest mean value for the domain of future security with the blind individuals having a much lower mean value compared to the partially sighted. This indicates that visual disabilities impose a severe threat to one's future and those having

Table 5 Arithmetic mean and standard deviation of people with VI&B for seven domains according to vision status and PWI (N = 64)

Domains	V. Impaired (N = 30)		Blind (N = 34)	
	Mean	SD	Mean	SD
Future Security	0.54	0.32	0.47	0.31
Safety	0.74	0.23	0.73	0.23
Health	0.82	0.18	0.83	0.20
Close Relationships	0.82	0.17	0.82	0.19
Community Connectedness	0.78	0.20	0.75	0.23
Achievements in Life	0.80	0.21	0.74	0.25
Standard of Living	0.80	0.20	0.75	0.25
PWI	**0.76**	**0.24**	**0.73**	**0.26**

Source: Authors' calculation based on primary data.

Table 6 Arithmetic mean and standard deviation of people with VI&B for seven domains according to gender (N = 64)

Domains	Male (N = 44)		Female (N = 20)	
	Mean	SD	Mean	SD
Future Security	0.51	0.33	0.50	0.30
Safety	0.76	0.23	0.69	0.23
Health	0.84	0.17	0.80	0.24
Close Relationships	0.84	0.15	0.78	0.23
Community Connectedness	0.74	0.22	0.81	0.20
Achievements in Life	0.74	0.23	0.81	0.25
Standard of Living	0.79	0.22	0.74	0.24
PWI	**0.74**	**0.25**	**0.73**	**0.26**

Source: Authors' calculation based on primary data.

major impairments leading to blindness are very highly insecure compared to those with mild and moderate impairments.

In accordance with Table 6, most of the males were satisfied with their health status (M_{Male} = 0.84, SD_{Male} = 0.17) and their close relationships (M_{Male} =0.84, SD_{Male} = 0.15) while majority of the females were satisfied with their community connectedness (M_{Female} = 0.81, SD_{Female} =0.20) and achievements in life (M_{Female} = 0.81, SD_{Female} = 0.25). Furthermore, the minority of males and females were satisfied with secureness of their future (M_{Male} = 0.51, SD_{Male} = 0.33; M_{Female} = 0.50, SD_{Female} =0.30). Repeatedly, future security ranks "dissatisfied" among other domains.

Further, the values of satisfaction levels of males were higher than those of females for all domains except, community connectedness and achievements in life (Table 6). These findings are very much similar to those confirmed by Lee et al. (2020) where male participants generally reported a better QoL than that of female participants. These results indicate that gender inequality regarding QoL exists, and that gender may play a critical role in this regard. Hence, it can be emphasised that the future security domain among females with VI&B need attention, when addressing PWI of persons with VI and B in Sri Lanka.

According to Table 7, considering the age groups of 20–39, most of the respondents were satisfied with their close relationships (M_{20-39} = 0.85; SD_{20-39} = 0.13), while majority of the respondents in age groups of 40–59 were satisfied with their health status (M_{40-59} =0.86; SD_{40-59} =0.15). A high number of respondents who were in age groups of 60–80 were mostly satisfied with achievements in their lives (M_{60-80} = 0.85; SD_{60-80} = 0.16). The minority of all age groups among the respondents were satisfied with the domain secureness

Table 7 Arithmetic mean and standard deviation of people with VI&B for seven domains according to age (N = 64)

Domains	Age 20–39 (N = 15)		Age 40–59 (N = 36)		Age 60–80 (N = 13)	
	Mean	SD	Mean	SD	Mean	SD
Future Security	0.57	0.31	0.51	0.28	0.40	0.35
Safety	0.67	0.26	0.78	0.23	0.69	0.15
Health	0.80	0.17	0.86	0.15	0.75	0.29
Close Relationships	0.85	0.13	0.81	0.20	0.83	0.16
Community Connectedness	0.65	0.21	0.79	0.24	0.81	0.23
Achievements in Life	0.72	0.21	0.76	0.31	0.85	0.16
Standard of Living	0.70	0.24	0.79	0.23	0.81	0.21
PWI	**0.71**	**0.23**	**0.76**	**0.25**	**0.73**	**0.27**

Source: Authors' calculation based on primary data

Table 8 Arithmetic mean and standard deviation of people with VI&B for seven domains according to marital status (N = 64)

Domains	Never married (N = 20)		Married (N = 43)		Divorced (N = 01)	
	Mean	SD	Mean	SD	Mean	SD
Future Security	0.42	0.30	0.56	0.32	0.25	0.20
Safety	0.69	0.21	0.76	0.24	0.25	0.20
Health	0.83	0.14	0.83	0.21	0.75	0.20
Close Relationships	0.83	0.16	0.81	0.19	0.50	0.20
Community Connectedness	0.67	0.27	0.80	0.19	0.75	0.20
Achievements in Life	0.73	0.28	0.78	0.21	0.50	0.20
Standard of Living	0.76	0.24	0.78	0.22	0.50	0.20
PWI	**0.70**	**0.27**	**0.76**	**0.24**	**0.50**	**0.20**

Source: Authors' calculation based on primary data.

of their future with the 60–80 category having the lowest mean. ($M_{20-39} = 0.57$, $SD_{20-39} = 0.31$; $M_{40-59} = 0.51$, $SD_{40-59} = 0.28$; $M_{60-80} = 0.40$, $SD_{60-80} = 0.35$). However, the values in age group 20–39 were higher than those of other age groups (Table 7). Further, it was observed that the people with VI and B in the age groups of 60–80 had better standard of living and community connectedness compared to those of other age groups.

A study conducted by Netuveli et al. (2006) on Quality of life at older ages revealed evidence from the English longitudinal study of aging which indicates that aging is perceived to decrease QoL. In this study, QoL was measured by CASP-19, a 19 item Likert scale index, where the highest score was reported for the age category of 50–64 with age groups 65–74 and 75 + were having much lower mean values. However, these results are in contrast with the findings of this study where the age group of 20–39 reported the lowest satisfaction levels compared to those of other two age categories of 40–59 and 60–80. As QoL is seen to deteriorate with age, efforts to improve QoL in older people with visual disabilities should be addressed at the national level.

In accordance with results analysed, Table 8 depicts that the majority of the unmarried respondents were mostly satisfied with their health status ($M_{Never\ married} = 0.83$, $SD_{Never\ married} = 0.14$) and the close relationships that they have ($M_{Never\ married} = 0.83$, $SD_{Never\ married} = 0.16$).

Married people were mostly satisfied with their health status ($M_{Married} = 0.83$; $SD_{Married} = 0.21$) while the minority of respondents were satisfied regarding secureness of their future ($M_{Never\ married} = 0.42$, $SD_{Never\ married} = 0.30$; $M_{Married} = 0.56$, $SD_{Married} = 0.32$). Nevertheless, the values of the married respondents are higher than those of the unmarried. However, those who were divorced reported very low satisfaction levels in each domain except for health and community connectedness (Table 8).

Similar findings were presented by Lee et al. (2020) concerning marital status, where being married was significantly and positively associated with QoL among female participants. This could be attributed to the fact that being married indicates financial security and better overall socioeconomic status in females, which in turn, leads to higher QoL. However, for male participants, higher QoL was not significantly associated with family relationships such as marital status or living arrangements.

Table 9 indicates that majority of respondents who did not attend school were satisfied with their health status ($M_{No\ schooling} = 0.80$; $SD_{No\ schooling} = 0.11$) while the respondents who were educated up to primary grades were also satisfied with their health status ($M_{Primary} = 0.84$, $SD_{Primary} = 0.19$) and community connectedness ($M_{Primary} = 0.84$, $SD_{Primary} = 0.13$). Majority of the respondents who passed GCE Ordinary Level (O/L) were also satisfied with their health status ($M_{GCE\ O/L} = 0.89$; $SD_{GCE\ O/L} = 0.15$) while majority of those who passed GCE A/L were satisfied with achievements in their lives ($M_{GCE\ A/L} = 1.00$; $SD_{GCE\ A/L} = 0.00$). Relevantly, a high proportion of respondents who had tertiary education were

Table 9 Arithmetic mean and standard deviation of people with VI&B for seven domains according to educational level (N=64)

Education Level		Future Security	Safety	Health	Close Relationships	Community Connectedness	Achievements in Life	Standard of Living	PWI
No Schooling (N=05)	M	0.65	0.70	0.80	0.70	0.75	0.55	0.70	**0.65**
	SD	0.38	0.33	0.11	0.21	0.18	0.41	0.33	**0.28**
Primary (N=08)	M	0.34	0.69	0.84	0.81	0.84	0.75	0.78	**0.72**
	SD	0.33	0.29	0.19	0.18	0.13	0.23	0.16	**0.27**
Secondary (N=14)	M	0.45	0.71	0.77	0.86	0.75	0.82	0.82	**0.74**
	SD	0.36	0.19	0.27	0.13	0.26	0.18	0.18	**0.26**
Passed GCE O/L (N=21)	M	0.55	0.81	0.89	0.83	0.76	0.77	0.80	**0.77**
	SD	0.30	0.21	0.15	0.18	0.19	0.22	0.23	**0.23**
Passed GCE A/L (N=02)	M	0.50	0.50	0.88	0.75	0.88	1.00	0.88	**0.77**
	SD	0.35	0.35	0.18	0.00	0.18	0.00	0.18	**0.25**
Tertiary (N=07)	M	0.71	0.75	0.82	0.75	0.75	0.86	0.93	**0.80**
	SD	0.17	0.20	0.19	0.29	0.32	0.20	0.12	**0.22**
Vocational (N=06)	M	0.46	0.75	0.75	0.88	0.71	0.67	0.54	**0.68**
	SD	0.25	0.16	0.22	0.14	0.19	0.26	0.29	**0.24**
Other (N=01)	M	0.00	0.75	0.75	1.00	0.75	0.75	0.75	**0.68**
	SD	0.31	0.31	0.31	0.31	0.31	0.31	0.31	**0.31**

Source: Authors' calculation based on the primary data.

mostly satisfied with their standard of living ($M_{Tertiary} = 0.93$; $SD_{Tertiary} = 0.12$). Correspondingly, the respondents who had secondary, vocational, and other education were mostly satisfied with their close relationships ($M_{Secondary} = 0.86$, $SD_{Secondary} = 0.13$; $M_{Vocational} = 0.88$, $SD_{Vocational} = 0.14$; $M_{Other} = 1.00$, $SD_{Other} = 0.31$). Further it is evident from the results that, QoL of people with VI and B seem to improve with the increasing levels of education which is further signified by Edgerton et al. (2012) in their study, which focussed on the impact of educational attainment on QoL. The reviewed research revealed that the effects of educational attainment on QoL was often multidimensional and reciprocal.

A remarkable finding of this study is that, regardless of the overall PWI for each level of education, mean values and standard deviations depict a noticeable range for the seven domains. In other words, it can be observed that the range indicates "dissatisfied" to "extremely satisfied". For e.g., mean values for those with vocational education show a range of 0.46–0.88 where they are dissatisfied with future security and extremely satisfied with close relationships. Similarly, those with secondary education also shows a mean value range of 0.45–0.86 on the same domains.

The results indicate that the overall PWI values vary for sociodemographic characteristics of people with VI and B. Considering the vision status, the VI respondents have a higher PWI value than that of blinds ($PWI_{Visually\ impaired} = 0.76 > PWI_{Blind} = 0.73$) while male respondents having a higher value than that of females ($PWI_{Male} = 0.74 > PWI_{Female} = 0.73$). Accordingly, the ages of 40–59 contributes to a higher PWI value than that of other ages ($PWI_{40-59} = 0.76 > PWI_{60-80} = 0.73 > PWI_{20-39} = 0.71$). Furthermore, the married population has a higher PWI value than those of Never married and divorced population ($PWI_{Married} = 0.76 > PWI_{Never\ married} = 0.70 > PWI_{Divorced} = 0.50$). Considering the education levels of the sample population, the results signify that the PWI values basically depend on the levels of education the respondents received ($PWI_{No\ schooling} = 0.65 < PWI_{Vocational} = 0.68 \leq PWI_{Other} = 0.68 < PWI_{Primary} = 0.72 < PWI_{Secondary} = 0.74 < PWI_{GCE\ O/L} = 0.77 \leq PWI_{GCE\ A/L} = 0.77 < PWI_{Tertiary} = 0.80$). In accordance with Table 9, it shows that the level of education of the people directly affects their QoL and this finding also applies to the QoL of people with VI and B.

5 Conclusion

PWI questionnaire consists of seven sub-categories of self-assessed satisfaction across seven domains which are future security, safety, health, achievement in life, close relationship, community connectedness and standard of living. Results show that in overall, people with VI and B show a dissatisfaction in terms of future security, regardless of gender, marital status and age. Also, people with VI showed better QoL than Blind as the PWI values of the VI were higher than those of blind people. Males reported better QoL than females, while the age group of 20–39 had a higher QoL than those of other age groups. Nevertheless, mean and PWI values of the married respondents are higher than those of the unmarried and divorced people. Table 8 depicts how the levels of education relates to the QoL of the people with VI and B in Sri Lanka. Considering the education levels of the sample population, the results signify that the PWI values basically depend on the levels of education the VI and B respondents received. This study shows that the level of education could have a positive impact on the QoL of people with VI and B as QoL was seen to improve with

education. However, as discussed under results and analysis section, the level of education on PWI cannot be generalised with regard to these seven domains in the Sri Lankan context. It suggests that demographics may have an influence on the expectations of people with VI and B to a greater extent.

Carrying out this study in Sri Lankan context helps to understand how people with VI and B perceive QoL and the way they feel about being inclusive in the society. Also, this study provides a wide focus on the QoL among diverse groups of people with VI and B. The PWI helps to identify the general perception of people with VI and B on their QoL, based on different demographic characteristics. In this sense, social inclusion concerning people with VI and B can be considered with high importance where policy makers need to pay attention continuously.

Measuring QoL in people with VI and B is a generally a debatable topic that tends to remain unaddressed or conclude with no actions taken to mitigate challenges related with it. Many developed countries seem to measure the QoL of their citizens, including the differently abled population. However, in developing countries like Sri Lanka, there is no acceptable standard to measure QoL of people, including those with VI and B. Thus, the PWI was applied to the Sri Lankan context by conducting this research study.

5.1 Policy implications

The PWI was observed to be a reasonably good indicator of the perception of people with VI and B, on their well-being and thus, their quality of life. The effect on seven domains of people with VI and B can be generalised in certain instances, (e.g., future security) but as mentioned previously, exceptions can be noted for certain domains (e.g., level of education). In this scenario developing a PWI based on local criteria needs expanding the scope of this study to other regions of Sri Lanka. Apart from this, other significant domains (e.g., spirituality/religion) as well as demographics (such as occupation, location of residence etc.,) need to be incorporated in future studies that would result in a more meaningful and reliable measure of PWI. In addition, measures and effects of cognition and emotional response (Yousefi et al. 2013 and type and duration of impairment and participation in psychological rehabilitation Vuletić et al. (2016) explained under Sect. 2 provide guidelines when devising suitable interventions.

The latter indicates that within diverse groups of VI and B, policy makers need to be aware of how different levels of vision (low, partially sighted, blind) affect the QoL for which fine-tuning policies are likely to be focussed and effective. This outcome is a useful eye-opener for the policy makers towards developing and fine-tuning policies for this vulnerable community group. In a way, the policy makers have the responsibility to uplift the quality of life of people with disabilities in general. In this respect, findings of Mirandola et al. (2019) confirming that sports or recreational activities, and even entertainment cultivate team spirit and enhance QoL among the people with VI and B, is worth consideration. Accordingly, policy makers can design different recreational measures that suit diverse groups of people with visual disabilities to improve their QoL.

Another significant finding of this study is that the blind and the partially sighted people are concerned about their future security to a greater extent compared to the other domains in the PWI. This is observed with study results indicating that the particular domain is rated comparatively higher than the other six of the PWI. This indication that, as perceived, visual

disabilities would impose a severe threat to one's future, can be used by policy makers to design and implement strategies to secure the future of this vulnerable group, economically, especially at the old age. Moreover, as QoL is seen to be deteriorating with age, such strategies need to be considered a priority.

Further, based on the findings of the study, it was revealed that gender inequality regarding QoL exists for which actions should be taken. Gender wise, females appear to be dissatisfied in terms of close relationships, achievements in life and standard of living. This issue also needs to be addressed by policy makers through strategy improvements such as implementing motivational programmes for women and social awareness programmes to promote gender equity.

Though the PWI in this study has been developed though data from Sri Lanka, the conceptual understanding along with some of these findings would be equally applicable to the contexts of other countries. This research makes a significant contribution in promoting QoL of people with visual disabilities in particular, and in the field of disability studies in general.

5.2 Recommendations

The results assert that 'future security' is an area that need to be investigated by the policymakers for sustained QoL among persons with VI and B. Thus, it is recommended that continuous research on the QoL of those with VI and B should be conducted in the context of Sri Lanka as it helps to identify their concerns and perspectives. It can be highlighted that research and policy making including review and monitoring need to go hand in hand. Overall, the process of analysing, formulating strategies and policies is likely to be effective, if these adopt a closed loop system approach. In Sri Lanka, many new implementations have failed and never reached the end goal it was originally set for. Thus, the social cost associated with such failures adversely impacting QoL and living standards was also high though these were typically not estimated and gone undetected and unreported. Incorporating qualitative aspects into the study can provide better insights to the root causes of expectations and satisfactions levels of the people with VI and B.

Many developed countries use a number of relevant tools to measure the QoL of their people. A developing country like Sri Lanka need to use an acceptable tool like PWI to measure the QoL of the people for better awareness, effective monitoring of living standards and consistent review of resource allocations on social welfare and vocational activities. This is crucial for measuring QoL of those with VI and B where the number of visually impaired persons in the world is estimated to be 285 million, of whom 39 million blind and people aged 50 and over are 82% all blind (WHO 2021c). The PWI can be used with other tools to minimise rating errors that could occur due to overreliance on a novel tool which tend to mislead policy planning, devising and monitoring of social welfare schemes, resource allocations etc. The PWI generated in local context can be benchmarked with those of regional counterparts to map the status of Sri Lanka in terms of the VI and B condition for a holistic picture. However, for a cross-comparison, PWI is to be developed in a way that is acceptable both locally and regionally.

In addition, as the level of education have a positive impact on the QoL of those with VI and B, efforts should be taken to provide education consistently to those with visual disabilities. It is recommended that education techniques cater to a wide range of people

with VI and B, as noted previously, in Sri Lankan context. Therefore, flexible education and vocation tools and techniques (rather than standard methods, a set curricula) with the purpose of honing skills of the people with VI and B, making them employable, boosting their self-worth and self-confidence are in need of the hour. Collaboration of the VI and B population among business sector, especially among companies which can pave the way for their growth and lucrative opportunities can be workable. Few business firms employ and recognise people with VI and B which is laudable. This way, mutual fit and relationship building can be viable and sustainable for both parties to enhance QoL strategically, rather than a one-off approach.

5.3 Limitations

Some limitations of this paper are as follows. Results and analysis were limited to 64 responses which were collected from the *Hambanthota* district. Collecting data from *Hambanthota* district in Sri Lanka was a sensible choice because it is known to have the highest rate of vision impairment in the country (De Silva et al. 2001). This means that the study's findings will likely represent the larger population of VI and B individuals in Sri Lanka. Additionally, by studying a population with a high prevalence of VI and B, the study can provide valuable insights into the specific needs and experiences of this population, which can inform future policies and interventions to improve their QoL. The COVID-19 status with imposed restrictions on mobility and physical distancing directly affected data collection in reaching the respondents. As such, data collection was carried out over the phone, with each conversation lasting more than 50 min. The sample population being people with VI and B, caused practical issues with the data collection to a certain extent. If the data collection was conducted via face-to-face interviews, with a better response level, reliability of data would have been much higher.

Funding This work was supported by the World Bank, Sri Lanka (AHEAD DOR Grant number 09). The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Declarations

Conflict of interest The authors declare no competing interests.

References

Beveridge, A.A.: The Quality of American Life: Perceptions, Evaluations, and Satisfactions. JSTOR (1976)
Bowling, A., Gabriel, Z.: An Integrational Model of Quality of Life in Older Age. Results from the ESRC/MRC HSRC Quality of Life Survey in Britain. Soc. Indic. Res. **69**(1), 1–36 (2004). https://doi.org/10.1023/B:SOCI.0000032656.01524.07

Burton, M.J., Ramke, J., Marques, A.P., Bourne, R.R.A., Congdon, N., Jones, I., Ah Tong, B.A.M., Arunga, S., Bachani, D., Bascaran, C., Bastawrous, A., Blanchet, K., Braithwaite, T., Buchan, J.C., Cairns, J., Cama, A., Chagunda, M., Chuluunkhuu, C., Cooper, A., Crofts-Lawrence, J., Dean, W.H., Denniston, A.K., Ehrlich, J.R., Emerson, P.M., Evans, J.R., Frick, K.D., Friedman, D.S., Furtado, J.M., Gichangi, M.M., Gichuhi, S., Gilbert, S.S., Gurung, R., Habtamu, E., Holland, P., Jonas, J.B., Keane, P.A., Keay, L., Khanna, R.C., Khaw, P.T., Kuper, H., Kyari, F., Lansingh, V.C., Mactaggart, I., Mafwiri, M.M., Mathenge, W., McCormick, I., Morjaria, P., Mowatt, L., Muirhead, D., Murthy, G.V.S., Mwangi, N., Patel, D.B., Peto, T., Qureshi, B.M., Salomão, S.R., Sarah, V., Shilio, B.R., Solomon, A.W., Swenor, B.K., Taylor, H.R., Wang, N., Webson, A., West, S.K., Wong, T.Y., Wormald, R., Yasmin, S., Yusufu, M., Silva, J.C., Resnikoff, S., Ravilla, T., Gilbert, C.E., Foster, A., Faal, H.B.: The Lancet Global Health Commission on Global Eye Health: Vision beyond 2020. The Lancet Global Health. **9**(4) (2021). e489-e551

Cummins, R.A.: Moving from the quality of life concept to a theory. J. Intellect. Disabil. Res. **49**(10), 699–706 (2005). https://doi.org/10.1111/j.1365-2788.2005.00738.x

Cummins, R.A.: Personal Wellbeing Index – Adult. Deakin University, The Australian Centre on Quality of Life, Deakin University (2013)

De Silva, W., Amarabandu, W., Gunasekara, H.: Disability amongst the elderly in Sri Lanka: research studies series, Number 1. *Institute for Health Policy, Colombo: Department of Census and Statistics, Charachteristics of the disabled Persons, Census of Population and housing*. (2001)

Edgerton, J.D., Roberts, L.W., von Below, S.: Education and quality of life. In: Handbook of Social Indicators and Quality of life Research, pp. 265–296. Springer (2012)

Felce, D., Perry, J.: Quality of life: Its definition and measurement. Res. Dev. Disabil. **16**(1), 51–74 (1995). https://doi.org/10.1016/0891-4222(94)00028-8

Graham, J.: Explaining away differences in Moral Judgment:Comment on Gray and Keeney (2015). Social Psychol. Personality Sci. **6**(8), 869–873 (2015). https://doi.org/10.1177/1948550615592242

Haraldstad, K., Wahl, A., Andenæs, R., Andersen, J.R., Andersen, M.H., Beisland, E., Borge, C.R., Engebretsen, E., Eisemann, M., Halvorsrud, L., Hanssen, T.A., Haugstvedt, A., Haugland, T., Johansen, V.A., Larsen, M.H., Løvereide, L., Løyland, B., Kvarme, L.G., Moons, P., Norekvål, T.M., Ribu, L., Rohde, G.E., Urstad, K.H., Helseth, S.: & the, L. n. A systematic review of quality of life research in medicine and health sciences. *Quality of Life Research*, **28**(10), 2641–2650, (2019). https://doi.org/10.1007/s11136-019-02214-9

Koreleski, D.: Living standard vs life quality. Acta Scientiarum Polonorum. Oeconomia. **6**(3), 65–73 (2007)

Lee, K.H., Xu, H., Wu, B.: Gender differences in quality of life among community-dwelling older adults in low-and middle-income countries: Results from the study on global AGEing and adult health (SAGE). BMC public. health. **20**(1), 114 (2020)

Lindström, B., Eriksson, B.: Quality of life among children in the nordic countries. Qual. Life Res. **2**(1), 23–32 (1993). https://doi.org/10.1007/BF00642886

McCarthy, P., Shevlin, M.: Opportunities and challenges in secondary education for blind/vision-impaired people in the Republic of Ireland. Disabil. Soc. **32**(7), 1007–1026 (2017). https://doi.org/10.1080/09687599.2017.1337564

McGillivray, J.A., Lau, A.L.D., Cummins, R.A., Davey, G.: The utility of the Personal Wellbeing Index Intellectual disability scale in an australian sample. **22**(3), 276–286, (2009). https://doi.org/10.1111/j.1468-3148.2008.00460.x

Mirandola, D., Monaci, M., Miccinesi, G., Vannuzzi, A., Sgambati, E., Manetti, M., Marini, M.: Psychological well-being and quality of life in visually impaired baseball players: An italian national survey. PLoS One. **14**(6), e0218124 (2019). https://doi.org/10.1371/journal.pone.0218124

Misajon, R., Pallant, J., Bliuc, A.-M.: Rasch analysis of the Personal Wellbeing Index. Qual. Life Res. **25**(10), 2565–2569 (2016). https://doi.org/10.1007/s11136-016-1302-x

Muhammed, Z., Abubakar, I.R.: Improving the quality of life of Urban Communities in developing countries. In: Leal Filho, W., Azul, A.M., Brandli, L., Özuyar, P.G., Wall, T. (eds.) Responsible Consumption and Production, pp. 1–14. Springer International Publishing, Cham (2019)

Netuveli, G., Wiggins, R.D., Hildon, Z., Montgomery, S.M., Blane, D.: Quality of life at older ages: Evidence from the English longitudinal study of aging (wave 1). J. Epidemiol. Community Health. **60**(4), 357–363 (2006)

OHCHR: UN Universal Periodic Review - Sri Lanka 2017. Disability Organizations Joint Front (2017)

Oliver, M.: A new model of the social work role in relation to disability. W: The handicapped person: A new perspective for social workers. Red. *J. Campling. London: RADAR. Dostępne na stronie:* (1981). <https://disability-studies.leeds.ac.uk/wp-content/uploads/sites/40/library/Campling-handicppaed.pdf> [od 17.07.2021].

Olkin, R.: What Psychotherapists should know About Disability. Guilford Press (2001)

Schalock, R.L., Verdugo, M.A., Braddock, D.L.: Handbook on Quality of life for Human Service Practitioners. American Association on Mental Retardation Washington, DC (2002)
Schalock, R.L., Verdugo, M.A., Gomez, L.E., Reinders, H.S.: Moving us toward a theory of individual quality of life. Am. J. Intellect. Dev. Disabil. **121**(1), 1–12 (2016)
Sen, A.: Commodities and capabilities. *OUP Catalogue*. (1999)
Shu, X., Zhu, Y.: The quality of life in China. Soc. Indic. Res. **92**(2), 191–225 (2008). https://doi.org/10.1007/s11205-008-9350-4
Siu, K.W.M., Xiao, J.X., Wong, Y.L.: Quality Open Space Experiences for the visually impaired. Appl. Res. Qual. Life. **16**(1), 183–199 (2021). https://doi.org/10.1007/s11482-019-09758-5
Suraweera, T., Dunuwila, V.R.: Challenges of Social Inclusion of the Visually Impaired and Blind Persons in the Sri Lankan Workplace. In *7th Peradeniya International Economics Research Symposium, Kandy, Sri Lanka, October 17–18 2019* (2019)
The WHOQOL Group: The World Health Organization quality of life assessment (WHOQOL): Position paper from the World Health Organization. Soc. Sci. Med. **41**(10), 1403–1409 (1995). https://doi.org/10.1016/0277-9536(95)00112-K
Tomyn, A.J., Tyszkiewicz, F., M. D., Cummins, R.A.: The Personal Wellbeing Index: Psychometric equivalence for adults and School Children. Soc. Indic. Res. **110**(3), 913–924 (2011). https://doi.org/10.1007/s11205-011-9964-9
Tomyn, A.J., Stokes, M.A., Cummins, R.A., Dias, P.C.: A Rasch analysis of the Personal Well-Being Index in School Children. **43**(2), 110–119, (2020). https://doi.org/10.1177/0163278718819219
Van Hecke, N., Claes, C., Vanderplasschen, W., De Maeyer, J., De Witte, N., Vandevelde, S.: Conceptualisation and Measurement of Quality of Life based on Schalock and Verdugo's model: A cross-disciplinary review of the literature. Soc. Indic. Res. **137**(1), 335–351 (2018). https://doi.org/10.1007/s11205-017-1596-2
Verdugo, M.A., Prieto, G., Caballo, C., Peláez, A.: Factorial structure of the quality of Life Questionnaire in a spanish sample of visually disabled Adults1. Eur. J. Psychol. Assess. **21**(1), 44–55 (2005). https://doi.org/10.1027/1015-5759.21.1.44
Vuletić, G., Šarlija, T., Benjak, T.: Quality of life in blind and partially sighted people. J. Appl. Health Sci. **2**(2), 101–112 (2016). https://doi.org/10.24141/1/2/2/3
WHO: Programme on Mental Health: WHOQOL user Manual, vol. 106. Geneva World Health Organization (1998)
WHO: Blindness and vision impairment. (2021a). https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment. Accessed April 22 2023
WHO: Towards a Common Language for Functioning, Disability and Health ICF. (2021b). https://cdn.who.int/media/docs/default-source/classification/icf/icfbeginnersguide.pdf?sfvrsn=eead63d3_4. Accessed October 02 2021
WHO: WHO releases new global estimates on visual impairment (2021c). http://www.emro.who.int/control-and-preventions-of-blindness-and-deafness/announcements/global-estimates-on-visual-impairment.html. Accessed 19 October 2021
Wilson, I.B., Cleary, P.D.: Linking clinical variables with health-related quality of life: A conceptual model of patient outcomes. Jama. **273**(1), 59–65 (1995)
Yousefi, A.A., Mozaffari, K., Sharif, N., Sepasi, M.: Reliability and validity of the ''personal well-being index- cognitive disability'' on mentally retarded students. Iran. J. psychiatry. **8**(2), 68–72 (2013)
Żemojtel-Piotrowska, M., Piotrowski, J.P., Cieciuch, J., Adams, B.G., Osin, E.N., Ardi, R., Bălţătescu, S., Bhomi, A.L., Clinton, A., De Clunie, G.T.: Measurement invariance of Personal Well-being index (PWI-8) across 26 countries. J. Happiness Stud. **18**(6), 1697–1711 (2017)

Authors and Affiliations

Ruwan Jayathilaka[1] · Vandhana Dunuwila[1] · Dishal Attale[2] · Hasara De Seram[2] · Dasun Sudusinghe[2] · Induwara Abeyrathna[2] · Theekshana Suraweera[1] · Samantha Thelijjagoda[2]

✉ Ruwan Jayathilaka
ruwan.j@sliit.lk; ruwanips@gmail.com

Vandhana Dunuwila
vandhana.d@sliit.lk

Dishal Attale
dishal.attale@gmail.com

Hasara De Seram
hasaradeseram@gmail.com

Dasun Sudusinghe
dasun456@gmail.com

Induwara Abeyrathna
pramoinduwara@gmail.com

Theekshana Suraweera
theekshana.s@sliit.lk

Samantha Thelijjagoda
samantha.t@sliit.lk

[1] Department of Information Management, SLIIT Business School, Sri Lanka Institute of Information Technology, New Kandy Road, Malabe, Sri Lanka

[2] SLIIT Business School, Sri Lanka Institute of Information Technology, New Kandy Road, Malabe, Sri Lanka