Proceeding of The 6st International Conference on Interprofessional Health Collaboration and Community Empowerment

Bandung, 22-23 November 2023

ADVANCING PHYSICAL ABILITIES: ANALYSIS OF HEALTH POLICY REFORMS FOR PEOPLE WITH PHYSICAL DISABILITIES IN INDONESIA

Feryanda Utami[1], Vasuki Rajaguru[2], Jieun Jang[3] , Jaeyong Shin[4]*

[1*)]Department of Prosthetics and Orthotics, Poltekkes Kemenkes Jakarta I, Cilandak, South Jakarta 12430, Indonesia
[2)]Graduate School of Public Health, Yonsei University, Yonsei-Ro, Seodaemun-gu, Seoul 03722, Korea
[3)]Department of Preventive Medicine, College of Medicine, Yonsei University, Yonsei-Ro, Seodaemun-gu, Seoul 03722, Korea
[4)]Institute of Health Services Research, Yonsei University Health Science, Yonsei-Ro, Seodaemun-gu, Seoul 03722, Korea
Email: feryanda@jspo.ac.id

Abstract

Introduction: Indonesia, a country with approximately 30.38 million people facing disabilities, encounters challenges in meeting the diverse needs of this significant demographic. The 2010 Population Census reported a 4.74% increase in disability prevalence over the past decade. The initiation of the National Health Insurance (JKN) in 2014 aimed not only to alleviate financial burdens but also to enhance the overall health and well-being of individuals with disabilities.

Objective: This study delves into the impact of JKN on the physical capabilities of individuals with disabilities, specifically concentrating on Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL).

Methods: Using IFLS data, this research centers on 2,296 disabled individuals from IFLS4 (2008) and 3,463 from IFLS5 (2015). Logistic regression models examine the effect of JKN implementation on physical capabilities, accounting for potential confounding variables. The investigation explores the associations between sociodemographic factors and physical abilities both before and after the policy change.

Results and Discussion: The results demonstrate significant enhancements in physical abilities following the implementation of JKN, especially among younger age groups, individuals with non-traditional marital statuses, females, and those covered by health insurance. Surprisingly, a reversal in the correlation between education levels and physical abilities is observed. The study underscores the pivotal role of insurance coverage in facilitating improved physical abilities among individuals with disabilities.

Conclusion: The implementation of JKN has substantially improved the well-being and physical capabilities of individuals with disabilities in Indonesia. The study underscores the significance of evidence-based policies, accessible healthcare, and equitable health insurance coverage to promote inclusivity and address the diverse needs of this population. Policymakers are urged to prioritize initiatives that enhance the quality of life for Persons with Disabilities in Indonesia and beyond.

Keywords: Persons with Disabilities; Physical Ability; Inclusivity and Equity; Health Insurance Reforms; Indonesia

DOI 10.34011/icihcce.v6i2.298

INTRODUCTION

Indonesia, home to approximately 30.38 million people grappling with disabilities, as reported in a study conducted by P2PTM (1) stands at a crossroads in addressing the diverse challenges faced by this significant demographic group. The 2010 Population Census, highlighted by Lisa Cameron (2), revealed a 4.74% increase in disability prevalence over the decade. Insights from The National Socioeconomic Survey (Susenas) and Indonesian Basic Health Research (Riskesdas) data in 2012 and 2013 further underscored the high prevalence of disability with increasing age, emphasizing the importance of comprehensive health service solutions (2). Many people with disabilities face barriers to full participation and integration in society, as documented by BPS-Indonesia (3).

Recognizing the critical role of health in determining one's ability to perform daily tasks, the Indonesian government introduced the National Health Insurance, or Jaminan Kesehatan Nasional (JKN), managed by the Social Security Agency on Health, or Badan Penyelenggara Jaminan Sosial Kesehatan (BPJS). Operational since January 1, 2014, the BPJS program aims not only to alleviate financial burdens but also to enhance overall health and well-being.

Health insurance reforms, when designed to expand coverage and reduce financial barriers, hold the promise of increased access to healthcare services for Persons with Disabilities (PwD). This expanded access encompasses rehabilitation services and assistive devices, contributing to an overall improvement in their ability to perform daily activities. Coster et al. in 2007 revealed that the inclusion of comprehensive coverage for rehabilitation services not only ensures improved access to various therapies and interventions but also positively impacts the physical abilities and functional independence of PwD, directly influencing their proficiency in Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL).

Furthermore, if insurance reforms include coverage for assistive devices, such as mobility aids (e.g., prosthetics and orthotics), the functional capabilities of PwD in performing daily tasks can experience significant enhancement. This approach goes beyond mere accessibility, directly contributing to improved outcomes in both ADL and IADL. Aligning health insurance reforms with inclusive healthcare policies is pivotal in dismantling barriers to access and participation for PwD (4). By prioritizing the specific needs of this demographic, these reforms ensure that healthcare services are tailor-made to address their unique challenges, thereby positively impacting their ADL and IADL.

Following those references, understanding the potential impact of health insurance reform on the physical abilities of individuals with disabilities is critical, especially concerning ADLs and IADLs. This intersection between health policy reform and its impact on demographics has major implications for public health and social well-being (5). Although the primary goal of this policy is to revolutionize the accessibility and affordability of healthcare services across the country, its specific impact on the functional abilities of individuals with disabilities remains underexplored.

This study aims to bridge this gap by conducting a comprehensive investigation of outcomes related to daily life activities and overall body function before the implementation of BPJS and one year after the implementation of health insurance policy changes. By understanding the impact of health insurance reform on the physical abilities of individuals with disabilities, particularly in the context of ADL and IADL, we aim to contribute valuable insights that can inform evidence-based policies and hopefully encourage the creation of more inclusive programs and equitable access to health for PwD in Indonesia.

DOI 10.34011/icihcce.v6i2.298

METHODS

Case Selection:

This study utilized secondary data extracted from the Indonesian Family Life Survey (IFLS), an ongoing longitudinal socio-economic and health survey. The survey covers approximately 83% of the Indonesian population through a sample of households. It comprehensively collects data on respondents, their families, households, communities, and the health and education facilities they access. The initial wave (IFLS1) was conducted in 1993, and the subsequent wave (IFLS2) aimed to re-interview the same respondents four years later. A follow-up survey (IFLS2+) in 1998 focused on 25% of the sample, assessing the direct impact of the economic and political crisis in Indonesia. IFLS3 was included in the full sample in 2000.

For this research, the latest available data, closely corresponding to the period before the implementation of BPJS, was drawn from IFLS4 (conducted at the end of 2007 and early 2008). Additionally, data from IFLS5 (collected at the end of 2014 and the beginning of 2015) was utilized. The analysis involved both sets of households and IFLS splits, totaling 16,204 households and 50,148 individuals interviewed. To narrow the focus to individuals with physical disabilities, the researchers refined the data by selecting 2,296 disabled individuals from IFLS4 and 3,463 disabled individuals from IFLS5.

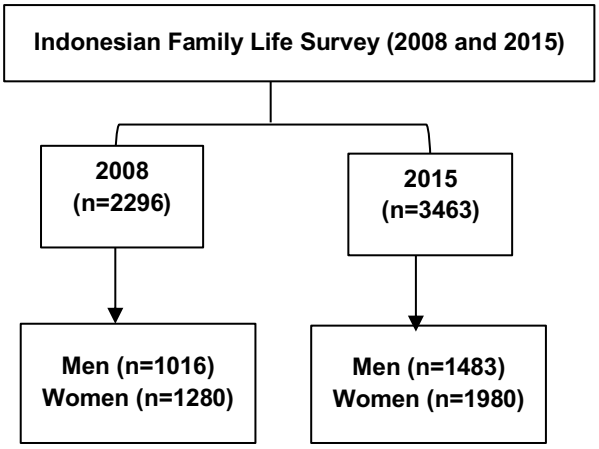

Figure 1: Participants

Measurement of Physical Abilities:

The dependent variable in the study is physical abilities, characterized by the capability to perform ADL (Activities of Daily Living) and IADL (Instrumental Activities of Daily Living). Meanwhile, the independent variables include General Characteristics (age, gender, marital status, education level, and living residence) and Health Status (health condition, insurance status). These variables are instrumental in representing demographic and socioeconomic characteristics.

Operational Definition of Physical Ability:

Physical Ability, in the context of this study, refers to an individual's capacity to independently perform a range of daily tasks, as measured through two key sets of indicators: Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL).

DOI 10.34011/icihcce.v6i2.298

Activities of Daily Living (ADL):
ADL encompasses fundamental daily tasks that directly relate to an individual's personal care and immediate environment. The following 14 activities are considered ADL indicators:
1. Conveying a weighty burden for 20 meters.
2. Drawing a bucket of water from a well.
3. Strolling for 1-5 kilometers.
4. Clearing the house floor yard.
5. Bending, squatting, bowing.
6. Walking across the room.
7. Standing up from sitting on the floor without assistance.
8. Standing up from a sitting position in a seat without assistance.
9. Reaching or extending the arms above shoulder level.
10. Retrieving a small coin from a table.
11. Dressing without assistance.
12. Washing.
13. Getting up.
14. Eating (consuming food without assistance when prepared).

For each ADL exercise, respondents are categorized as '1' if they can independently perform the activity or '0' if they are unable to do so.

Instrumental Activities of Daily Living (IADL):
IADL involves more complex daily tasks that contribute to an individual's independent living and participation in community life. The six IADL indicators include:
1. Looking for personal requirements.
2. Preparing hot meals (preparing ingredients, cooking, and serving food).
3. Taking medication (taking the right dose at the right time).
4. Performing household tasks (housekeeping, doing dishes, making the bed, and organizing the house).
5. Shopping for food (choosing what to buy and paying for it).
6. Managing money (handling bills, keeping track of expenses, or managing assets).

Similar to ADL, respondents are categorized as '1' if they can independently perform the IADL activity or '0' if they are unable to do so.

Statistical Analysis:

Descriptive statistics were utilized to summarize the characteristics of study participants during both the periods before and after the implementation of reforms. Chi-squared tests were utilized to examine variations in demographic and socioeconomic features between the pre-reform and post-reform groups. Logistic regression models were employed to assess the impact of implementing the JKN on the physical abilities of Persons with Disabilities (PwDs), specifically in terms of their ability to perform Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL). Adjusted odds ratios (OR) were computed to control for potential confounding variables, including insurance status and socioeconomic factors.

The use of a logistic regression model is justified by the binary nature of the dependent variable, with respondents categorized as either '0' (unable to perform the activity) or '1' (able to perform the activity). Respondents' abilities to independently carry out ADL and IADL exercises were coded as '0' or '1', a necessary step for logistic regression,

DOI 10.34011/icihcce.v6i2.298

which models the probability of an event occurring (in this context, the ability to perform the activity) given a set of independent variables.

The independent variables in the study encompass age, gender, education, marital status, residence, and health insurance status, all considered potential predictors or determinants of ADL and IADL performance. The logistic regression model estimates the relationship between these independent variables and the log odds of respondents being able to perform each specific activity. Through this analysis, the logistic regression model will yield coefficients, providing insights into the strength and direction of the relationship between each independent variable and the log odds of being able to perform ADL and IADL activities.

Interpreting these coefficients involves considering the odds ratio, which signifies the change in odds of being able to perform the activity associated with a one-unit change in the independent variable. Odds ratios exceeding 1 indicate a positive association, while those below 1 indicate a negative association. Additionally, assessing the statistical significance of the coefficients is crucial for determining the reliability of the observed associations in the analysis.

RESULTS AND DISCUSSION

Table 1 illustrates the characteristics of study participants in 2008 (pre-reform) and 2015 (post-reform) following the implementation of BPJS. The variables examined include Physical Ability (ADL and IADL), Age, Gender, Education, Marital Status, Residence, Health Insurance, and Health Condition.

During both 2008 and 2015, a higher percentage of participants reported improved physical ability (ADL and IADL) in the post-reform period compared to the pre-reform era. This indicates a potential enhancement in physical abilities following the reform. The distribution of age groups remained similar across the two time periods, with the majority of participants falling into the age category of ≥ 40 years. The gender distribution showed minor variations, with slightly more females in both 2008 and 2015.

There was a shift in the distribution of education levels. In 2015, a higher percentage of participants had university and above education compared to 2008, accompanied by a decrease in participants with elementary school and middle school education. The proportion of married participants slightly decreased in 2015, while the percentage of participants with other marital statuses increased.

Most participants in both 2008 and 2015 resided in urban areas, but there was a notable decrease in rural participants in 2015. Additionally, a significant increase was observed in the percentage of participants with health insurance in 2015 compared to 2008.

The distribution of health conditions underwent changes, with a decrease in the percentage of healthy participants and an increase in the percentage of unhealthy participants in 2015. The observed changes in education, marital status, residence, health insurance, and health condition suggest potential impacts of the reform.

DOI 10.34011/icihcce.v6i2.298

Table 1: Characteristics of Study Participants in 2008 and 2015

Variables	Categories	2008 (Pre-Reform)		2015 (Post-Reform)	
		N = 2296		N = 3463	
		N	%	N	%
Physical Ability (ADL)	Good	2046	89.1	3281	94.7
	Bad	250	10.9	182	5.3
Physical Ability (IADL)	Good	2000	87.1	3109	89.8
	Bad	296	12.9	354	10.2
Age (Years)	18-29	556	24.2	859	24.8
	30-39	418	18.2	715	20.6
	≥ 40	1322	57.6	1889	54.5
Gender	Male	1016	44.3	1483	42.8
	Female	1280	55.7	1980	57.2
Education	Elementary school	690	30.1	972	28.1
	Middle school	465	20.3	461	13.3
	High school	669	29.1	1014	29.3
	University and above	472	20.6	1016	29.3
Marital Status	Married	1604	69.9	2317	66.9
	Others*	692	30.1	1146	33.1
Residence	Urban	2050	89.3	3400	98.2
	Rural	246	10.7	63	1.8
Health Insurance	Yes	870	37.9	1918	55.4
	No	1426	62.1	1545	44.6
Health Condition	Healthy	1690	73.6	2327	67.2
	Unhealthy	606	26.4	1136	32.8

Table 2 demonstrated noteworthy connections between demographic and socioeconomic factors and the levels of physical ability among the participants in the 2008 study. The data indicated a substantial correlation between age groups and physical ability levels. Notably, individuals aged 40 and above exhibited elevated levels of both Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) abilities compared to their younger counterparts.

A statistically significant correlation was found between age and both ADL and IADL abilities ($p < 0.001$). The percentage of individuals with below-average ADL and IADL abilities tended to increase with age.

Marital status exhibited a significant association with both ADL ($p = 0.032$) and IADL ($p = 0.007$) abilities. Those categorized as 'Others' (separated, single, divorced, widow/er, cohabitate) had a higher percentage of below-average abilities in both ADL and IADL compared to the married group.

DOI 10.34011/icihcce.v6i2.298

Gender showed a significant association with ADL abilities (p = 0.009) but not with IADL abilities (p = 0.618). The percentage of males with below-average ADL abilities was higher compared to females.

No significant association was observed between health conditions and both ADL (p = 0.363) and IADL (p = 0.407) abilities. Insurance status, however, demonstrated a significant association with both ADL and IADL abilities (p < 0.001 for ADL, p = 0.119 for IADL). Individuals without insurance had a higher percentage of below-average abilities in both ADL and IADL compared to those with insurance.

Education level exhibited a significant association with both ADL and IADL abilities (p < 0.001 for ADL, p = 0.431 for IADL). Individuals with lower education levels tended to have a higher percentage of below-average abilities in both ADL and IADL.

Residence showed a significant association with IADL abilities (p < 0.001) but not with ADL abilities (p = 0.178). Individuals in rural areas had a higher percentage of below-average IADL abilities compared to those in urban areas.

Table 2: Relationship Between Physical Ability and General Characteristics in 2008 (N=2296)

Variables 2008	ADL					IADL				
	-Average		+Average		*p* ‡	-Average		+Average		*p* ‡
	N	%	N	%		N	%	N	%	
Age (Years)					<.001					<.001
18-29	100	18.0	456	82.0		141	25.4	415	74.6	
30-39	78	18.7	340	81.3		93	22.2	325	77.8	
≥40	72	5.4	1250	94.6		62	4.7	1260	95.3	
Marital Status					0.032					0.007
Married	160	10.0	1444	90.0		187	11.7	1417	88.3	
Others*	90	13.0	602	87.0		109	15.8	583	84.2	
Gender					0.009					0.618
Male	130	12.8	886	87.2		127	12.5	889	87.5	
Female	120	9.4	1160	90.6		169	13.2	1111	86.8	
Health Condition					0.363					0.407
Unhealthy	60	9.9	546	90.1		84	13.9	522	86.1	
Healthy	190	11.2	1500	88.8		212	12.5	1478	87.5	
Insurance Status					<.001					0.119
No Insurance	182	12.8	1244	87.2		196	13.7	1230	86.3	
Have Insurance	68	7.8	802	92.2		100	11.5	770	88.5	
Education					<.001					0.431
Elementary	74	10.7	616	89.3		86	12.5	604	87.5	
Junior High School	26	5.6	439	94.4		51	11.0	414	89.0	
Senior High School	101	15.1	568	84.9		93	13.9	576	86.1	
College/ University	49	10.4	423	89.6		66	14.0	406	86.0	

DOI 10.34011/icihcce.v6i2.298

Residence	Urban	217	10.6	1833	89.4	0.178	286	14.0	1764	86.0	<.001
	Rural	33	13.4	213	86.6		10	4.1	236	95.9	

‡ Chi-square test; *Separated, Single, Divorced, Widow/er, Cohabitate

Table 3 reveals that the p-values for both ADL and IADL were below 0.001, indicating a statistically significant correlation between age and physical capability. Notably, with advancing age, there was a proportional decrease in the percentage of individuals exhibiting above-average physical ability. Similarly, in terms of marital status, the p-values for both ADL and IADL were less than 0.001, pointing to a significant correlation. Married individuals consistently displayed a higher percentage of above-average physical ability compared to their unmarried counterparts.

Regarding gender and IADL, the p-value was 0.031, signifying a statistically significant association. Specifically, females demonstrated a higher percentage of above-average physical ability in the context of IADL compared to males. However, this association was not observed in the context of ADL. The p-values for both ADL and IADL were below 0.001 when examining the association with health conditions. Healthy individuals exhibited a notably higher percentage of above-average physical ability compared to those with reported health issues.

In the analysis of insurance status, both ADL and IADL showed p-values below 0.001, indicating a significant association. Individuals with insurance consistently showed a higher percentage of above-average physical ability compared to those without insurance coverage. The p-values for both ADL and IADL were below 0.001 when considering the association with education. As the level of education increased, there was a corresponding increase in the percentage of individuals with above-average physical ability.

In contrast, the p-value for residence in the context of IADL was 0.135, suggesting a non-significant association. It seems that there is no statistically significant difference in the percentage of individuals with above-average physical ability between urban and rural residences.

Table 3: Relationship Between Physical Ability and General Characteristics in 2015 (N=3463)

2015		**ADL (n=3463)**					**IADL (n=3463)**				
		-Average		**+Average**		***p* ‡**	**-Average**		**+Average**		***p* ‡**
		N	**%**	**N**	**%**		**N**	**%**	**N**	**%**	
Age (Years)						<.001					<.001
	18-29	13	1.5	846	98.5		65	7.6	794	92.4	
	30-39	9	1.3	706	98.7		28	3.9	687	96.1	
	≥40	160	8.5	1729	91.5		261	13.8	1628	86.2	
Marital Status						<.001					<.001
	Married	83	3.6	2234	96.4		165	7.1	2152	92.9	
	Others*	99	8.6	1047	91.4		189	16.5	957	83.5	

DOI 10.34011/icihcce.v6i2.298

Gender			0.0			0.031				0.548
	Male	64	4.3	1420	95.7		157	10.6	1327	89.4
	Female	118	6.0	1861	94.0		197	10.0	1782	90.0
Health Condition						<.001				<.001
	Unhealthy	133	11.7	1003	88.3		209	18.4	927	81.6
	Healthy	49	2.1	2278	97.9		145	6.2	2182	93.8
Insurance Status										<.001
	No Insurance	138	8.9	1407	91.1		246	15.9	1299	84.1
	Have Insurance	44	2.3	1874	97.7		108	5.6	1810	94.4
Education						<.001				<.001
	Elementary	95	9.8	877	90.2		171	17.6	801	82.4
	Junior High School	18	3.9	443	96.1		41	8.9	420	91.1
	Senior High School	55	5.4	959	94.6		113	11.1	901	88.9
	College/ University	14	1.4	1002	98.6		29	2.9	987	97.1
Residence										0.135
	Urban	175	5.1	3225	94.9		344	10.1	3056	89.9
	Rural	7	11.1	56	88.9		10	15.9	53	84.1

Analyzing Alterations in Physical Capabilities Among People with Disabilities (Pre and Post BPJS Implementation)

This study focused on examining the connection between socioeconomic factors and the physical capabilities of individuals with physical disabilities, as indicated by the multivariable logistic model in Table 4. The primary aim was to evaluate whether there was an improvement in the performance of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) before and after the implementation of BPJS.

Age Distribution:

Significant enhancements in physical abilities for both ADL and IADL were observed among individuals aged 18-29 and 30-39 in 2015 compared to 2008. Notably, participants aged 40 and above demonstrated consistent physical abilities across both periods.

Marital Status:

Individuals classified under the "Others" marital status (including Separated, Single, Divorced, Widow/er, Cohabitate) exhibited improved physical abilities for both ADL and IADL in 2015, suggesting a positive association between diverse marital statuses and enhanced functional capabilities.

DOI 10.34011/icihcce.v6i2.298

Gender Disparities:

Females showed improved ADL abilities in 2015, with no significant change noted in IADL abilities, highlighting gender-specific variations in the impact of the BPJS program.

Health Condition:

In 2015, individuals classified as unhealthy demonstrated significantly improved ADL and IADL abilities compared to 2008, underscoring the program's potential to positively influence the functional capabilities of those with pre-existing health conditions.

Insurance Coverage:

Possession of health insurance was linked to enhanced ADL and IADL abilities in 2015, emphasizing the crucial role of insurance coverage in augmenting the physical capacities of individuals with disabilities

Educational Attainment:

Participants with elementary and junior high school education levels exhibited improved physical abilities in 2015 for both ADL and IADL, while those with college/university education levels maintained stable physical capacities.

Residential Disparities:

Rural residents experienced increased ADL abilities in 2015, accompanied by a decrease in IADL abilities, whereas urban residents sustained consistent physical capacities. This suggests potential regional nuances in the program's impact.

DOI 10.34011/icihcce.v6i2.298

Table 4. Relationships of Sociodemographic Variables with the Capacity for Performing ADL and IADL in Pre-Reform (2008) and Post-Reform (2015) Eras

VARIABLES	2008						2015					
	ADL			IADL			ADL			IADL		
	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value	OR	95% CI	p-value
Age												
18-29 years old	0.27	0.19 - 0.39	<.001	1.19	0.88 - 1.60	0.261	6.02	3.40 - 10.66	<.001	1.96	1.47 - 2.60	<.001
30-39 years old	0.24	0.17 - 0.35	<.001	6.91	5.02 - 9.49	<.001	7.25	3.68 - 14.28	<.001	3.93	2.64 - 5.87	<.001
≥ 40 years old	1.00			1.00			1.00			1.00		
Marital Status												
Married	1.00			1.00			1.00			1.00		
Others*	1.35	1.03 - 1.77	0.033	1.42	1.09 - 1.83	0.007	2.55	1.88 - 3.44	<.001	2.58	2.06 - 3.22	<.001
Gender												
Male	1.00			1.00			1.00			1.00		
Female	0.71	0.54 - 0.91	0.009	1.06	0.83 - 1.36	0.618	1.41	1.03 - 1.92	0.032	0.93	0.75 - 1.17	0.548
Health Condition												
Unhealthy	1.00			1.00			1.00			1.00		
Healthy	0.87	0.64 - 1.18	0.363	1.12	0.86 - 1.47	0.407	6.17	4.41 - 8.63	<.001	3.39	2.71 - 4.25	<.001
Insurance Status												
No Insurance	1.00			1.00			1.00			1.00		
Have Insurance	1.73	1.29 - 2.31	<.001	1.23	0.95 - 1.59	0.119	4.18	2.96 - 5.91	<.001	3.17	2.50 - 4.02	<.001
Education												
Elementary	2.03	1.28 - 3.22	0.003	1.16	0.80 - 1.67	0.441	0.13	0.07 - 0.22	<.001	0.14	0.92 - 0.21	<.001
Junior High School	0.68	0.49 - 0.93	0.017	0.88	0.64 - 1.21	0.434	0.34	0.17 - 0.69	0.003	0.30	0.19 - 0.49	<.001
Senior High School	1.04	0.71 - 1.52	0.852	0.88	0.62 - 1.24	0.451	0.24	0.13 - 0.44	<.001	0.23	0.15 - 0.35	<.001
College/ University	1.00			1.00			1.00			1.00		
Residence												
Urban	1.00			1.00			1.00			1.00		
Rural	1.31	0.88 - 1.94	0.179	0.26	0.14 - 0.49	<.001	2.30	1.04 - 5.13	0.041	1.67	0.85 - 3.33	0.14

*)Separated, Single, Divorced, Widow/er, Cohabitate

DOI 10.34011/icihcce.v6i2.298

In this research, we explored the correlation between socioeconomic factors and the physical capabilities of individuals with disabilities, specifically focusing on the performance of activities of daily living (ADL) and instrumental activities of daily living (IADL) before and after the implementation of BPJS. In summarizing the findings, the results reveal intriguing changes in the relationships between different demographic and socioeconomic variables and the ability to perform ADL and IADL over the studied years.

Our analysis identified a noteworthy shift in the influence of age dynamics on physical abilities. In 2008, individuals aged 18–29 and 30–39 demonstrated significantly lower odds of performing ADL and IADL compared to those aged 40 or older. However, by 2015, this trend had reversed, with younger age groups now showing significantly higher odds of performing both ADL and IADL compared to their older counterparts. Although the specific reasons for this observed change are not explicitly provided in the data, potential explanations could be related to increased health awareness and adoption of healthier behaviors among younger individuals, as suggested by general trends in health and disability research (6)

Technological advancements and improved access to assistive devices may have contributed to enhanced physical abilities in younger individuals with disabilities. The availability of tools and devices facilitating daily activities could explain the reversal in trends. Changes in rehabilitation practices and interventions over time might have benefited younger individuals more, leading to improved physical capabilities (7). Additionally, shifts in societal attitudes toward disability and supportive policy changes could positively impact the physical abilities of younger individuals, emphasizing the importance of accessibility and inclusivity in society (8).

Consistently, individuals with insurance exhibited significantly higher odds of performing ADL and IADL in both 2008 and 2015. This underscores the crucial role of insurance coverage in facilitating improved physical abilities among individuals with disabilities (9). Having insurance increases the likelihood of regular access to healthcare services, including preventive care, rehabilitation, and assistive devices, which contribute to maintaining and enhancing physical abilities (10,11). Timely access to medical interventions and treatments, often covered by insurance, can prevent or manage health conditions affecting physical abilities (4,12).

A notable reversal was observed in the association between education levels and physical abilities. In 2008, individuals with elementary education had higher odds of performing ADL and IADL compared to those with college/university education. However, by 2015, individuals with elementary education exhibited significantly lower odds of performing ADL and IADL compared to their more highly educated counterparts. This unexpected shift raises questions about the evolving role of education in shaping the physical capabilities of individuals with disabilities. Improvements in access to higher education, changes in health awareness, and advancements in healthcare interventions and assistive technologies may have contributed to these observed differences (13–15).

Throughout both periods, individuals with marital status categorized as "Others" consistently showed higher odds of performing ADL and IADL compared to their married counterparts. This suggests that non-traditional marital statuses may play a role in shaping the physical abilities of individuals with disabilities (16).

In 2008, females exhibited lower odds of performing ADL compared to males, while no significant association was found for IADL. However, in 2015, females had higher odds of performing ADL, though no significant association was observed for IADL. The evolving gender disparities in the ability to perform daily activities warrant further exploration and may reflect changing societal norms and roles, as well as changes in healthcare access and utilization between 2008 and 2015 (17,18).

While no significant association was found between residence and ADL/IADL in 2008, a notable change emerged by 2015. Individuals residing in rural areas displayed

DOI 10.34011/icihcce.v6i2.298

significantly higher odds of performing ADL and lower odds of performing IADL compared to those in urban areas. This shift suggests that geographical factors may have an increasingly significant impact on the physical abilities of individuals with disabilities in later years (19).

Limitation and Future Directions

These studies faced limitations in establishing causal relationships or monitoring changes over an extended period. They heavily relied on data from a specific source (IFLS data), and the accuracy and comprehensiveness of the information hinged on the quality and methodology of the data collection process. The analyses concentrated on select socioeconomic factors like education and marital status, neglecting more nuanced aspects that could impact physical abilities. While insurance coverage was examined, there was a lack of extensive exploration into healthcare access, utilization patterns, or the quality of care received, crucial determinants of physical abilities. The studies only spanned seven years (2008 to 2015), potentially overlooking broader societal shifts or policy changes beyond this timeframe that could influence observed associations. The focus on Indonesia may limit generalizability to other cultural or healthcare contexts.

Future research should utilize longitudinal studies to comprehensively monitor changes in physical abilities over an extended period, enhancing our understanding of trends and potential causal relationships. Complementing quantitative data with qualitative research can provide deeper insights into the lived experiences of individuals with disabilities, offering a more nuanced perspective on various aspects of physical abilities. A thorough analysis of the healthcare system, considering factors such as quality, accessibility, and the availability of rehabilitation services, is essential to uncover additional determinants influencing the physical abilities of individuals with disabilities.

Furthermore, a more profound investigation into the impact of specific healthcare and social policies on the physical capabilities of individuals with disabilities is necessary. Assessing the effectiveness of interventions aimed at improving healthcare accessibility and support services would be valuable. Lastly, exploring broader issues related to the inclusivity of individuals with disabilities in global health initiatives is crucial to ensure that policies address their diverse needs, fostering equitable access to healthcare and support services on a global scale.

CONCLUSION

The implementation of Indonesia's National Health Insurance Program (JKN) following health system reforms has been linked to improved physical abilities and overall well-being among individuals with disabilities (PwDs). This study underscores the significance of healthcare services that are accessible and inclusive for PwDs and highlights the positive effects of changes in health insurance policies in addressing their specific needs.

The study reveals that insurance status plays a pivotal role in determining the physical abilities of PwDs, underscoring the importance of ensuring equitable access to healthcare coverage. It is imperative for policymakers and stakeholders to persist in prioritizing policies and initiatives that enhance the well-being and quality of life of PwDs in Indonesia.

DOI 10.34011/icihcce.v6i2.298

These research findings contribute valuable insights into the impact of health system reforms on vulnerable populations, emphasizing the necessity for evidence-based policies that foster inclusivity and equity in healthcare.

ACKNOWLEDGEMENTS

The author(s) declared no potential conflicts of interest in the authorship and/or publication of this article.

REFERENCES

1. P2PTM Kemenkes RI. Kebutuhan Tidur sesuai Usia [Internet]. P2Ptm.Kemkes.Go.Id. 2018. Available from: http://p2ptm.kemkes.go.id/infograpic-p2ptm/obesitas/kebutuhan-tidur-sesuai-usia
2. Disability in Indonesia: What can we learn from the data? Australia Indonesia Partnership for Economic Governance MONASH BUSINESS SCHOOL. 2017;
3. Moertiningsih Adioetomo S, Mont D. PERSONS WITH DISABILITIES IN INDONESIA Empirical Facts and Implications for Social Protection Policies. 2014 [cited 2024 Jan 25]; Available from: www.tnp2k.go.id
4. Murthy Gudlavalleti VS. Challenges in Accessing Health Care for People with Disability in the South Asian Context: A Review. [cited 2024 Jan 25]; Available from: www.mdpi.com/journal/ijerph
5. Century I of M (US) C on A the H of the P in the 21st. Understanding Population Health and Its Determinants. 2002 [cited 2024 Jan 26]; Available from: https://www.ncbi.nlm.nih.gov/books/NBK221225/
6. Raghupathi V, Raghupathi W. The influence of education on health: An empirical assessment of OECD countries for the period 1995-2015. Arch Public Heal [Internet]. 2020 Apr 6 [cited 2024 Jan 26];78(1):1–18. Available from: https://archpublichealth.biomedcentral.com/articles/10.1186/s13690-020-00402-5
7. Wade DT. What is rehabilitation? An empirical investigation leading to an evidence-based description. Clin Rehabil [Internet]. 2020 May 1 [cited 2024 Jan 26];34(5):571–83. Available from: https://doi.org/10.1177/0269215520905112
8. Babik I, Gardner ES. Factors Affecting the Perception of Disability: A Developmental Perspective. Front Psychol [Internet]. 2021 Jun 21 [cited 2024 Jan 26];12. Available from: /pmc/articles/PMC8255380/
9. Dassah E, Aldersey HM, McColl MA, Davison C. Health care providers' and persons with disabilities' recommendations for improving access to primary health care services in rural northern Ghana: A qualitative study. PLoS One [Internet]. 2022 Sep 1 [cited 2024 Jan 26];17(9). Available from: /pmc/articles/PMC9481012/
10. Uninsurance I of M (US) C on the C of. Effects of Health Insurance on Health. 2002 [cited 2024 Jan 26]; Available from: https://www.ncbi.nlm.nih.gov/books/NBK220636/
11. CMS. Modernizing Health Care to Improve Physical Accessibility: A Primer for Providers.
12. Persson H, Åhman H, Yngling AA, Gulliksen J. Universal design, inclusive design, accessible design, design for all: different concepts—one goal? On the concept of accessibility—historical, methodological and philosophical aspects. Univers Access Inf Soc. 2015 Nov 13;14(4):505–26.

DOI 10.34011/icihcce.v6i2.298

13. Bulat J, Hayes A, Macon W, Ticha R, Abery B. School and Classroom Disabilities Inclusion Guide for Low- and Middle-Income Countries. 2017 Jan 16 [cited 2024 Jan 26]; Available from: http://www.rti.org/publication/school-and-classroom-disabilities-inclusion-guide-low-and-middle-income-countries
14. Hayes AM, Bulat J. Disabilities Inclusive Education Systems and Policies Guide for Low- and Middle-Income Countries. 2017 Jul 28 [cited 2024 Jan 26]; Available from: https://www.ncbi.nlm.nih.gov/books/NBK554622/
15. Lauchlan F, Boyle C. Is the use of labels in special education helpful? Support Learn. 2007;22(1):36–42.
16. Thomas PA, Liu H, Umberson D. Family Relationships and Well-Being. Innov Aging [Internet]. 2017 Nov 1 [cited 2024 Jan 26];1(3). Available from: /pmc/articles/PMC5954612/
17. Padavic I, Ely RJ, Reid EM. Explaining the Persistence of Gender Inequality: The Work–family Narrative as a Social Defense against the 24/7 Work Culture*. Adm Sci Q. 2020 Mar 1;65(1):61–111.
18. Shang B. Tackling Gender Inequality: Definitions, Trends, and Policy Designs. IMF Work Pap [Internet]. 2022 Dec 2 [cited 2024 Jan 26];2022(232). Available from: https://www.elibrary.imf.org/view/journals/001/2022/232/article-A001-en.xml
19. Von Reichert C, Berry EH. Rural-urban patterns of disability: The role of migration.

DOI 10.34011/icihcce.v6i2.298