Research Article

Quality of Life in Differently-Abled Population

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Abstract: Disability is defined as restrictions on a person's maneuverability, physical operations, agility, or endurance that have long-term detrimental effects on a person's capacity to do routine everyday activities

Objectives: This article intends to determine the QOL in differently-abled populations and review the literature related to the quality of life in differently-abled people and highlight the need for improving their lifestyle.

Methodology: According to the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) criteria, this study was carried out. Articles from January 2017 through July 2022 will be covered. For this review, two databases—PubMed and MDPI—were used. The searches started in August 2022. The last five years were designated as the period for the included studies.

Results: Of 14 final papers, various categories were created. With few overlaps, two studies focused on customized healthcare services for older, physically disabled people. Three studies focused on the importance of interventions in exercise. Three studies focused on how improvements in wheelchair control mechanisms affected their lives. Four studies focused on using technology to address their needs and accessibility to better services. One study focused on genetic testing of the disabled. One study focused on the ontology model for the rescue of LTC residents.

Conclusion: QOL of handicaps can be improved by taking multiple steps such as increasing their leisure activities, interventions in exercise, increased access to the disabled and tailored health services according to their individual needs, SSVEP powered wheelchair control mechanism, their genetic testing and adoption of pre-warning methods to cater to their needs.

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INTRODUCTION:

Disability is more than just a health issue or personal trait; it also represents challenges people may encounter in social interactions and physical activities. [1] "disability" refers to impairments, activity constraints, and participation limitations. [2] The term "disability" can be used to refer to a variety of conditions. Still, the global burden of disease (GBD) utilizes the word to describe the loss of health when various health domains are considered. [3] Because of widespread health issues and the distinct societal stigma associated with various forms of impairment, the situation for disabled people and their families is even more challenging. [4] People with disabilities face a variety of obstacles since their involvement is limited, and this has an impact on their lives in terms of poor health outcomes, a lack of participation in society and the economy, rising rates of poverty, and growing dependency. [5]

Worldwide, there are rising trends in non-communicable diseases such as DM, CHD, pulmonary disorders, and cancer. Certain illnesses have a significant impact on disability. [2] 15% of the world's population, according to estimates from the WHO, has a handicap, and 2-4% of them struggle severely to function.

The Pakistan Bureau of Statistics (PBS), which carried out the 2017 census, miscounted the number of disabled individuals in the nation, further complicating matters for the socially ignored group. According to the sixth Population Census, only 0.48 percent of the population is estimated to be disabled, a significant decrease from the 1998 census. People with disabilities made up 2.49 percent of the population according to the 1998 census, which suggests that the challenges faced by disabled individuals have been made worse by this flawed count.

There are numerous studies on the frequency of disabled persons in Pakistan, most of which concentrate on the elderly. Youth is the subject of a relatively small number of studies. Also, there is comparably little research on the quality of life (QOL) of people with physical disabilities. This study aims to assess and present a systematic assessment of the existing literature to comprehend QOL and other related issues among the younger and older population. An overview of all the research on a specific subject that satisfies predetermined qualifying criteria is known as a systematic review. Systematic reviews are a sort of review that gathers secondary data and analyses it using repeatable analytical techniques. So, in this investigation, we'll use a systematic review of already collected data from the Pakistani population.

While assessing QOL, a person may underestimate physical health; instead, more significance may be given to mental illnesses. Major depressive disorder ranks third globally in the list of adaptive responses to emotional events brought on by impairment and is the second most common source of life days spent with a handicap. A wide range of psychological issues, collectively called depression, is defined by a lack of optimism, a persistently down mood, and several associated somatic and psychic symptoms.(6)

The purpose of this article is to find the QOL in the differently-abled population and review the literature related to the quality of life in differently-abled people and highlight the need for improving their lifestyle.

METHODS AND METHOD:

RESEARCH DESIGN:

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analysis) 2020 standards were followed when conducting the review.

Search plan:

. Using the search engines, Pubmed and MDPI, from January 2017 to July 2022, a search method was used to determine the relevancy and breadth of this article. No restrictions regarding study structure, region of reporting, etc., were used to get all the study material. The following search terms were entered into the database: quality of life, differently abled, and disability.

Study selection:

The databases mentioned above were thoroughly searched to choose the articles for this study. Articles only met the inclusion requirements. Only original articles (cross-sectional studies, prospective and retrospective cohort studies, etc.) that focused on the quality of life in differently-abled people were included in our study. The search was limited to only those articles in English, or a translation was available. Commentaries, reviews, editorials, clinical trials, case series, case reports, and those articles that did not fall under the scope of the topic (including mentally disabled people) were also excluded from our study.

Data collection and interpretation:

After conducting their literature searches, the researchers evaluated the titles and abstracts for relevance in light of the inclusion and exclusion criteria. The following information was included on a form for the data collection phase: paper title, authors, journal name, year of publication, sample population, nation, and influence on QOL

RESULTS

A total of 240 articles were screened, of which only 14 met our inclusion criteria. Identified studies were uploaded to Mendeley Library, and duplicates were removed. A total of 231 articles obtained after the removal of duplicates were screened. After the title and abstract screening, 155 pieces were left. After the full-text screening, we were left with 131 details. On applying exclusion criteria, 14 articles met the inclusion criteria.

Out of these 14 studies, eight focused on how technology can improve the quality of life. Three studies focused on how physical activities can improve the QoL. 1 study suggested genetic testing is of significant value. 2 studies suggested independent economic status is also a positive aspect. 1 study suggested comorbidities significantly decreased the quality of life.

Use of technology: a positive aspect:

The concept of technology was used in 8 out of 14 articles (57.1%).

Aly A et al. [7] developed skeletal robots for people having disabilities The effectiveness and efficiency of this method was highly appreciable. Chowdhury S[9] studied the impact of covid 19 on disabled

people. They introduced the idea of photo voice for disabled people. Gannouni et al. [10]used people with severe motor disabilities to bridge the gap b/w disabled and not disabled. They found that by using these brain computers, disabled people could go a long way without any muscular effort.

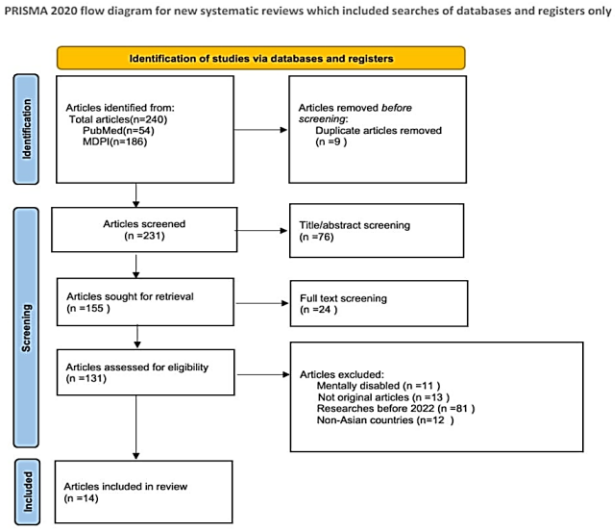
Ngo B et al. [13] published a paper based on EEG based control system for wheelchairs, which helped people reach their preset destination. Park E[14] used the general population with and without disabilities. His study showed that digital technologies were used more effectively by the non-disabled population than by people with disabilities. Digital technologies need to be improved to address the needs of disabled people.

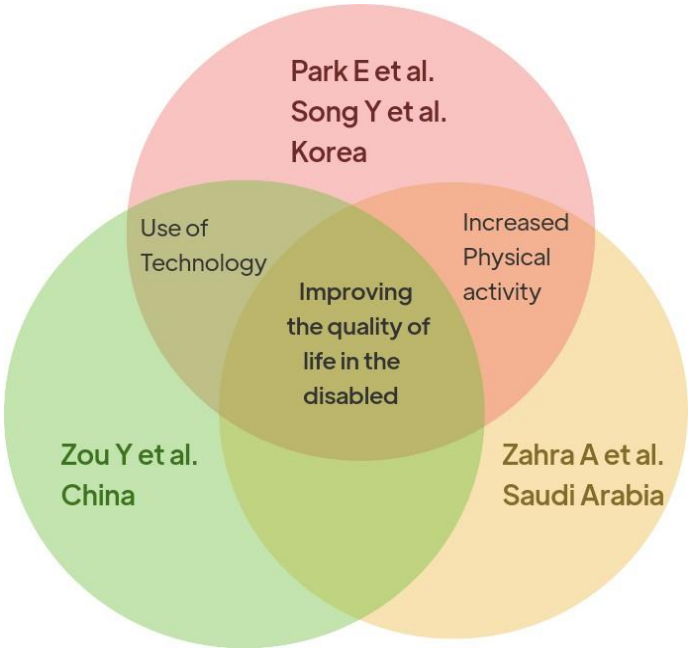
Siribunyaphet N et al. [15] used the general population with disabilities. This study proposed that SSVEP technologies using QR codes reduced visual fatigue among the disabled and helped in better communication among them. Wang R et al. [17] used old aged, disabled people. This study suggested that combined BIM and ontology models could aid firefighters in finding the shortest way to disabled people in fire hazards.

Zou Y et al. [20]used the older population with disabilities. This study suggested that the development of pre-defecation warnings was limited due to individual differences. A practical method to classify the bowel sounds was very accurate in giving a pre-defecation warning.

Physical activities improving the QoL:

The concept of physical activity was used in 3 out of 14 articles(21.42%).





You J et al. [18]used disabled people with cerebral palsy. This study proposed that their decreased aerobic strength was the deciding factor in their dependency. Zahra A et al [19]used the general population with disabilities. Safe leisure activities predicted physical activity among the disabled. Safe

Public health activities improved their lifestyles. Song Y et al. [16]used the middle-aged population. This study suggested that BMI was higher in disabled people and even higher in women who stayed alone and were economically dependent.

Genetic testing: a significant determinant:

7 % of studies focused on this aspect. Bang G et al [8] conducted surveys and interviews with specialists with clinical experience in providing genetic testing to disabled people. The result was that disabled people were much more concerned about their marriage, and the specialist felt that they faced difficulty taking consent for genetic testing in disabled people.

Economic status, a predictor of QoL:

7 % of studies focused on this aspect. Kim T et al. [11] did a cross-sectional study. This study showed severity is inversely related to HRQOL. They concluded that more attention should be given to those who are economically independent but disabled.

Comorbidities: decreasing the QoL:

7% of studies discussed the comorbidities pattern. Liu C et al [12]study on chronic diseases in older people is more significant than 60 years. Different chronic diseases result in another type of disability.

Sr. No.	Author	Year of Publication	Sample Population	Country	Improving the quality of life by
1	Aly A et al	2022	The general population with disabilities	Saudi Arabia	The fuzzy rules augmented position tracking control of the upper Limb exoskeleton robot system
2	Bang G et al	2022	The general population with developmental disorders	Korea	subsidizing the cost of genetic testing and eliminating the stigma surrounding disabilities
3	Chowdhury S et al	2022	The general population with disabilities	Bangladesh and Liberia	ensuring the accessibility of information, services
4	Gannouni S et al	2022	The general population with severe motor disability	Saudi Arabia	The BCI technology
5	Kim T et al	2022	The disabled population on their HRQOL	Korea	Physical activity and health-related factors

6	Liu C et al	2022	The general population with disabilities	China	Customized preventive care and support services
7	Ngo B et al	2022	The general population with disabilities	Vietnam	proposed optimal path trajectory and the semi-automatic control
8	Park E	2022	The general population with and without disabilities	South Korea	Developing the Technologies to address the diverse needs of physically disabled people
9	Siribunyaphat N et al	2022	The general population with disabilities	Thailand	The SSVEP stimulus via QR code pattern
10	Song Y et al	2022	Old age population with and without disabilities	Korea	Customized healthcare services
11	Wang R et al	2022	Old age population with disabilities	Taiwan	A BIM-based ontology model for fire rescue operations
12	You J et al	2022	Old age population with cerebral palsy	Korea	interventions in daily life activities
13	Zahra A et al	2022	The general population with and without physical disabilities	Saudi Arabia	Improving the environmental QoL
14	Zou Y et al	2022	Old age population with disabilities	China	The prewarning of defecation

DISCUSSION:

Gene testing should be accessible and affordable for people with disabilities. Including people with disabilities in the policymaking process is essential so that their concerns can be addressed. Photovoice can be used to better understand their needs and priorities. Brain-computer interfaces (BCIs) allow people with disabilities to use their minds to control a computer, making it easier for them to use technology.

To improve the quality of life for the disabled population, a standardized policy is needed to promote physical activity and reduce the economic burden on healthcare services. Chronic diseases among people with disabilities should be addressed.

Customized healthcare services can help prevent heart disease, incontinence, limb fractures, and vision problems in older people with disabilities.

Technologically advanced wheelchairs, along with training to use them, are essential for people with disabilities to navigate their surroundings. Internet access should be made more readily available to people with disabilities to take advantage of the latest innovations in the digital world. A system could be introduced to control wheelchair movement through visual stimuli based on a range of frequencies.

Customized healthcare services for people aged 60-79 with physical disabilities and varying BMIs can positively impact their lives. A practical model consisting of building information modeling (BIM) and ontology technology can help firefighters locate evacuees more quickly.

In people with cerebral palsy, muscle strength in the lower limb joints is associated with aerobic function. Interventions such as physiotherapy can help improve this association. Encouraging physical activity and discontinuing sedentary lifestyles and unhealthy diets can also produce positive results.

Necessities, such as adult diapers, should be made more accessible for underprivileged people with disabilities to assist with daily living tasks. Clinical measures can also be taken to decrease incontinence, with bowel sounds being a predictive system for excretion.

Strengths and limitations:

A proficient method has been used in conducting this systematic review. Goals are achieved according to published protocol. The strategy of search used is inclusive by nature. The collection of data for this research has brought out front many essential points that can be used as recommendations for more research topics.

Further Studies should be conducted on consideration of external disruptions and input utilization in the scenario of upper extremity exoskeleton robots, opting for comprehensive policies having insight into gender, age, and social factors for the betterment of the quality of life of physically or mentally impaired persons, methods to lessen the financial burden on the health care system, formulating effective wheelchair system making the disabled persons the functioning body of society and better interventions in the physiotherapy field.

CONCLUSION:

Keeping in view various problems faced by the disabled using modern means of technology, their quality of life can be improved by taking multiple steps such as increasing their leisure activities, interventions in exercise, expanding access to the disabled, and tailoring health services according to their individual needs, SSVEP powered wheelchair control mechanism, their genetic testing and adoption of pre-warning methods to cater to their needs.

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