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People with Disabilities and Financial Challenges in Access to Rehabilitation Services: Evidence of Socioeconomic Inequality in Iran

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Abstract

Background: People with disabilities (PWD) typically face a range of obstacles when accessing healthcare, particularly when compared with the general population. This challenge becomes more pronounced for PWDs in lower socioeconomic groups. This study aimed to assess the socioeconomic-related disparity in financial access to rehabilitation services among Iranian PWDS.

Methods: A total of 766 Iranian PWDs aged ≥18 years participated in this cross-sectional study. We employed the concentration index (C) to estimate socioeconomic inequality in accessing rehabilitation services.

Results: In this study, 766 Iranian adults aged 18 to 70 took part, with a mean age of 36.50 (SD, ±10.02) years. The findings revealed that 72.15% (n = 469) of participants had to borrow money to cover the costs of rehabilitation services. The concentration index (C = -0.228, $P = 0.004$) demonstrated a notable concentration of inadequate financial access to rehabilitation services among individuals with lower socioeconomic status (SES). Decomposition analysis identified the wealth index as the primary contributor to the observed socioeconomic disparities, accounting for 309.48%.

Conclusion: Our findings show that socioeconomic inequalities disproportionately impact PWDs in lower socioeconomic groups. It is recommended that efforts be made to enhance the national capacity for monitoring the financial protection of PWDs and to develop equitable mechanisms that promote prepayment and risk pooling, thus reducing reliance on out-of-pocket payments at the time of service utilization.

Keywords: Inequality, Socioeconomic Factors, Concentration Index, Rehabilitation, Access to Health Care, Iran

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Introduction

Equitable access to healthcare is a fundamental component of achieving overall health equity, and its absence can serve as a significant marker for health disparities within a population (1). Individuals with disabilities (PWDs) encounter various obstacles—ranging from physical and geographical challenges to cultural and financial barriers—when attempting to access healthcare, thereby exacerbating the disparities they face compared with the general population (2-4). This discrepancy is particularly pronounced among PWDs of lower socioeconomic status (SES) (5), contributing to unfavorable health outcomes and widening the health gap between those with disabilities and those without (6).

Estimates indicate that 1% to 4% of the Iranian popula-

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↑What is "already known" in this topic:
Rehabilitative services are inaccessible to Iranians PWDs due to a variety of cultural, physical, economical, and geographic obstacles.

→What this article adds:
In this study, socioeconomic inequalities disproportionately impact PWDs in lower socioeconomic groups. The study found that the wealth index, place of residence, and health insurance coverage were the main factors contributing to the observed disparity in financial access in adult PWDs.

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tion are living with a disability (7). Of these, physical disabilities have the highest prevalence compared with other disabilities (8).

Iran has taken steps to protect the rights of PWDs through various legal frameworks and international commitments. The Constitution of the Islamic Republic of Iran includes provisions that address the rights of PWDs. For instance, Article 20 of the Constitution prohibits discrimination based on various grounds, including disability. Iran has enacted several laws that aim to protect the rights and improve the conditions of PWDs. Some relevant laws include the Law on the Protection of the Rights of Persons with Disabilities (LPRPD) (2018) and the Law of Ratification of the Convention on the Rights of Persons with Disabilities (2008). Article 6 of the LPRPD imposes significant responsibilities on the Ministry of Health, including providing health insurance coverage and necessary medical and rehabilitation services for PWDs (9). In addition to the Ministry of Health, the Iranian State Welfare Organization is responsible for the welfare and rehabilitation of PWDs.

Since passing the LPRPD law, access to health and social services has improved for PWDs in Iran—that is vehicles with accessibility features, disability pensions, free rehabilitation services, and assistive devices. However, they still experience numerous obstacles to using medical services (10-12). Some studies have recognized sociocultural factors, such as negative attitudes, a reluctance to provide healthcare to PWDs, discrimination, disrespect, and misconceptions, as barriers to accessing healthcare in Iran (4, 13). Some findings note that public spaces—such a sidewalks, streets, and health care facilities—and public transportation systems are not physically accessible for PWDs (14, 15).

Conversely, financial barriers pose significant challenges to accessing rehabilitation services, encompassing a spectrum of specialized care, including audiology, physical therapy, physical medicine, occupational therapy, orthotics and prosthetics, and speech therapy. These services are delivered across diverse settings—such as outpatient facilities, inpatient centers, community-based programs, and long-term care centers.

A study by Ahmadzadeh et al in 2018 (10) highlighted notable disparities in the distribution of outpatient rehabilitation facilities across Iran. For instance, the rate of occupational therapy offices in Tehran province was recorded at 35.5 per 100,000 people. In contrast, in other provinces such as Hormozgan, the estimates were markedly lower at around 0.6 per 100,000 people. This underscores the substantial discrepancies in the availability of crucial rehabilitation services, shedding light on the unequal access experienced by different regions within the country.

In Iran, services such as speech therapy, occupational therapy, orthotics, and prosthetics are not covered by health insurance. Services like physical therapy impose high out-of-pocket payments (OOP) on PWDs. The results of a study conducted by Rezaei et al (16) in 2020 indicate that OOP expenses for healthcare exhibit a regressive pattern, with a greater concentration among those with lower SES. For example, Zarei et al (16), in 2016, found that the OOP for physical therapy was around 31%. Furthermore, Ayobian et al conducted a cross-sectional study in 2005 (17). They discovered that the elevated costs associated with physical therapy resulted in a diminished utilization of this essential service among patients with spinal cord injuries in Iran. Regarding the association between disability and poverty, disability in lower SES groups can lead to exclusion from work, education, and healthcare, which in turn can cause or exacerbate poverty (18). Thus, health financing policies must ensure financial protection for disadvantaged groups in an equitable, efficient and sustainable manner. Regarding the importance of socioeconomic factors in access to health care, we intended to measure socioeconomic inequalities in access to rehabilitation services in Iran.

Methods

Study Design and Participants

This survey employed a cross-sectional study design, utilizing an online questionnaire to collect data. The study participants were sourced from the Iranian Society with Disabilities (ISD), a nongovernmental organization committed to enhancing access to education, healthcare, assistive devices, and various resources for PWDs characterized by lower SES in Iran. At the time of the study, the ISD had approximately 50,000 adult members with disabilities aged ≥18 years.

Convenience sampling was employed to select participants for the study. The inclusion criteria comprised those who met the following criteria: a PWD aged ≥18 years, a member of the ISD, and an Iranian national. The exclusion criteria consisted of those who did not provide consent to participate, individuals <18 years, and those without disabilities.

Data Collection

To examine socioeconomic inequalities in poor financial access to rehabilitation services, we utilized a questionnaire developed by Karami Matin et al (2019) (19). This self-report questionnaire assesses SES, disability status, and access to healthcare services. The validity of the questionnaire was examined using qualitative content analysis, and it was approved by a panel of 10 academic healthcare experts. The reliability of this tool was evaluated by test-retest reliability analysis using the kappa coefficient, which indicated a substantial level of agreement between the 2 administrations of the test (Kappa coefficients, 0.6-1). Regarding the COVID-19 pandemic, we employed an electronic version of the questionnaire distributed through shared links via messaging such applications as Telegram and WhatsApp. Data collection took place between September 2020 and December 2020.

In addition, disability status was assessed using a 6-item questionnaire developed by the Washington City Group (2009) (20). These items focused on fundamental functional abilities—including walking or climbing steps, seeing, hearing, washing all over or dressing, remembering or concentrating, and communicating. These functions were selected because of their universal relevance, frequent occurrence, and association with social exclusion.

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Variables

The outcome variable was a binary variable indicating whether the study participants borrowed money to pay for rehabilitation services the last year.

In this study, the degree of functional limitations was assessed using a 4-point scale, categorizing individuals based on the extent of difficulty: "no difficulty," "some difficulty," "a lot of difficulty," and "unable to do it." For additional insights into the questionnaire employed, please refer to the comprehensive details provided in the study conducted by Palmer and Harley (20).

Measuring SES using income and consumption can pose significant challenges, leading researchers to develop proxy indicators. In past studies, the wealth index has emerged as a fundamental proxy indicator in health research (21). In this study, we utilized data on asset ownership (such as cars, microwave ovens, twin refrigerators/side by side refrigerators, personal computers, vacuum machines, washing machines, and dishwashers), housing features (such as house area and private or rental housing), and educational level of the study participants to develop SES variable based on existing data.

To develop the SES indicator, we employed the Filmer and Pritchett's method (22), which utilizes principal components analysis to reduce multidimensional datasets on household asset ownership to fewer dimensions. This approach allowed us to divide the participants into 5 wealth quintiles, ranging from the lowest (1st quintile) to the highest (5th quintile) groups.

Our study examined several potential contributors to the observed socioeconomic inequality in poor financial access to rehabilitation services. These contributors are as follows:

Sex: Participants were categorized as men or women.

Age: Age groups were defined as 18-27 years, 28-37 years, 38-47 years, 48-57 years, and ≥58.

Marital status: Participants were classified as single, married, or widowed/divorced.

Place of residence: Participants were categorized based on their residence, distinguishing between urban and rural areas.

Head of household: Participants were identified as either the head of the household or not.

Health Insurance Coverage: Health insurance coverage was categorized into no insurance, Social Security, Military, Universal Health Insurance (UHI), Civil Servants, and Others.

Education: Education levels were classified as illiterate, primary school, secondary school, high school, and academic.

Statistical Analysis

Estimation of Socioeconomic-related Inequality Using the Concentration Index

In this study, the Concentration Index (C) was employed to gauge socioeconomic-related inequality in financial access within the study population. The C is derived from the concentration curve, which illustrates the cumulative percentage of the outcome variable (in this case, poor financial access) on the vertical axis against the cumulative percentage of the population, ranked by their SES, on the horizontal axis. This ranking begins with the lowest SES and concludes with the highest.

The C is calculated as twice the area between the concentration curve and the line of equality, represented by the 45-degree line. Its values range from -1 to +1, with a positive C indicating the concentration of the health outcome among higher SES groups and, conversely, a negative C showing concentration among lower SES groups.

Suppose the outcome variable takes a positive value among the population. In that case, the concentration curve will lie above the line of equality that shows the outcome variable is concentrated among low SES individuals. The zero amount of C indicates an equitable socioeconomic distribution of health outcomes across various socioeconomic groups. The coefficient C can be calculated using the "convenient covariance" formula as follows (23):

$$C = \frac{2 * cov(y_i\, r_i)}{\mu}, \quad (1)$$

where y_i is the health outcome variable (ie, access to rehabilitation services) for participant i, r_i is the fractional rank of participant i in the distribution of SES indicator, $and\ \mu$ is the mean of the health outcome variable.

As financial access to rehabilitation services was represented as a binary variable, the conventional range of +1 to -1 for the coefficient C does not apply. Consequently, we employed normalization based on Wagstaff's method to adjust the C values (24):

$$C_n = \frac{1}{1-\mu} \quad (2)$$

Decomposition of Socioeconomic Inequality in Access to Rehabilitation Services

The normalized C value was decomposed to discern the contribution of explanatory variables to the observed socioeconomic inequality in access to rehabilitation services. This decomposition process aligns with the approach outlined by Wagstaff et al (25) who demonstrated that in a regression model linking a health outcome variable (y) to a set of k explanatory variables (x), the decomposition can be expressed as follows:

$$y = \alpha + \sum_k \beta_k\, x_k + \varepsilon, \quad (3)$$

The C for y can be decomposed as follows:

$$C = \sum_k \left(\frac{\beta_k \bar{x}_k}{\mu}\right) C_k + GC_\varepsilon/\mu. \quad (4)$$

In this equation, $\bar{x}_k$ indicates the mean of the explanatory variable, x , C_k is the C for each explanatory variable, and GC_ε shows the generalized C for ε. In equation 4, the first component $\sum_k \left(\frac{\beta_k \bar{x}_k}{\mu}\right) C_k$ shows the contribution of explanatory variable x to the overall socioeconomic-related inequality in the outcome variable. A positive contribution implies that the socioeconomic distribution of this variable and its association with financial access amplifies the concentration of poor financial access in those with high SES.

Also, in equation 4, the second component, $\frac{GC_\varepsilon}{\mu}$ indicates

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the proportion of socioeconomic inequality in financial access to rehabilitation services that is not elucidated by the systematic variation of the included explanatory variables across SES groups. Applying Wagstaff's (24) correction into Equation results in the following:

$$C_n = \frac{C}{1-\mu} = \frac{\sum_k \left(\frac{\beta_k \bar{x}_k}{\mu}\right) C_k}{1-\mu} + \frac{GC_\varepsilon/\mu}{1-\mu} \quad (5)$$

Given that poor financial access to rehabilitation services was a binary variable ("Did you borrow money for rehabilitation?"), we employed marginal effects obtained from a logistic model as:

a beta in the decomposition of the cap C sub n.

The data analysis procedures were conducted using Stata Version 14.

Results

In general, 766 Iranian adults with disabilities took part in the present study. As shown in Table 1, There were more women than men (493 men and 273 women), and the overall mean age ranged from 18 to 70 years (mean, 36.50 years; ±SD, 10.02). In addition, 40.35% and 88.83% of the participants were married and resided in an urban setting. Furthermore, 43.50% (n = 331) of participants were covered by Social Security insurance, and 55.75% (n = 441) held an academic degree. In our study, 72.15% (n = 469) of participants reported having to borrow money to cover the expenses of rehabilitation services.

Regarding Table 2, the value of the C was estimated at -0.228 ($P = 0.004$), indicating a higher concentration of poor financial access among low-SES participants. In Figures 1 and 2, the Lorenz curves show the cumulative distribution of poor financial access over the cumulative population ordered by SES.

Table 3 presents the cumulative percentage contributions of the driver variables toward socioeconomic inequality in accessing rehabilitation services due to financial constraints. The results highlight that the wealth index accounted for a substantial portion, amounting to 309.48%, of the overall socioeconomic inequality observed in poor financial access to rehabilitation services. Subsequently, the place of residence emerged as the second most influential factor, explaining 50.69% of the overall socioeconomic inequality in accessing rehabilitation services. Furthermore, health insurance exhibited a positive association with overall inequality, contributing to 11.02% of the observed inequality among the participants.

Discussion

The present study suggested that poor financial access was concentrated among the low SES participants. In agreement with our findings, the survey by Karami matin et al (19) indicated that the affordability was one of the main predictors of access to healthcare in PWDs in Iran. Their study revealed that 88% of PWDs encountered financial difficulties in accessing healthcare, and 41.9% resorted to borrowing money to cover the costs of health services.

Decomposition analysis showed that the wealth index was the most significant contributor to the inequality in poor financial access to rehabilitation services. The positive contribution shows that the wealth index is important in the disproportionate distribution of access to rehabilitation services in PWDs. The absence of insurance coverage for essential rehabilitation services such as occupational therapy, speech therapy, and orthotics and prosthetics in Iran may significantly hinge on the economic status of families as a crucial determinant for accessing these services. For example, the study by Abdi et al (13) shows that financial problems were one of the main barriers to utilizing rehabilitation services in Iran. Furthermore, the findings of Soltani et al show that low income reduces access to healthcare in PWDs in Iran (3).

Table 1. Summary characteristics of the study population

Variable		Study population (%)
Sex	Male	493 (64.36)
	Female	273 (35.64)
	Total	766
Age groups (years)	18-27	69 (10.66)
	28-37	218 (33.69)
	38-47	241 (37.25)
	48-57	98(15.15)
	>=58	21 (3.25)
	Total	647
Marital status	Single	403 (54.02)
	Married	301 (40.35)
	Widowed and divorced	42 (5.63)
	Total	746
Place of residence	Urban setting	681 (88.33)
	Rural setting	90 (11.67)
	Total	771
Head of households	No	418 (54.71)
	Yes	346 (45.29)
	Total	764
Disability severity	1st quartile (low severity)	259 (39.72)
	2nd quintile	125 (19.17)
	3rd quintile	165 (25.31)
	4th quartile (high severity)	103 (15.80)
	Total	652
Insurance	No insurance	83 (10.91)
	Social Security	331 (43.50)
	Military	21 (2.76)
	Universal Health Insurance	189 (24.84)
	Civil Servants	91 (11.96)
	Other	46 (6.04)
	Total	761
SES	1st quintile (the lowest)	120 (20.13)
	2nd quintile	120 (20.13)
	3rd quintile	118 (19.80)
	4th quintile	120 (20.13)
	5th quintile (the highest)	118 (19.80)
	Total	596

Table 2. The value of the concentration index among males, females, and the total population

Gender	Coefficient	Std. Err.	t	P>t	[95% Conf. Interval]	
Male	-0.276*	0.112	-2.46	0.015	-0.499	-0.053
Female	-0.173	0.113	-1.53	0.128	-0.396	0.051
Total	-0.228*	0.078	-2.89	0.004	-0.383	-0.072

*Coefficients are statistically significant at 0.05 level

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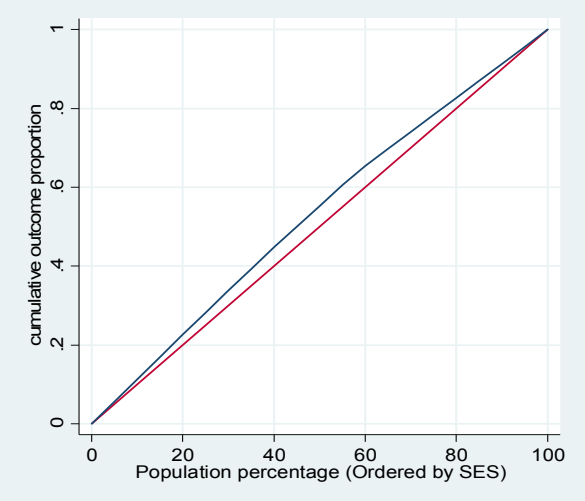

Figure 1. The Lorenz curve illustrates the cumulative distribution of poor financial access across the population ordered by SES

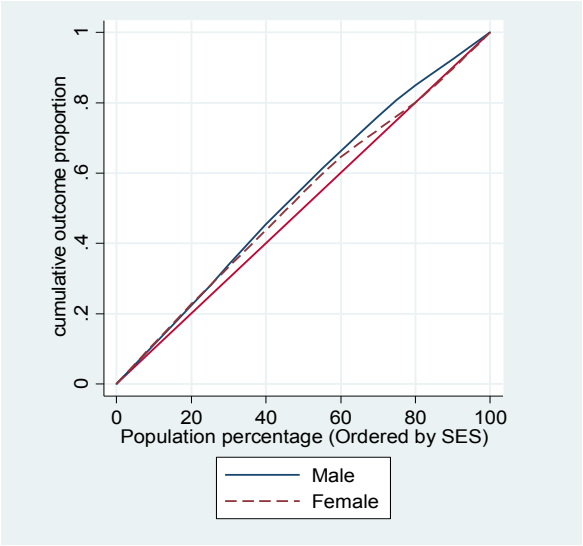

Figure 2. The Lorenz curve illustrates the cumulative distribution of poor financial access across the population ordered by SES among men and women with disparities

In this study, place of residence (rural/urban setting) emerged as the second significant factor contributing to socioeconomic disparities in poor financial access to rehabilitation services. This positive contribution results from both the negative C for urban settings and the negative elasticity of all measures of poor access to rehabilitation services. The underlying reasons for this outcome are likely multifaceted, encompassing variations in health insurance plans, the composition of healthcare providers (private versus public), the presence of socioeconomically disadvantaged individuals within rural areas, and the comparatively greater geographical accessibility to rehabilitation services in urban settings.

Furthermore, the health insurance plan was the third positive contributor to the socioeconomic inequalities in the study population's poor financial access to rehabilitation services. Concerning this finding, the variation of outcome variables between types of health insurance plans can increase socioeconomic inequality in access to rehabilitation services. The result is due to different coverage policies by insurance organizations. For example, the Armed Forces Medical Service Insurance Organization, which covers the army, provides low-cost rehabilitation services to the army and their families. At the same time, the UHI (Universal Health Insurance) as an insurer (not a provider) does not cover the costs of rehabilitation services such as occupational therapy for the insured. Consistent with our study findings, Carvalho et al (26) noted that different healthcare insurance policies and coverage affect OOP costs for patients, which in turn results in variability in services and barriers to appropriate healthcare. In the United States, copays can reach as high as $75 per visit for therapy services, which can influence access to services. Consequently, the lack of financial access to rehabilitation services poses a significant barrier for PWDs, potentially impeding their ability to reintegrate into the workforce or engage in various activities of daily living.

In this study, the severity of disability made a negative contribution to the socioeconomic inequality in poor financial access to rehabilitation. The finding reveals that the distribution of the outcome variable between different quintiles of disability severity has a negative effect on the socioeconomic inequality among the participants.

There is an unexpected inconsistency between findings on this topic that may be due to different study designs or sampling methods. The study by Vergunst et al (27) in Africa indicated that people with a higher level of disability severity significantly faced more barriers to accessing healthcare. Also, Sakellariou and Rotarouin (28) in the United Kingdom revealed that people with a severe disability were 4.5 times more likely to report unmet healthcare needs due to cost, while patients with a mild disability had 3.6 higher odds of unmet needs due to the cost of prescribed medicine. However, Bright and Kuper (29), in a systematic review of low- and middle-income countries, found that disability may or may not lead to a higher health expenditure in PWDs. They reported that 5 studies (63%) showed a higher expenditure incurred by PWDs compared with their counterparts without disabilities, while 3 studies (37%) indicated no difference.

In summary, our study reveals that PWDs in lower SES groups disproportionately bear the challenge of inadequate financial access to rehabilitation services. Consequently, it becomes evident that comprehensive, intersectional strategies are warranted to enhance financial access to rehabilitation services for PWDs. Given the vital role of rehabilitation services in improving functionality and quality of life for PWDs, a recommended course of action involves reshaping the health insurance coverage landscape to foster equality in access to these essential services.

The coverage of therapy and rehabilitation services has been relatively overlooked over the past several decades in Iran. Previous research findings underscore that the deficiency in health insurance coverage has been linked to in-

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Table 3. The decomposition of socioeconomic-related inequality in poor financial access to rehabilitation services

Variable	Partial effects	Mean	Elasticity	Concentration Index (Ck)	Absolute Contribution	Percentage contribution	Summed Percentage Contribution
Sex							-1.96
Female							
Male	-0.006	0.627	-0.025	-0.050	0.004	-1.964	
Age							-1.77
18-27							
28-37	0.033	0.277	0.061	-0.044	-0.010	4.200	
38-47	0.049	0.306	0.100	-0.015	-0.005	2.349	
48-57	-0.011	0.124	-0.009	0.101	-0.003	1.439	
>=58	-0.304	0.025	-0.051	-0.123	0.022	-9.762	
Marital status							-32.60
Married							
Single	-0.094	0.512	-0.321	-0.064	0.073	-32.166	
Others (widow, divorced)	0.011	0.053	0.004	0.072	0.001	-0.438	
Education							-28.58
Illiterate							
Primary school	0.064	0.067	0.029	-0.191	-0.020	8.553	
Secondary school	0.073	0.143	0.070	-0.247	-0.061	26.926	
High school	0.032	0.207	0.044	0.011	0.002	-0.761	
Academic	0.049	0.554	0.181	0.131	0.085	-37.136	
Head of household							0.00
No							
Yes	-0.039	0.442	-0.115	0.000	0.000	0.000	
Place of residence							50.69
Urban setting							
Rural setting	0.094	0.114	0.071	-0.453	-0.116	50.693	
Disability severity							-11.885
Mild							
Moderate	0.077	0.191	0.098	-0.071	-0.025	10.904	
Severe	0.019	0.154	0.020	-0.064	-0.004	1.956	
Profound	0.178	0.256	0.304	0.052	0.056	-24.745	
Health Insurance coverage							11.02
No insurance							
Social Security	0.013	0.434	0.038	0.028	0.004	-1.650	
Military	0.059	0.027	0.011	0.435	0.016	-7.236	
Universal Health Insurance	-0.021	0.248	-0.035	-0.221	0.027	-12.019	
Public	-0.058	0.119	-0.046	0.452	-0.074	32.578	
other	-0.011	0.060	-0.004	-0.095	0.001	-0.655	
Wealth index							309.48
1st quintile (the lowest)							
2nd quintile	-0.056	0.194	-0.072	-0.331	0.086	-37.552	
3rd quintile	-0.062	0.201	-0.083	-0.074	0.022	-9.630	
4th quintile	-0.127	0.203	-0.172	0.204	-0.125	54.922	
5th quintile (the highest)	-0.247	0.201	-0.331	0.582	-0.688	301.739	
explained					-0.73		294.38
residuals					0.98		-194.38
total					0.25		100.00

adequate access to rehabilitation services, resulting in prolonged appointment delays for PWDs in Iran. This highlights the need for increased attention and policy consideration in addressing the gaps in coverage for these essential services (13, 30-32). Given that long-term therapies can impose significant financial burdens on PWDs and their families, it becomes imperative to implement health policy reforms in Iran. These reforms are crucial not only to safeguard health rights but also to promote the overall well-being of disadvantaged groups. By addressing the gaps in

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coverage for therapies and rehabilitation services, these policy changes can contribute to mitigating the economic challenges faced by PWDs and their families, fostering a more inclusive and equitable healthcare system in Iran.

In addition to therapy and rehabilitation services, in Iran, PWDs face financial barriers to accessing assistive technologies and medicines, which in turn can exacerbate catastrophic health expenditures for PWDs.

Regarding the pivotal role and high costs associated with assistive technologies for PWDs, health policymakers need to prioritize financial protection measures for this demographic. Ensuring accessible and affordable financial support can mitigate the economic burden on PWDs, facilitating their access to crucial technologies that enhance their independence and overall quality of life. Incorporating such considerations into health policy agendas is paramount for promoting inclusivity and addressing the specific needs of PWDs.

Financial protection as one of the leading universal health coverage goals is achieved when out of pocket payments made to use healthcare do not expose PWDs to economic hardship and do not jeopardize health and living standards (33).

Limitations

Our study has several limitations that should be taken into consideration. First, because of the outbreak of the COVID-19 pandemic in Iran, we collected data online. This approach may have excluded those PWDs who lack access to communication tools such as mobile phones or computers and those with lower educational levels. Consequently, our sample may not fully represent the entire population of PWDs.

Another limitation pertains to using the corrected or normalized concentration index to assess socioeconomic inequality. This approach is subject to certain restrictions, including assumptions of linearity, sensitivity to variable selection, and the cross-sectional nature of our study design. These considerations should be taken into account when interpreting our findings.

Only approximately 3% of our participants were ≥58 years. Given the higher prevalence of disabilities among the elderly population, further research should be conducted to investigate socioeconomic-related inequalities in catastrophic health expenditure within this specific age group.

Our study did not include PWDs who were <18 years. This exclusion may have implications for estimating the concentration index, as it may not fully capture the socioeconomic disparities experienced by this particular age group.

Furthermore, the recruitment of participants solely from the Iranian Society with Disabilities may introduce selection bias and potentially limit the generalizability of the study findings to the broader target population.

Overall, while our study contributes valuable insights, it is important to consider these limitations when interpreting the results. Future research endeavors should address these limitations to obtain a more comprehensive understanding of socioeconomic inequalities in the context of disability.

Conclusion

Our findings show that socioeconomic inequalities disproportionately impact PWDs in lower socioeconomic groups. Accordingly, health financing policies should pay more attention to the financial protection of PWDs in Iran because of their extensive health needs. Building national capacity for monitoring financial protection for PWDs and designing equitable mechanisms for prepayment and risk pooling rather than OOP payments at the time of use is recommended in Iran.

Abbreviations

C, Concentration Index; CI, Confidence Interval; PCA, Principal Component Analysis; PWDs, People with disabilities; SES, Socioeconomic Status; ISD, Iranian society with disabilities; CLPRPD, comprehensive law to protect the rights of people with disabilities; WHO, World Health Organization; UHI: Universal Health Insurance.

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Authors' Contributions

S.S.: Contributed to the design of the work, analysis, and interpretation of the results, writing and revising the entire manuscript; B.K.M.: Contributed to analyzing the data; K.A.: Contributed to data collection; J.G.: Contributed to writing and editing the full manuscript H.S.: Contributed to the design of the work, writing, and editing the full manuscript.

All authors read and approved the submitted and modified versions of the manuscript. Also, all authors agreed to be personally accountable for the author's contributions and to ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated, resolved, and the resolution-documented in the literature.

Ethical Considerations

The study was approved by the ethics committee of Birjand University of Medical Sciences (code of ethics: IR.BUMS.REC.1399.377). All methods were performed in accordance with relevant guidelines and regulations.

Conflict of Interests

The authors declare that they have no competing interests.

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