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The Relationship between Perception of Disability, Self-Concept, and Self-Efficacy in Veterans and Individuals with Physical Disabilities

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ABSTRACT

Aims Disability is an inherent part of the human condition, with almost everyone experiencing temporary or permanent injuries at some point in their lives. This research aimed to examine the mediating role of feelings of inferiority in the relationship between the perception of disability, self-concept, and self-efficacy in people with physical disabilities.

Instrument & Methods This cross-sectional study was conducted in Isfahan in 2020 employing a structural equation modeling approach. A group of samples including 280 veterans and individuals with physical disabilities, supported by the Martyr Foundation and the Welfare Organization of Isfahan City, Iran was selected using an available sampling method. Data collection instruments included the Self-Efficacy Belief Scale, Beck's Self-Concept Scale, the Inferiority Scale, and the Disability Impact Scale.

Findings The relationship between disability perception and both self-concept and self-efficacy was positive and significant. Furthermore, the perception of disability indirectly affected self-concept by reducing feelings of inferiority ($p<0.001$).

Conclusion People with physical disabilities tend to have lower self-concept and self-efficacy due to feelings of inferiority. A more positive perception of disability is associated with higher self-concept and self-efficacy and a reduction in feelings of inferiority.

Keywords Disabled Persons; Veterans; Self-Concept; Self-Efficacy

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Introduction

The World Health Organization defines disability as including physical limitations and impairments in social activities and interactions. Disability is not only an issue for the affected individual but also highlights the challenges people may face in societal interactions and physical movements [1]. Generally, individuals with functional limitations or physical defects are often excluded from participating in social activities. These exclusions not only violate basic human rights but may also adversely affect individuals' health [2]. Disabilities can be categorized into four types; Physical, mental, intellectual, and sensory [3]. Physical disability is one of the most common forms of disability worldwide [4].

People with physical disabilities, often referred to as physically disabled, have orthopedic or other physical impairments that make normal movement challenging. These disabilities can be congenital or result from life events such as accidents or illnesses. Physical disabilities significantly limit one or more major life activities. The concept of physical disability is complex, encompassing social, psychological, biological, historical, and political dimensions [5]. Research indicates that living with a physical disability significantly affects mental health and complicates the fulfillment of key social roles, such as being a spouse, parent, and economic provider, thereby weakening a person's social identity. This self-perception aligns with the view that physical disability is a source of social stress [6].

These challenges alter the attitudes of disabled individuals toward themselves. Many people with physical disabilities feel lost, hopeless, and uncertain about their future. They also believe that a bleak future will negatively affect their marriage and emotional well-being, and they fear not obtaining an education, job, or proper societal status. They often feel incapable of working under normal conditions, fail in life, and face rejection. These conditions indicate a pessimistic or non-optimistic attitude [7].

Research has shown that having a physical disability is associated with lower life satisfaction and quality of life, as well as poorer health [8, 9]. The results of studies suggest that disabled individuals encounter various problems and challenges in interpersonal relationships, educational and occupational settings, and emotional-behavioral domains [10]. Overall, physical disability, as a condition that limits one or more major life activities, is associated with a threefold increase in depressive symptoms [11].

One of the consequences of physical disability is a feeling of inferiority. This psychological construct is emphasized in both Erikson's psychological theory and Adler's individual psychology, highlighting the importance of social experiences in human development [12]. In childhood, feelings of inferiority are part of the natural developmental process and can serve as a consistent motivational source. However, they become traumatic when they exceed normal limits [13].

Inferiority is a psychological condition experienced by many, where feelings of inadequacy and worthlessness can arise from a failure to achieve excellence [13]. Physical disability significantly impacts these feelings, often creating negative attitudes rooted in the belief that disabilities are divine punishment, leading individuals to blame themselves for their circumstances. These fears and misunderstandings can result in social isolation and significant emotional distress, diminishing social interest and increasing isolation [14, 15].

Physical disabilities can exacerbate feelings of imperfection and inadequacy, leading to self-loathing and a lack of self-belief. For instance, people with leprosy may expect pity from others and avoid testing their abilities, leading to negative self-evaluation. If feelings of inefficacy persist, they can develop into an inferiority complex. Individuals with disabilities often experience complex inner tension, depression, stress, low motivation, negative self-perception, and constant doubt about overcoming daily challenges [16].

However, some physically disabled individuals use these feelings of inferiority as motivation to overcome their challenges. Research shows that people with physical disabilities often develop flexibility, coping skills, and sometimes extraordinary abilities. They may find creative solutions to problems and lead meaningful, fulfilling lives. Differences within the disabled community can be attributed to various factors, including age and the duration of the disability [17].

Another consequence of physical disability is a negative impact on self-efficacy. Self-efficacy, a personality construct related to principles of lifestyle, social interest, and holism in individual psychology, is derived from Albert Bandura's social-cognitive theory. It involves the belief in one's ability to overcome challenges and predict success in the face of difficulties [18]. Higher self-efficacy corresponds to a greater belief in one's capability to manage situations and overcome obstacles [19].

Individuals with higher self-efficacy tend to act in ways that reduce stress, understand their environment better, and maintain a more optimistic outlook on life, feeling more in control over health, family, and work-related problems [20]. They not only feel capable of handling stressful situations but can also relax and reassure themselves during such times. Conversely, people with low self-efficacy may exhibit symptoms of depression due to making less effort to control depressive thoughts and cope with stress [19].

Research has shown that self-efficacy significantly impacts health. Those who believe they can manage stressful situations cope more positively and are more likely to engage in activities that promote better health [19]. In the context of rehabilitation, self-

efficacy is a critical factor for improving health and quality of life in people with disabilities [21].

People with physical disabilities often face difficulties performing normal social roles and encounter numerous social barriers in daily life [22]. It has been proven that self-efficacy affects the physical condition of disabled individuals [23]. Those with negative attitudes and a perception of incompetence in performing tasks are likely to have lower self-efficacy beliefs, negatively impacting their performance and goal achievement, as well as their coping strategies. Consequently, optimal performance and behavior may be compromised [24].

In addition to self-efficacy, another parameter affected by disability is self-concept. Self-concept is a person's comprehensive view of themselves, encompassing a complex, organized, and dynamic system of learned beliefs, attitudes, and opinions. It is a multidimensional identity structure that includes self-esteem, group identity, and self-efficacy [25]. Self-concept is crucial in the growth and development of each individual, playing a significant role in personal growth. People with a negative self-concept often doubt their abilities, tend to withdraw from social environments, and may become isolated [26].

Self-concept is dynamic and complex. Difficulties and challenges can distort self-concept, leading to social, emotional, and academic problems. Conversely, a positive self-concept is associated with progress, improved peer relationships, and overall happiness. A negative self-concept is linked to depression, eating disorders, and other persistent conflicts or disturbances [27].

Research by Pijl & Frostad [28] shows that people with disabilities are more prone to isolation and rejection, negatively affecting their self-concept and motivation to engage in activities. While there is limited research comparing the self-concept of disabled and non-disabled individuals, some studies indicate that people with disabilities may have a more negative self-concept. This suggests that self-concept may depend more on individual personality than the adverse effects of disability. Consequently, self-concept can vary significantly among people with disabilities.

Research on individuals with physical disabilities shows that they tend to have a significantly more negative self-concept compared to those without disabilities [29]. Factors such as physical fitness, movement skills, and sports competence are critical in determining the self-concept of people with physical disabilities. Additionally, women generally have lower self-concepts and poorer body image compared to men [30].

In sum, physical disability affects various aspects of life, including personal relationships with family, friends, and neighbors, mental state, and level of independence. The way a disabled person perceives their physical condition can directly impact their self-concept and self-esteem, often leading to diminished self-efficacy. Disability tends to induce negative self-concept and self-efficacy by influencing parameters such as feelings of inferiority. People with disabilities typically experience lower self-esteem and a heightened sense of inferiority compared to those without disabilities [31].

Feelings of inferiority are common in everyday life, affecting almost everyone to some degree. According to Adler's psychological principles, factors affecting self-esteem and pride are significant in creating feelings of inferiority, potentially turning individuals into mental patients and highlighting the lower self-concept among those with physical disabilities. Such feelings are more prevalent among disabled individuals, leading to social and psychological consequences. These individuals often criticize themselves more, face social rejection and negative interpersonal experiences, and feel worthless and frustrated. This results in low self-esteem and self-knowledge, especially regarding work-related skills, which can negatively affect the development of self-concept, self-efficacy, and career decision-making [32, 33].

Research by Tam *et al.* [34] indicates that individuals with visible physical disabilities have a lower self-concept. Physical injuries can thus lead to significant social and psychological effects, exacerbating feelings of worthlessness and frustration and limiting personal and professional development.

Despite the significant impact of physical disabilities on various aspects of personal and social life, very few studies have explored the role of feelings of inferiority in this population. The present study aimed to fill this gap by investigating how feelings of inferiority mediate the relationship between the perception of disability, self-concept, and self-efficacy in individuals with physical disabilities. Understanding this mediation effect is crucial, as it can provide deeper insights into the psychological challenges faced by disabled individuals and inform interventions aimed at improving their mental health and quality of life. By examining these interconnections, this research hoped to contribute to the development of more effective support systems and strategies to enhance the well-being and social integration of people with physical disabilities.

Instruments and Methods

This was a cross-sectional study conducted in Isfahan, Iran in 2023. This research was a structural equation correlation study. The current research population included all martyrs (veterans) and physically disabled individuals supported by Martyr Foundation and Welfare Affairs of Isfahan City. A total of 280 people were selected using the available sampling method. The inclusion criteria for the study were having a physical disability and experiencing limitations in social activities due to the disability. The exclusion criteria were having psychological problems or not completing the questionnaire fully.

General Self-Efficacy Scale

This scale was developed by Schwarz and Jerusalem. Initially, it consisted of 20 items with two separate subscales for general self-efficacy and social self-efficacy, which was reduced to a 10-item scale in 1981. It has been translated into 28 languages [35]. The scale has 4 options graded from 1 to 4, with minimum and maximum scores of 10 and 40, respectively. It is used to predict behavior change, and a high score indicates high self-efficacy. Schwartzer & Jerusalem [35] calculated the reliability of this scale using the Cronbach's alpha method, resulting in a coefficient of 0.89. In Iran, it has been standardized and validated in various studies, with Cronbach's alpha coefficients of 0.81 and 82 in Rajabi's research [36].

Beck's Self-Concept Test

This test was developed by Beck *et al.* [38] to measure people's self-concept. It consists of 25 questions and 5 options for each question, which raises an attribute or characteristic that the subject must compare themselves with others. Scores range from 25 to 125. Beck *et al.* [38] reported reliability coefficients of 0.88 and 0.65 using a retest after one week and three months, respectively. The internal consistency coefficient for this scale has been reported as 0.80. The validity of this scale, compared to Rosenberg's Self-Esteem Scale, has been reported as 0.55.

Inferiority Scale

This scale was created by Yao *et al.* [39] and contains 34 items reflecting negative thoughts frequently reported by patients suffering from anxiety disorders (social phobia and obsessive-compulsive disorder). The Inferiority Scale is a self-report measure that includes 17 questions to assess self-evaluation of inferiority and 17 questions related to the judgment of others. Scores range from 34 to 170, with higher scores indicating greater feelings of inferiority.

15 out of 34 questions were related to negative events such as weakness, fatigue, error, failure, and criticism, while other 15 questions were related to positive events such as quality, success, definition, and praise. The remaining four items reflect unconditional hypotheses.

The reliability coefficient, obtained through test retesting in the research conducted by Yousefi *et al.* [40], was r=0.76, and the internal consistency of the scale items through Cronbach's alpha was 0.89. Mohammadpanah & Yousefi [41] reported Cronbach's alpha as 0.83 in their research. The reliability coefficient of the Inferiority Scale was 0.76 through retesting, with an internal consistency of 0.89 [40].

Disability Impact Scale

The Disability Impact Scale was designed to assess self-esteem in individuals with physical disabilities. The initial design of this test involved examining the theoretical background of self-esteem. The items are scored on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (strongly agree). For validity, the correlation coefficient between two test executions with a one-week interval was r=0.83, and the Cronbach's alpha coefficient was 0.83, indicating good reliability. The scale demonstrated acceptable content and face validity among veterans and disabled individuals. Exploratory factor analysis revealed that 53 items remained from the initial set, encompassing 14 factors: Feelings of inferiority, imaginary desire, family support, avoidance of disability, social isolation, despair, communication with others, emotional deprivation, acceptance of disability, attitude of people around, empowerment, acceptance of responsibility, sense of helplessness, and emotional isolation. The Disability Impact Scale showed significant convergent validity with the Rosenberg Self-Esteem Scale (r=0.47), Beck's Self-Concept Test (r=0.31), and the Inferiority Scale (r=0.57) [42].

Data analysis

Path analysis and Pearson correlation were employed to investigate the relationships between parameters using SPSS and AMOS software, version 16. To address missing data, participants' responses to items within the same domain on the scale were utilized. A significance level of 95% was established ($p<0.05$). The variance inflation factor (VIF) and tolerance tests were used to assess the non-collinearity of the independent parameters. Durbin-Watson's test was conducted to evaluate the independence of error parameters from each other. The linearity of the relationships between parameters was examined using a scatter plot. Indirect coefficients were analyzed using the bootstrap method.

Procedure

Before the commencement of the study, all necessary permissions from the relevant official institutions to implement the questionnaires were obtained. Participants were informed about the objectives of the study and provided with detailed explanations on how to complete the questionnaires. Informed consent was obtained from all participants. During the data collection phase, participants were given the questionnaires to complete. If any participant had questions or doubts while filling out the questionnaires, clarification and assistance was provided. After completing the questionnaires, participants were asked if they wished to be informed about the results of the data analysis later and noted their preferences. This structured approach ensured that participants fully understood the purpose of the study and how to accurately complete the questionnaires, thereby enhancing the reliability and validity of the data collected.

Findings

Out of the 280 participants in the study, 92 were veterans and 188 were individuals with disabilities (Table 1).

Table1. Demographic characteristics of the participants

Category	Subcategory	Frequency
Veteran Status	Veterans	92 (32.8%)
	Individuals with Disabilities	188 (67.2%)
Gender	Male	137 (48.9%)
	Female	143 (51.1%)
Marital Status	Single	101 (36.1%)
	Married	179 (63.9%)
Disability Type	Hand Disabilities	6 (2.2%)
	Leg Disabilities	128 (45.6%)
	Combined Disabilities	31 (10.6%)
	Spinal Cord Disabilities	115 (41.6%)
Education Level	Elementary School	22 (7.8%)
	Middle School or Equivalent	44 (15.6%)
	High School Diploma	134 (48.3%)
	Postgraduate or Bachelor's Degree	73 (26.1%)
	Master's Degree or Higher	7 (2.0%)

As previously noted, higher scores on the Disability Impact Scale indicate a more positive attitude toward disability. The results of correlation analysis revealed a significant positive correlation between positive attitude toward disability and self-concept (r=0.31, p<0.01) as well as self-efficacy (r=0.47, p<0.01) among veterans and disabled individuals in the study. Conversely, there was a significant negative correlation between positive attitudes toward disability and feelings of inferiority (r=-0.57, p<0.01). Feelings of inferiority showed a significant negative correlation with both self-efficacy (r=-0.29, p<0.01) and self-concept (r=-0.29, p<0.01). Additionally, self-concept and self-efficacy were positively correlated with each other (p<0.01).

To analyze the proposed model in this study, path analysis was employed. Assumptions of path analysis, including the normal distribution of scores, non-collinearity among independent parameters, and independence of error parameters, were examined and confirmed (Figure 1).

The direct path coefficient from perception of disability to self-concept (β=0.21) and self-efficacy (β=0.40) is positive and significant (Figure 1). This signifies that an increased positive attitude toward disability among veterans and disabled individuals is associated with higher levels of self-concept and self-efficacy. Moreover, perception of disability exhibited a significant negative direct effect on feelings of inferiority (β=-0.58). This indicates that veterans and disabled individuals who held a more positive attitude toward disability tended to experience lower levels of inferiority complex.

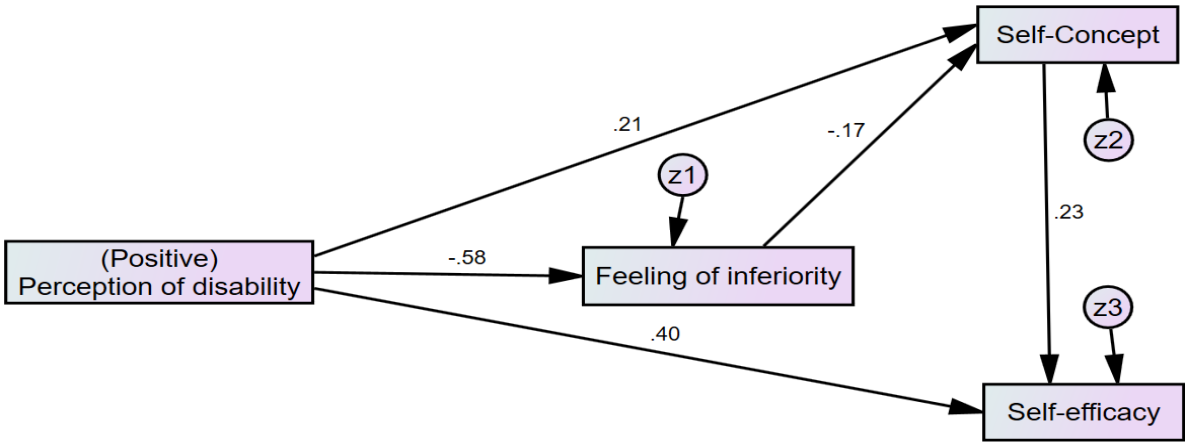

Figure 1. Path diagram between parameters

The path coefficient from feelings of inferiority to self-concept was also negative and significant (β=-0.17), suggesting that higher levels of feelings of inferiority in participants were associated with lower self-concept. Furthermore, self-concept demonstrated a positive effect on self-efficacy (β=0.23), indicating that participants with higher self-concept tended to exhibit higher levels of self-efficacy.

The fit indices indicate that the model achieved a satisfactory fit (Table 2). The chi-square value was insignificant (p=0.88, X2=0.03), indicating that the model fits the data well. Additionally, the goodness of fit indices (GFI), normalized fit index (NFI), relative fit index (RFI), incremental fit index (IFI), and comparative fit index (CFI) all exceeded 0.90, which is indicative of a good fit for the model. Moreover, the root mean square error of approximation (RMSEA) was 0.03, which falls within the favorable range as suggested by Kline [43]. These results provided strong support for the validity of the model, indicating that it accurately represents the relationships among the parameters studied.

The bootstrapping method was employed to explore indirect relationships and the mediating role of parameters. The results indicated that the coefficient of the indirect path from perception of disability to self-concept through feelings of inferiority was significant (β=0.22, p<0.01). This finding suggests that feelings of inferiority play a significant mediating role in the relationship between the perception of disability and self-concept among veterans and disabled individuals. It indicates that the perception of disability not only directly influences the self-concept of the research participants but also indirectly through reducing feelings of inferiority. This indirect pathway contributed to enhancing the self-concept of the participants.

Table 2. Fit indices

Indices	Value
CMIN	0.032
DF	1
CMIN/DF	0.032
GFI	0.95
NFI	0.98
IFI	0.96
TLI	0.99
CFI	0.96
RMSEA	0.03

Discussion

The present study aimed to explore the mediating role of feelings of inferiority in the relationship between the perception of disability, self-concept, and self-efficacy among individuals with physical disabilities. The perception of disability significantly influenced self-concept and self-efficacy of the individuals. This aligns with previous research such as Rasouli Aralloui Bozor & Hosseinzadeh Taghvaei [44], who express that significant differences in self-esteem, self-concept, and self-efficacy between veterans and non-veterans. Additionally, Shpigelman & HaGani [29] highligh that lower self-concept levels in individuals with invisible mental disabilities compared to those with visible physical disabilities. Similarly, Wickman *et al.* [45] demonstrate that physical activity can enhance self-efficacy in children with disabilities, bringing it to levels comparable to children without disabilities. Individuals with physical disabilities often face challenges compounded by societal biases and negative perceptions, which can impact their self-concept negatively [29]. The study also reflected how a positive attitude towards life and acceptance of disability can empower individuals to adapt, develop alternative competencies, and assert control over their lives, thus enhancing their self-efficacy. In conclusion, understanding the nuanced effects of disability on self-concept and self-efficacy is crucial for effective support and intervention strategies. By acknowledging and addressing these dynamics, it becomes possible to promote resilience and enhance the quality of life for individuals with disabilities. Future research should continue to explore these relationships across diverse populations and contexts to further refine our understanding and support mechanisms.

The findings of this study highlighted that attitudes towards disability exert an indirect effect through reducing feelings of inferiority. These results resonate with previous research by Narimani & Mousazadeh [46], who have observed differences in self-esteem and self-concept between disabled and non-disabled students. Similarly, Olney & Brockelman [47] have found out that the visibility of disability and gender significantly influence the self-concept of students with disabilities. Disability is a pervasive human experience shaped by factors such as wars, accidents, and congenital conditions, affecting millions annually. Individuals with physical disabilities often face societal discrimination and familial challenges, which contribute significantly to feelings of inferiority. These negative attitudes and reactions from society and family members can undermine their self-perception and efficacy, exacerbating personal and social challenges. The resulting feelings of inferiority are common among people with physical disabilities, varying in intensity but often leading to destructive effects on their well-being.

The personality structure of individuals with physical disabilities is uniquely impacted, predisposing them to higher levels of depression, hopelessness, and perceived helplessness compared to non-disabled peers [48]. Social prejudices and the challenges of coping with physical limitations further compound their difficulties, often resulting in setbacks in education, employment, and social integration [49]. However, research also indicates that support groups play a crucial role in enhancing the self-concept, self-efficacy, and overall quality of life for individuals with disabilities [50]. By providing a supportive environment and promoting acceptance, these groups empower individuals to navigate their challenges more effectively and foster a positive self-image.

In conclusion, understanding and addressing the psychological impacts of disability, particularly feelings of inferiority, are vital for developing inclusive strategies that promote resilience and well-being among individuals with disabilities. Future research should continue to explore effective interventions and support mechanisms to mitigate these challenges and enhance the overall quality of life for this population.

The findings of this study underscored that self-concept significantly enhances future self-employment prospects among individuals with physical disabilities. These results are in line with the research conducted by Craft & Hogan [51] on self-concept development and self-efficacy, where they emphasize the profound impact of personal goals on emotional well-being. They argue that educators have long recognized the pivotal role of emotional development in achieving educational outcomes. Similarly, Arafah *et al.* [52] explore the role of self-concept and self-efficacy in enhancing motivation and academic performance in physics. Their findings support a direct positive relationship between self-concept and self-efficacy, highlighting that individuals' beliefs about their capabilities (self-efficacy) are closely intertwined with their self-perceptions (self-concept). Changes in one of these constructs can influence changes in the other, illustrating their interconnected nature.

In the context of individuals with physical disabilities, a positive self-concept not only shapes their self-perception but also bolsters their belief in their capabilities (self-efficacy), thereby enhancing their

readiness for future self-employment endeavors. By fostering a strong sense of self-worth and confidence, interventions aimed at nurturing self-concept can potentially empower individuals to pursue and succeed in entrepreneurial ventures despite physical challenges. Moving forward, future research should continue to explore effective strategies to enhance self-concept and self-efficacy among individuals with disabilities, with a focus on practical applications in educational and vocational settings. By addressing these psychological dimensions, educators, policymakers, and practitioners can contribute to creating inclusive environments that support the aspirations and achievements of individuals with physical disabilities in various domains of life.

It was evident that perceptions regarding the causes of disability, the societal role of individuals with disabilities, and society's attitudes toward disability significantly influence attitudes toward disability itself. People with physical disabilities often lack awareness of their own abilities, interests, or career values that could guide them toward suitable career choices. Consequently, they experience lower levels of self-concept and self-efficacy, primarily due to feelings of inferiority. In contemporary times, the key to empowering individuals with disabilities lies in adequately preparing them for the workforce. This preparation is essential for their successful integration into work environments, enabling them to contribute positively to their communities as valuable assets.

Every research endeavor encounters limitations in data collection and achieving desired outcomes, which necessitates their identification and steps to address them. One limitation of the current study is the scarcity of research on inferiority complexes among individuals with physical disabilities, which restricts the contextual backdrop for the research conditions. Moreover, the study's scope is confined to people with physical disabilities, limiting the generalizability of the findings to other disabled populations. Based on the research findings, it is recommended that future studies expand their sampling to include multiple cities to enhance explanatory power and broaden the generalizability of results. Future research should also explore additional factors influencing adaptation, such as social support, socioeconomic status, visibility of disability, trauma, availability of organizational support, and progress.

Furthermore, investigating the differences between genders within disabled groups and their effects on the parameters of interest should be a priority. Exploring the efficacy of psychological interventions in improving the condition of these individuals is also recommended. Qualitative research methodologies should be considered to delve deeper into how various parameters impact the development of self-concept and self-efficacy. Qualitative analysis allows researchers to explore the nuances of self-perception and aspirations more comprehensively. In terms of applied research, interventions grounded in positive psychology could prove beneficial in fostering hope and resilience among individuals with disabilities.

Conclusion

People with physical disabilities tend to have lower self-concept and self-efficacy due to the feelings of inferiority. Improvement of individuals perception about their disabilities directly enhances their self-concept and self-efficacy.

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