The Impact on Healthcare System Reform of National Health Insurance on Physical Ability of Disabled People using IFLS Data

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بِسْمِ اللَّـهِ الرَّحْمَـٰنِ الرَّحِيمِ
والصَّلاة وَ الْسَّلام عَلَى أَشْرَف الْمُرْسَلِـيـن ﷺ

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LIST OF ABBREVIATIONS

The following table describes the significance of various abbreviations and acronyms used throughout the thesis.

PwD	People with Disability
BPS	Badan Pusat Statistik/ the Central Bureau of Statistics/ Statistics Indonesia
ADLs	Activities of Daily Living
IADLs	Instrumental Activities of Daily Living
UHC	Universal Health Coverage
JKN	Jaminan Kesehatan Nasional
BPJS Health	Badan Penyelenggara Jaminan Sosial Kesehatan/ Health Social Security Agency
SDG	Sustainable Development Goals
JKN-KIS	National Health Insurance Program-Healthy Indonesia Card
Riskesdas	Riset Kesehatan Dasar/ Basic Health Research
MoH	Ministry of Health
IFLS	The Indonesian Family Life Survey
Susenas	Survey Sosial Ekonomi Nasional/ The National Socioeconomic Survey
PBI	Penerima Bantuan Iuran/ Contribution Assistance Recipients
BPDPK	Badan Penyelenggara Dana Pemeliharaan Kesehatan/ Health Maintenance Fund Organizing Agency
BUMN	Badan Usaha Milik Negara/ Indonesian State-Owned Enterprises

PHB	PERUM HUSADA BHAKTI
PT Askes	Perusahaan Asuransi Kesehatan/ State-owned enterprise that runs healthcare and maternity benefits for civil servants
PJKMM	Penyelenggara Program Jaminan Kesehatan. Masyarakat Miskin/ Medical Coverage Program for Poor People
PJKMU	General Public Health Insurance Program
Askeskin	Asuransi Kesehatan untuk Rakyat Miskin
Jamkesmas	Jaminan Kesehatan Masyarakat/ Social Health Insurance
Jamkesda	Regional Health Insurance

ABSTRACT

The Impact on Healthcare System Reform of National Health Insurance

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Background: Indonesia's number of people with disabilities (PwD) reaches 30.38 million or around 14.2%, based on the National Socio-Economic Survey (SUSENAS), 2018. Most of them face difficulty with activities of daily living (ADLs) and difficulties in performing activities to live independently in a community (IADL). The Indonesian government and MoH worked to reduce this inequality with the implementation of BPJS Health in 2014. However, most existing studies in Indonesia just explore the impact of UHC in general, not specifically mentioned disability. Therefore, the study on accessibility, health outcomes, and health activities, is surprisingly somewhat limited and recent.

Objective: To determine whether there was a positive influence of the National Health Insurance Program (JKN) on body functions and disability conditions of persons with disabilities in Indonesia. In addition, to provide a structure for implementing disability policies to meet the welfare of Persons with Disabilities in Indonesia.

Methods: This study is quantitative research with a cross-sectional design, uses secondary data analysis using the Indonesian Family Life Survey (IFLS) 4 in 2007-2008 and IFLS5 in 2014-2015. The number of people with disabilities as respondents from IFLS 2007 was 2296 people, and IFLS 2008 was 3463 respondents. Analysis of the pre and post health insurance program for BPJS implementation was obtained from the Physical Ability checklist in the Daily Activities and Community Activities section by giving a score for each question that could be answered. The diverseness of the BPJS effect was explored based on socioeconomic statuses, such as area of residence in urban

or rural areas, age, gender, marital status, educational background, and general health condition. Data were examined by binary logistic regression analysis using SPSS version 25.

Results: Overall, there is a significant relationship between insurance status and improvement in the physical abilities of persons with disabilities before and after health system reform in Indonesia. With the existence of BPJS, people with disabilities who have difficulty doing ADL and IADL have 6.16 and 3.4 times more likely to have a healthy general condition than before BPJS was implemented.

Conclusion: The implementation of Health insurance in Indonesia is quite good but needs improvement. For Indonesia's future research and policy direction, the GoI must address health inequalities for individuals with disabilities. By increasing access and health services, increasing disability data to support decision making, strengthening the capacity of health workers and human services, especially in the field of orthotic prosthetics in rural areas, the quality of UHC in Indonesia can be achieved well. In addition, it would be beneficial to provide an explicit public health program related to disability inclusion, having automatic participation for all citizens through simplification and refocusing of BPJS coverage.

I. INTRODUCTION

1.1   Background

Persons with disabilities (PwD) have equal freedom and obligations as other citizens in Indonesia. PwD are characterized by individuals who experience problems with their physical, intellectual, mental, and/or sensory ability, causing difficulties to interact with the environment. Therefore, many disabled people have challenges participating fully and effectively in the community compared to other normal people. This statement is contained in Law Number 8 of 2016 concerning equal rights for persons with disabilities. Furthermore, there were 30.38 million people or 14.2% of the total Indonesian population with disabilities. This data was obtained from an inter-census population survey conducted by the Central Statistics Agency (BPS) in 2017. (BPS-Indonesia, 2017)

People who lose physical function have a high risk of experiencing difficulties in performing activities of daily living (ADLs), such as eating, bathing, dressing, or using the bathroom without the help of others. Many researchers are investigating ways to improve physical function to enable disabled people (especially the elderly over 40 years) to recover and work independently at home, without the help of others. Physical activity takes part as an essential role in maintaining health, well-being and quality of life. According to the Guidelines for Physical Activity for Americans, 2nd

edition, regular physical activity can help control weight, improve mental health, and reduce the risk of premature death, such as heart disease, diabetes, and cancers. Routine physical activity can also improve mental health by reducing levels of anxiety or depression. Physical activity can also support activities of daily living and their independence for disabilities. (Americans, 2018)

Compared to people without disabilities, disabled people are twice as likely to be inactive. This evidence also suggests an association between physical activity and positive health outcomes in adults with disabilities. Health insurance should be able to overcome problems that arise due to the inability of disabled people to carry out daily activities.(WHO, 2011) Health insurance must provide special programs for persons with disabilities where each health service allows participants to increase their capacity to carry out activities at home. For example, adaptation training program with special aids for people with disabilities in the upper or lower limbs.

The Indonesian government continues to strive to achieve Universal Health Coverage (UHC). The government and the people of Indonesia are committed to achieving UHC so that everyone has access to comprehensive and quality health services without financial barriers (Pratiwi et al., 2021). Health services are carried out comprehensively by prioritizing primary health services. In early 2014, the Government of Indonesia issued social health insurance for all Indonesians, namely, National Health Insurance—Jaminan Kesehatan Nasional (JKN).

However, there was a misunderstanding in interpreting UHC. The definition of JKN is not the same as universal coverage, meaning that even though all Indonesians have become JKN participants, it does not mean that they have achieved universal health coverage. In fact, if the entire population has access to comprehensive and quality health services, both promotive, preventive, early detection, treatment, rehabilitative and palliative efforts, without cost constraints, then it is said that Indonesia has achieved Universal Health Coverage. This concept is much more complex than just participation in health financing insurance or JKN. Universal Health Coverage is also closely related to the Sustainable Development Goals (SDGs), which targets that by 2030 there will be no one who does not enjoy the results of sustainable development (no one is left behind).

For the first time, National Health Insurance Program (JKN) was implemented by The Government of Indonesia in 2014. The Indonesian government wants to ensure that all Indonesians can be protected by comprehensive, fair, and equitable health insurance through the presence of the National Health Insurance Program-Healthy Indonesia Card (JKN-KIS) organized by Badan Penyelenggara Jaminan Sosial Kesehatan (BPJS) Health.(Deloitte, 2019) This health program includes promotive, preventive, curative, rehabilitative and palliative health services. The ambition is to provide adequate health quality service by ensuring that users do not experience financial difficulties. Furthermore, at the 2019 WHO Executive Board Session,

Indonesia has agreed to achieve the 13th WHO General Work Program by 2023 (WHO, 2011). The targets include one billion people benefiting from UHC, being protected from health emergencies, and enjoying better and healthier lives (WHO, 2011).

As we know, there are three outcomes of the universal health coverage target: First, increased access to essential health services. Second, the reduction in the number of people who experience financial difficulties for health. Third, increasing access to drugs, vaccines, diagnostics, and essential medical devices in primary health care (Bank, 2021). The efforts made over the last decade in health development in Indonesia, as an integral part of national development, align with the efforts proclaimed in the WHO Work Program. To make UHC well established like other developed countries, the Government of Indonesia established the National Health Insurance (JKN/KIS) program on January 1, 2014. Based on Law Number 40 of 2004 concerning National Social Security, this health program is organized by the Social Security Administering Agency (BPJS) Health, which aims to provide health services to the community while providing financial protection. The number of BPJS Health participation coverage in Indonesia also continues to increase from year to year (Hyeseung Wee, 2019).

Based on data in October 2020, the total coverage of BPJS Health program participants have reached 223.4 million people, consisting of Contribution Assistance

Recipients (PBI) from the central government as much as 43.3% of the total participants, 16% of participants financed by local governments. The remaining 40.7% are participants who pay contributions independently (BPJS-KESEHATAN, 2020). The main focus on the concept of UHC is not solely focused on the number of residents who have become participants in the BPJS Health program. However, most importantly, there is an increase in participants' access to health services, and they have financial protection when they need health services. During the nearly seven years of implementing the JKN program, many successes and problems have occurred in this area. Persons with disabilities are also included in the implementation of health social security by BPJS Health. The main goal is to give them access to their health needs and get treated fairly. So far, many studies and literature sources have examined health insurance specifically for persons with disabilities. However, the results of this study should examine matters related to improving social functions, especially regarding central and local government policies that will enforce the implementation of particular health insurance for persons with disabilities.

Based on data from Riskesdas in 2007, people over 15 years old have a "very severe" disability by 1.8%, and a "severe" disability by 19.5%. The highest percentage is having trouble seeing at long distances or seeing up close and a problem with walking in far distances (Besral-(Editor), 2019). Riskesdas data in 2013 showed an increase in moderate to very severe disability by 11% (Lisa Cameron, 2017). The

highest percentage is having trouble walking long distances and standing for a long time. The ability to see is the most significant problem in Riskesdas 2007. The results from Susenas data in 2012 and Riskesdas data in 2013 stated that the prevalence of disability increased along with age increase (Lisa Cameron, 2017). Their results also found that the prevalence of disability in rural areas was higher than in urban areas. They also state that the prevalence of persons with disabilities in women was higher than in men.

In conclusion, the prevalence and mean score of disability tend to be higher in people living in rural areas with a higher age group. Most of them have female gender with a low level of education, not having a job, or working as farmers or fishers. Most of them only have the lowest ownership index. Only 37.85% of persons with disabilities are employed, and people with disabilities work mainly in the agriculture sector.

Since 2007 data on persons with disabilities has been collected through the Basic Health Research (Riskesdas) held by the Ministry of Health (MoH). Riskesdas was collecting data for disability in the age group of 15 years and over (Ismandari, 2019). They measure the condition of disability based on the respondent's assessment of the level of difficulty they experience (e.g., in performing bodily functions or performing individual and social activities). There are approximately 30.38 million Indonesians with disabilities (Ismandari, 2019). Usually, people with disabilities

experience more than one type of disability, followed by limitations in seeing and walking/climbing stairs. However, based on the 2010 Population Census, over ten years experienced difficulties by 4.74%. With the highest type of difficulty, namely the difficulty of seeing. The severe difficulty is experienced when walking or climbing stairs due to problems with poor memory.

1.2   Objectives

National Health Insurance Program (JKN) was implemented by The Government of Indonesia in 2014. The purpose of this study was to examine and understanding of the physical ability of disabled persons, pre and post policy implementation.

The main objectives and details of this study are as follows:

1. To describe the frequency and examine the functional status of disabled people in carrying out daily activities before and after the implementation of JKN among vulnerable populations (people with disabilities) in 2008 and 2015 in Indonesia and

2. To provide a structure for the implementation of disability policies to fulfill the welfare of disabled people in Indonesia.

1.3   Research Questions

Firstly, the evidence obtained in this study also aims to determine is there a positive effect of the National Health Insurance (JKN) Program on the body functions and Disability Conditions of Indonesian citizens with disabilities. Secondly, what is the effect of National Health Insurance (JKN) Program on Body Functions and Disability Condition of Indonesian citizens? In addition, to provide a structure for implementing disability policies to fulfill the welfare of People with Disability in Indonesia.

1.4 Hypothesis

This study hypothesized that if disabled people have National Health Insurance (BPJS), they will have better physical functions and disability conditions. In addition, this study explores whether government policy reforms related to BPJS significantly affect the prevalence estimates across sociodemographic groups or not. For example, age, gender, marital status, place of residence, general health conditions, education, insurance status.

II. LITERATURE REVIEW

2.1 History of Healthcare System in Indonesia

Medical care protection in Indonesia has existed since the Dutch provincial period. Besides, after freedom, in 1949, after the acknowledgement of power by the Dutch Government, endeavors to guarantee the requirement for wellbeing administrations for the local area, particularly government workers and their families, proceeded. The Minister of Health, who was in office at that point, proposed a plan to quickly execute a general health care coverage program, which started to be carried out in many created and quickly agricultural nations. Around then, his enrollment just included government employees and their relatives. (BPJS-KESEHATAN, 2020)

In 1968, the government provided Regulation of the Minister of Health Number 1 of 1968 by building up the Health Maintenance Fund Organizing Agency (BPDPK), which manages medical services for state workers, annuity beneficiaries, and their families. Besides, in 1984, BPDPK changed its status from an organization inside the Ministry of Health to a Badan Usaha Milik Negara (BUMN), particularly PERUM HUSADA BHAKTI (PHB), which gave health care coverage to government workers, resigned government workers, veterans, pioneers of freedom, and their relatives. In 1992, PHB changed its status to PT Askes (Persero), arriving at BUMN representatives through the Commercial Askes program. (BPJS-KESEHATAN, 2020)

In 2005, the public authority shared PT Askes with carrying out the medical coverage program for poor people (PJKMM), later known as the Askeskin (Asuransi Kesehatan untuk Rakyat Miskin) program, with an objective of 60 million poor and oppressed individuals whose commitments were paid by the local government. PT Askes likewise made the General Public Health Insurance Program (PJKMU), planned for individuals not covered by Jamkesmas (Jaminan Kesehatan Masyarakat/ Social Health Insurance) or private protection. Over 200 rules/urban areas or 6.4 million individuals had become PJKMU members up to that point. PJKMU is a Regional Health Insurance (Jamkesda) whose administration is given over to PT Askes. (BPJS-KESEHATAN, 2020)

In 2011, The public authority of Indonesia sanctioned the Law on the Social Security Administering Body (BPJS) and designated PT Askes as the coordinator of the government-managed retirement program in the wellbeing area, later PT Askes change into BPJS Health. The progression towards general wellbeing inclusion is considerably more apparent with the authority activity of BPJS Health on January 1, 2014, as a change of PT Askes. In addition, the state is available locally through the National Health Insurance Program-Healthy Indonesia Card (JKN-KIS) coordinated by BPJS Health to guarantee that all Indonesians are ensured by exhaustive, reasonable, and impartial medical coverage. (BPJS-KESEHATAN, 2020)

2.2   Terms of Disability and Related to Disparities

The state of people with handicaps as a weak gathering experience has maltreatments of privileges, particularly the option to acquire admittance to well-being administrations. They have limits in completing everyday exercises brought about by their incapacities. These circumstances influence their capacity to find a new line of work which additionally influences their pay to be restricted. Subsequently, they need medical coverage from the public authority to take care of the expense of therapy and the well-being help they need. The public authority's endeavours to ensure people with handicaps have been contained in different existing laws and guidelines. At first, there was Law Number 4 of 1997 concerning Persons with Disabilities. Presently, due to the new supplanted Law Number 8 of 2016, it follows the necessities of individuals with inabilities. (Associations of Persons with Disabilities Coalition, 2019)

Meaning of Persons with Disabilities, as indicated by Law 8 of 2016, is an individual who encounters physical, scholarly, mental, or potentially tactile constraints in the drawn-out who connects with the climate. They might encounter deterrents and hardships to take an interest entirely and viably with different resident dependent on equivalent privileges. Equal Opportunity is a condition that gives openings and furnishes admittance to Persons with Disabilities to divert their potential in all parts of state and local area organizations. Segregation is any differentiation, avoidance, constraint, badgering, or prohibition dependent on incapacity that has the expectation

or impact of restricting or invalidating the acknowledgement, happiness, or exercise of the privileges of Persons with Disabilities. Generally speaking, incapacity is an advancing idea, and handicap results from collaborations between individuals with limited capacities and mentalities and a climate that impedes their complete and successful interest in the public eye on an equivalent premise with others. (Math et al., 2019)

In light of information from the Behavioral Risk Factor Surveillance System Survey conducted by (Kilmer et al., 2008), health variations are contrasts in well-being results between bunches that reflect a social imbalance. Incapacity rates change by identity, age, sex, and pay, going from 10.4% among Asians to 22.6% among non-Hispanics, 31.3% among American Indians and Alaska Natives. Incapacity rates were more normal among individuals aged 65 years and more than (37.8%) than individuals aged 18 to 44 years (13.4%). Inability rates were marginally higher for ladies than men: 22.4% versus 21.1%. Among individuals acquiring under $15K, 38.8% have an incapacity, while the rate is a lot lower, 16.2% for those procuring $50,000 or more. (Kilmer et al., 2008)

The well-being hole was likewise observed to be tremendous for individuals with incapacities and minorities. US National Health Interview Survey information show that people with restricted versatility and minority status experience more noteworthy well-being incongruities than grown-ups with minority status or

portability, just constraints in the more significant part of the results estimated. (Kilmer et al., 2008)

The most common measures for huge differences are disintegrating well-being, burdensome manifestations, diabetes, stroke, visual debilitation, trouble performing everyday exercises, stoutness, true dormancy, and low work investment. (Jones and Sinclair, 2008) Based on research by (Mahendradhata, 2017) referenced that Health care protection in Indonesia has existed since the Dutch pioneer time. After freedom in 1949, endeavours to guarantee the local area's need of well-being administrations, particularly government employees and their families, proceeded. Around then, the participation just included government employees and their relatives. In 1968, the Government gave Regulation of the Minister of Health Number 1 of 1968 by building up the Health Maintenance Fund Organizing Agency (BPDPK), which directs medical care for state representatives, annuity beneficiaries, and their families.

After some time, the Government gave Government Regulations No. 22 and 23 of 1984. BPDPK likewise changed its status from an organization inside the Ministry of Health to a state-possessed endeavour, which gives medical coverage to government workers, resigned government employees, veterans, pioneers of freedom, and their relatives. In 1992, PHB changed its status to PT Askes (Persero) through Government Regulation No. 6 of 1992. PT Askes (Persero) started to connect with BUMN representatives through the Commercial Askes program. (Thabrany, 2008)

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In January 2005, the Government confided in PT Askes (Persero) to execute the medical coverage program for poor people (PJKMM), which was subsequently known as the Askeskin program, with an objective of 60 million poor and oppressed individuals (whose commitments were paid by the Central Government) based on research by (Sparrow, Suryahadi and Widyanti, 2013). PT Askes (Persero) additionally made the General Public Health Insurance Program (PJKMU), planned for individuals who have not been covered by Jamkesmas, Social Health Insurance, or personal protection (Yunanto, 2019). Over 200 regimes/urban areas or 6.4 million individuals had become PJKMU members up to that point. PJKMU is a Regional Health Insurance (Jamkesda) whose administration is given to PT Askes (Persero).

The progression towards widespread well-being inclusion is much more apparent with the authority activity of BPJS Health on January 1, 2014, as a change from PT Askes (Persero). First, in 2004 the Government gave Law Number 40 of 2004 concerning the National Social Security System (SJSN). Then, in 2011, the Government instituted Law Number 24 of 2011 concerning the Social Security Administering Body (BPJS) and selected PT Askes (Persero) as coordinators of federal retirement aide programs in the well-being area where PT Askes (Persero) was changed to BPJS Health. (Suryahadi, 2014)

Based on (Indonesia, 2019) expressed that through the National Health

Insurance Program-Healthy Indonesia Card (JKN-KIS) coordinated by BPJS Kesehatan, the state is in our middle to guarantee that all Indonesians are ensured by exhaustive, reasonable and impartial medical coverage. Therefore, the Indonesian Government trusts that the improvement of the well-being status of the Indonesian public will accomplish through a good health framework that can ensure the soundness of all residents of this country.

2.3 Impact of National Health Insurance (Jaminan Kesehatan Nasional/ JKN) towards Disabled People

Judging from control factors, such as age, gender, marital status, metropolitan/provincial house, school level, and financial status, people covered by the JKN contribution program were young people. They are bound to reside in a metropolitan region, usually more affluent, have finished advanced education, and reside in a space with more well-being offices contrasted with the uninsured. The results are taken from the late exploration about The Impact of Public Health Insurance on Healthcare Utilization in Indonesia, directed by (Erlangga et al., 2019). In the meantime, people with JKN sponsored were more unfortunate, less inclined to complete advanced education, bound to get cash moves, and living in a space with more minor well-being offices contrasted with the uninsured. Generally, this examination affirms our doubt that the JKN contributory and financed bunches have

various qualities that might impact the choice to get safeguarded and look for care. This present review's discoveries recommend that the JKN program has expanded the likelihood of people looking for short term and ongoing consideration. This effect is more grounded among the contributory gathering, probably from the more well off and more taught populace.

Existing investigations show that most uninsured people in 2007 stayed uninsured in 2014, inferring that the JKN enrollment process was slow. The commitment bunch addresses the investment chosen by every person to join the JKN program. Consequently, the achievement of the JKN program relies upon the elements that impact the local area's choice to partake in the JKN commitment plot. Individuals are bound to take a crack at medical coverage on the off chance that they figure they will utilize the health care coverage, alluded to as an unfavourable choice in the financial writing (Zeckhauser, 1998). Every individual has the best information on whether the protection benefits surpass the costs they pay. Then, at that point, they will decide if they will join protection or not (Tversky and Kahneman, 1974). The commitment gathering can likewise be more proactive in looking for data and treatment and be more mindful of the advantages of the JKN program (thought about an exceptionally far-reaching framework) since they have a more significant level of schooling. Ongoing proof from Indonesia uncovers that protection charges are not the principal obstruct factor in JKN enlistment but instead are bound to be affected by the

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accessibility of well-being administrations and members' absence of protection education (Dartanto et al., 2016).

Most investigations on medical coverage in Indonesia show that the effect of the JKN program is somewhat more huge for inpatients than short term patients. Since ongoing consideration is, for the most part, more costly, the JKN program offers thorough advantages (remembering hospitalization for contracted public and private clinics). Therefore, people are bound to enlist, particularly assuming they see themselves as having a high risk for hospitalization. Although there is a positive effect on participants financed from joint contributions, there is a potential impact of unrest among people who are more affluent in terms of decision-making. Considering that the financed bunch establishes the most extensive extent of the safeguarded populace, appropriations paid by the public authority additionally devour a more significant amount of the JKN financial plan. The present circumstance suggests that common imbalances in government spending on appropriating the poor are not helpful.

The disparity issue deteriorates because the JKN impact is more vigorous in regions with higher well-being offices. As the sponsored bunch is bound to live in country regions with regional well-being offices, we can notice a restricted impact of protection in eliminating obstructions to getting to mind. Protection might facilitate the monetary boundaries related to the expense of clinical consideration (moderateness). Nonetheless, it may not be adequate to eliminate different hindrances

to well-being access, for example, transportation costs (openness) or the accessibility of important centres and clinics (Penchansky and Thomas 1981). Further developing admittance to mind among people in the country and far off regions stays a significant errand for the Indonesian government, which cannot be settled just by giving general health care coverage to all.

As a rule, an individual with a handicap has a low financial status contrasted with a typical society or does not have an incapacity. (Pinilla-Roncancio, 2015) Moreover, she expressed in the examination that individuals with inabilities with low financial status are regularly incapable of meeting their well-being needs. Since the National Health Insurance (JKN) was dispatched in 2014, the Government of Indonesia has extended the commitment sponsorship for oppressed families distinguished by utilization esteem. This standard will arrange oppressed families as proficient because different gatherings finance the enormous utilization esteem. (Anindya et al., 2020)

Perceptions in practically all nations show that families with low or poor financial status have more unfortunate ailments than families with moderate and significant monetary status (Fletcher and Wolfe, 2014; Mills, 2014; Elgar et al., 2015; Pickett and Wilkinson, 2015); Carrieri and Jones, 2017; Linden and Ray, 2017). The contributing variables incorporate ecological elements since helpless families keep an eye on living in infection inclined conditions, for example, close to heaps of trash,

filthy puddles, or in regions with high air contamination. Their lodging conditions are excessively thickly populated; the unfortunate way of life factors incorporate smoking propensities, burning-through less nutritious food varieties, and not practising routinely. In addition, they usually have jobs with high-risk factors such as construction workers, nursery and assembly workers, or small fishermen (Breiman et al., 2015; Goh, Pfeffer and Zenios, 2016; Mberu et al., 2016). Also, infants in low-pay families will generally be brought into the world with substandard physical and mental blessings contrasted with youngsters brought into the world in princely families (Robertson and O'Brien, 2018), so later, the inability rate in the family will increment. Regardless of the significant well-being needs of low-pay families, a considerable lot of these families cannot manage the cost of well-being administrations (Jacobs et al., 2011). Consequently, well-being policymakers do different mediations to assist these families with low monetary status get proper well-being administrations, one of which is giving health care coverage (Tangcharoensathien, Mills and Palu, 2015).

2.4 Feasibility of Indonesia Family Life Survey (IFLS) to Capture Disability Condition in Indonesia

IFLS gives different kinds of individual wellbeing information at the family and local area levels inside different periods. A portion of the longitudinal information contained in the IFLS is financial information (utilization, pay, resources), wellbeing (contraception use, wellbeing status, medical coverage), including schooling and

movement. IFLS information also has work market results that underlie family navigation, remembering moves between relatives and their cooperation for local area exercises. IFLS has data-rich information to be investigated to examine wellbeing, sociologies, and incapacity peculiarities. (Mahendradhata, 2017)

Likewise, other datasets are accessible covering all territories in Indonesia [eg. Indonesian Socio-Economic Survey (SUSENAS)]. In any case, SUSENAS does not give data on good medical coverage status or wellbeing use before 2014. Also, IFLS is the primary Indonesian board informational collection accessible to assess JKN, and it is the one explanation the creator decides to incorporate inside this review (Erlangga et al., 2019). In addition, they clarified that the areas remembered for the IFLS information are more evolved than non-IFLS territories; the discoveries of this review might show the furthest cutoff to the actual effect. JKN has had a restricted effect in the territories of Eastern Indonesia because of the absence of wellbeing offices in immature regions. Therefore, the utilization of the other observational inquiries for future examination ought to be considered before its application. (Anindya et al., 2020)

2.5 Conclusion

The reason for this research is to look at the side effects after the existence of the National Health Insurance (JKN) through the BPJS Health program on the physical abilities of people with disabilities in Indonesia by utilizing longitudinal

information from the Indonesian Family Life Survey. There is evidence from previous explorations that the success of the JKN program depends on the factors that influence an individual's choice to join the JKN program through the payment of JKN contributions. In addition, there is still a high disparity regarding the benefits of JKN. Therefore, it is necessary to find out whether there is a significant relationship between the effect of insurance on people with disabilities.

As mentioned on the target number 10 in the Sustainable Development Goals, reducing disparities within and between countries is vital. This area of demand is fundamental because the emphasis is on helping individuals with disabilities complete daily activities through community health care coverage.

2.6 Conceptual Framework

This research was based on the study of (Kong and Kim, 2020) in Factors Influencing Health Care Use by Health Insurance Subscribers and Medical Aid Beneficiaries. They stated that "several important factors such as demographic, social, economic, and health status factors influence the patient's need to use health services, including people with disabilities."

In addition, a study conducted by (Kong and Kim, 2020) stated that people with disabilities tend to have a lower quality of life. The definition of *disability* is people who have difficulty carrying out daily activities independently (ADL) and carrying out daily activities in the community (IADL).

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This framework is created based on the theory presented in research conducted by (Abdi et al., 2019) on the importance of understanding the care and support needs of disabled people, based on the WHO international classification of function, disability, and health framework.

A theoretical framework showed the previously discussed theory, as shown in Figure 1.
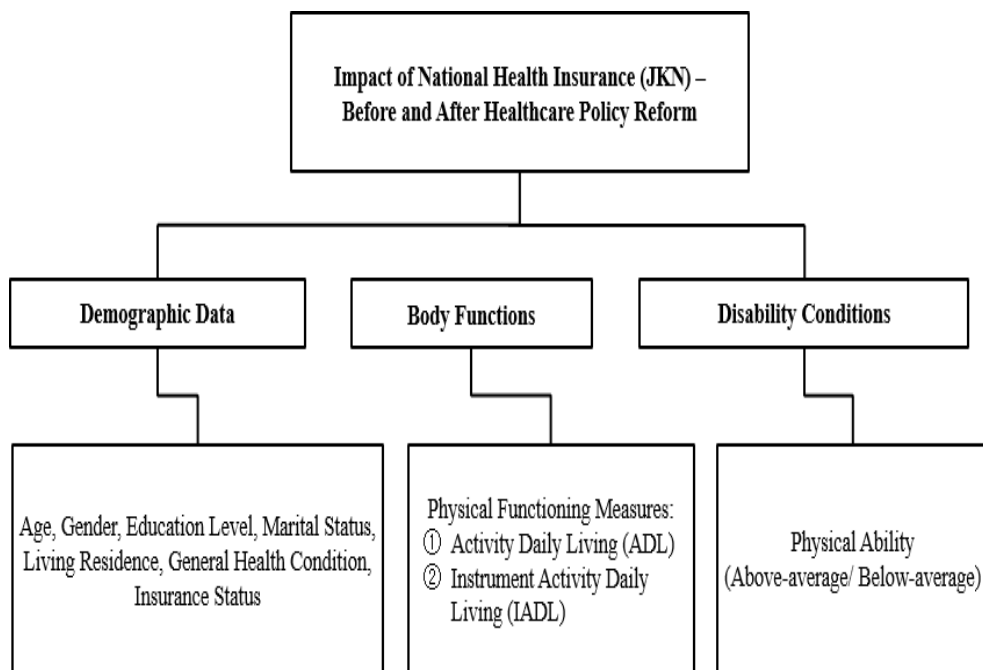
Figure 1. Conceptual Framework

III. METHODS

3.1   Design

This study focused the cross-sectional explanatory study design, preceded by an analysis of quantitative data, to explain the relationship of physical ability to do daily activities to disabled people in implementing JKN in Indonesia in 2008 and 2015 after the healthcare system reforms in Indonesia: the case of BPJS, this study uses secondary data from Indonesia Family Life Survey 4th and 5th Wave (IFLS 4 and 5).

3.2   Participants

The study participants are selected from the larger population of people with disabilities in Indonesia from 2008 and 2015. Two thousand two hundred ninety-six disabled people participated in the year 2008 (pre-reform) and three thousand four hundred sixty-three disabled people in 2015 (post-reform).

3.2.1 Inclusion and Exclusion Criteria

The inclusion criteria were as follows:

- People who were having disability

The exclusion criteria were as below:

- Not diagnosed with disability

- Child or younger person less than 18 years' old

3.2.2 Sample Size

This study was using secondary data from IFLS with total sample size was 5759 disabled people.

3.2.3 Sampling

This study was conducted in Indonesia and originally using a complex form of cluster sampling, sometimes, also known as multistage cluster sampling. During this sampling method, significant clusters of the selected people are split into sub-groups at various stages to make it simpler for primary data collection.

This study was directed in Indonesia through IFLS data and initially used an intricate cluster sampling type, now and then, also known as multistage cluster sampling. The data is taken only from a collection of people with disabilities.

3.3   Measures

The IFLS data got the information through an ongoing longitudinal survey in Indonesia in 2008 and 2015. The sample represents about 83% of the Indonesian

population, which contains over 30,000 individuals living in 13 of the 27 provinces in the country. The study variables were derived from IFLS data which is a set of detailed household and community surveys on Indonesia conducted by RAND Corporation.

- The dependent variable: Physical Ability status of disabled people (ADL and IADL)

- Independent variables: General Characteristics (age, gender, marital status, education level, and living residence) and Health Status (general health condition status, insurance status).

Table 1. Description of the Selected Variables

Variables	Categories	Classification	Definition
Dependent Variables	**Physical Ability Status of Disabled People**		
	Activity of Daily Living (ADL)	0 = Below-average 1 = Above-average	Ability to perform daily living activities
	Instrument of Activity Daily Living (IADL)	0 = Below-average 1 = Above-average	Ability to perform instrument daily living activities
Independent Variables	**General Characteristics**		
	Age	1 = ages 18–29 2 = ages 30-39 3 = ages more than 40	Age of individual
	Gender	1 = Male 2 = Female	Gender of individual

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Variables	Categories	Classification	Definition
Independent Variables	Marital Status	1 = Married 2 = Others*	The state of being married or not married
	Education Level	1 = Elementary 2 = Junior High 3 = Senior High 4 = College/ University	Individual education level (Upton attained the highest degree by self-report)
	Residence	1 = Urban 2 = Rural	Residential status of individual, where the individual is living.
	Health Status General Health Condition	1 = Healthy 2 = Unhealthy	Health status according to individual
	Insurance Status	1 = Have Insurance 2 = No Insurance	Whether a person is covered by health insurance plan

3.3.1 General Characteristics

Participants' general characteristics consisted of 8 items: physical ability, age, gender, education, marital status, health insurance status, general health conditions status, and residence. The sample consisted of 2296 people in 2008. The sample consisted of 1016 males and 1280 females. 86.4 percent of participants identified as having good physical ability, and only 13.6 percent identified inadequate/ bad physical ability. Only 37.9 percent of participants have insurance; meanwhile, most people 62.1 percent still have not covered by insurance.

3.3.2 Physical Ability to do Daily Activities

Actual capacity to do day by day exercises was estimated dependent on the Activity of Daily Living (ADL) list and the Instrumental Activities of Daily Living (IADL) list. IADL are those exercises that permit a person to live autonomously locally. Limits of development because of handicap issues cause the patient's powerlessness to satisfy the action of everyday living (ADL). ADL is an action of the day-to-day activities that people regularly doing in their lives. This review divided ADL and IADL exercises into explicit exercises as follows:

1) ADL: To convey a weighty burden for 20 meters; to draw a bucket of water from a well; to stroll for 1-5 kilometres; to clear the house floor yard; to bow, squat, bow; to stroll across the room; to stand up from sitting on the floor

without assistance; to stand up from sitting situation in a seat without assistance; to reach or broaden the arms above shoulder level; to get a little coin from a table; to dress without assistance; to wash; to get up; to eat (eating food without anyone else when it is prepared); to control pee or poop.

2) IADL: To look for individual requirements; to plan hot dinners (planning fixings, cooking, and serving food); to take medication (setting aside right piece directly on effort); to do family tasks (housekeeping, doing dishes, making the bed, and organizing the house); to search for food (choosing what to purchase and pay for it); to deal with the cash (taking care of the bills, monitoring costs, or overseeing resources).

3.4   Data Collection

The author adapted information from the 2008 and 2015 Indonesia Family Life Survey (IFLS) from the Fourth and Fifth Waves, specifically for the respondent section with disabilities. The investigation assessed the relationship between actual capacity to perform daily exercise variables and more than one independent factor, including age, gender, marital status, protection status, general health status, school and residence. In this study, the result for an objective variable has just two potential sorts (all in all, it is paired): Above-average Physical Ability and Below-average Physical Ability.

This method assists with recognizing significant elements (Xi) affecting the

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objective variable (Y) and connecting one of those independent variables to the dependent variable. Examinations were led at the public level and by the sociodemographic subgroup. Also, the author examined whether is there any positive effect of JKN on the actual capacity to do every day exercises among disabled people by taking a gander at patterns over the long-haul utilizing information from pre and post healthcare system reforms.

3.5   Data Analysis

Data analysis was performed using IBM SPSS software package (version.25). The following describes the data analysis in detail. Descriptive statistical analyses were performed on the sample groups to obtain a clear understanding of the population. Measures of chi-square test was computed to measure the significance of the association between two categorical variables (comparison analysis of association between physical ability of disabled people towards general characteristics and health status in pre-healthcare reform in 2008 and post-healthcare reform in 2015)

Multiple logistic regression analysis was conducted in order to the probability of category membership on a dependent variable (physical ability status of disabled people) based on multiple independent variables (general health condition status and health insurance status).

3.6   Ethical consideration

This study was based on publicly available de-identified data. The use of the dataset for this study was obtained from The IFLS surveys and their procedures were reviewed and approved by the Institutional Review Boards (IRBs) in the United States (at RAND) and in Indonesia at the University of Gadjah Mada (UGM). Written informed consent was obtained from all respondents prior to data collection.

IV. RESULTS

4.1 Characteristics of Participants

A total of 5759 disabled people in Indonesia participated in this study, included 2296 disabled people in 2008 and 3463 disabled people in 2015. The general characteristics of this study are given in Table 2.

Starting with the presentation of data in 2008, where the implementation of the National Social Security System has not yet occurred. The percentage of people who have good physical ability category is as much as 86.4 percent, and as many as 13.6 percent of disabled people have difficulty carrying out daily activities. Most of the participants were in the age range of 36 to 55 years (middle-aged adults), then 34.7 percent of participants came from the young adult age category (ages 18 to 35 years). The remaining 27 percent were in the elderly category. The majority of participants were also women, with a score of almost 56%. About 30 percent of the participants had the same percentage who had higher-level education in Senior High School and Elementary School education level.

The proportion who had a Junior High School and University level education was only in the range of 20% respectively. Approximately 70 percent of the sample size are also married, while the rest have the status of Separated, Single, Divorced, Widowed, or Cohabitated. Eighty-nine percent of participants also lived in urban areas,

with around 11 percent had live in rural areas. Seventy-four percent of people had good health conditions, while about 11 percent had unhealthy general conditions. Only 38 percent of people are covered by health insurance, while more than 60 percent do not have insurance.

After January 1, 2014, Indonesia entered a new era, implementing the National Social Security System/ JKN system. Then in 2015, there were several changes in the characteristics of study participants as follows. The total number of participants increased by 1167 compared, which is about a 50% increase from the total sample in 2008 of 2296 people. The percentage of people with good physical ability is as much as 2741, and as many as 722 disabled people have difficulty carrying out daily activities. Most of the participants were in the age range of 18 to 35 years, which in 2008 was primarily middle-aged. Then 36.7 percent of participants came from the category ages 36 to 55 years. The remaining 25 percent were in the elderly category.

The majority of participants were women, with almost the same percentage value at 50% as men. A total of 1293 people have an education level at the high school level, followed by the second position with the most education at elementary, university, and junior high schools. Nearly 67 percent of the sample size is married, while the rest are Separated, Single, Divorced, Widowed, or Cohabitation. The percentage of people living in urban areas was reduced by 17 percent. The number of people who have healthy general conditions also increased by 11 percent. There was

also an increase in health insurance status of approximately 10 percent after the health

reform (Table 2).

Table 2. Characteristics of Study Participants

Variables	Categories	2008 (Pre-Reform) (n = 2296)		2015 (Post-Reform) (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
	More than equal 40	1322	57.6	1889	54.5
Gender	Male	1016	44.3	1483	42.8
	Female	1280	55.7	1980	57.2
Education	Elementary	690	30.1	972	28.1
	Middle	465	20.3	461	13.3
	High	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
General Health Condition	Healthy	1690	73.6	2327	67.2

Variables	Categories	2008 (Pre-Reform) (n = 2296)		2015 (Post-Reform) (n = 3463)	
		N	%	N	%
	Unhealthy	606	26.4	1136	32.8

*Separated, Single, Divorced, Widow/er, Cohabitate
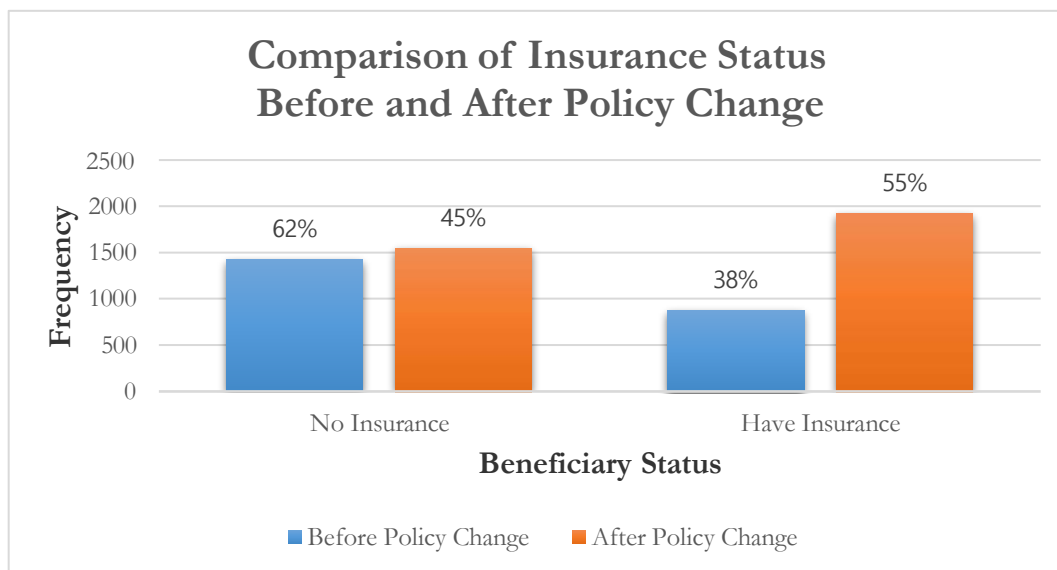
Figure 2. Comparison of Insurance Status Before and After Policy Change

In 2008 when BPJS implementation had not yet been implemented, out of a total sample of 2296 disabled people, only 38% or 871 respondents had insurance such as ASKES, ASTEK/ Jamsostek; employer-provided medical reimbursement, employer-provided clinic, private health insurance, savings -related insurance and ASKESKIN. After implementing BPJS, which began on January 1, 2014, there was an increase in the number of people who have insurance by approximately 10%, with 1436 respondents.
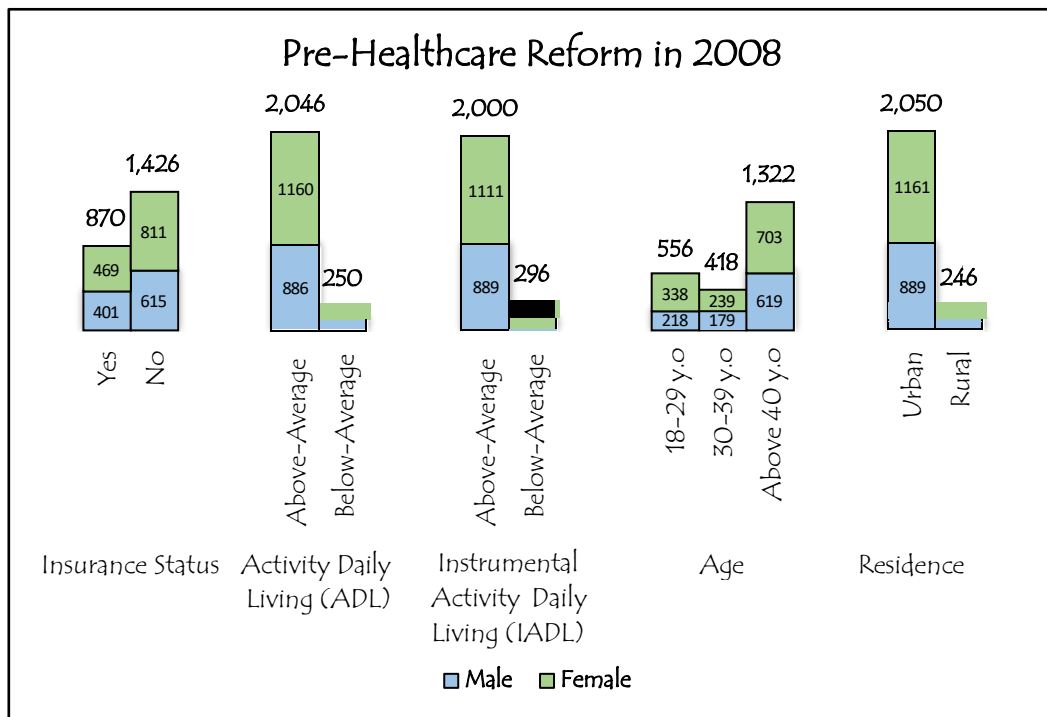
Figure 3. Effect of insurance status towards physical ability to perform ADL and IADL of disabled people in 2008

Based on figure 2, approximately 2000 disabled people have above-average ability to perform ADL and IADL. While people who have been covered by health insurance, as many as 870 people. It means that 1000 disabled people who did not have insurance still had the above-average ability, primarily women. This situation may be because their disability level was not too severe, many of them were young,

and other possible factors.
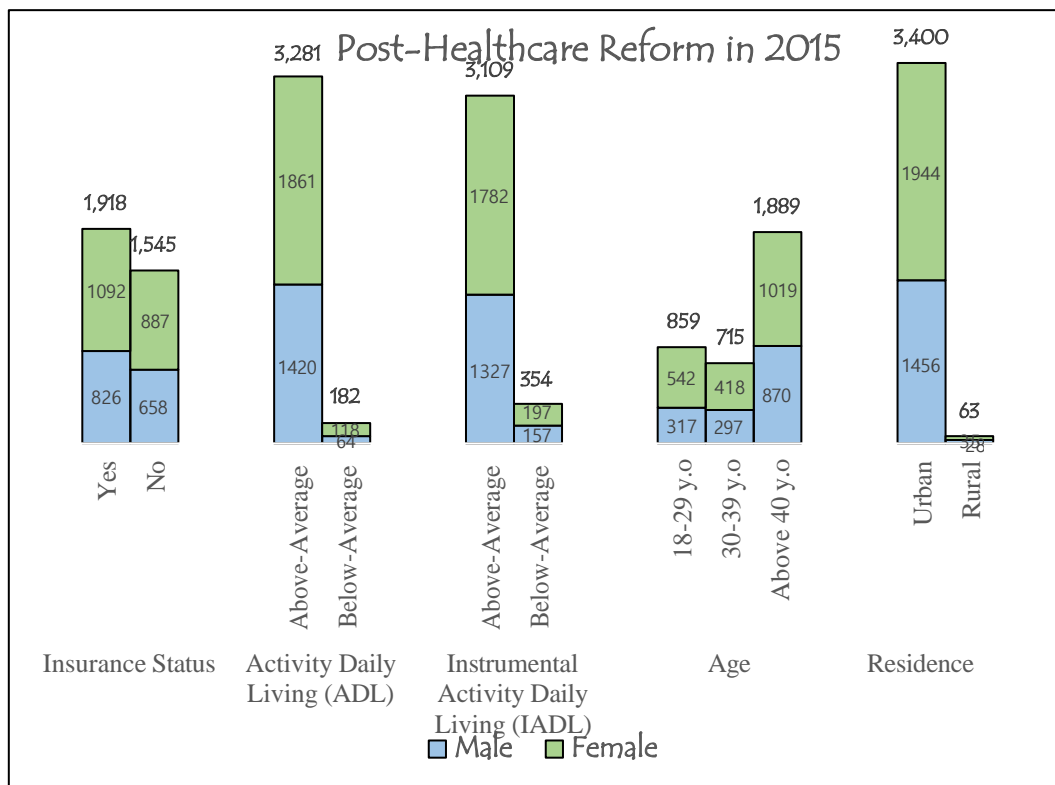
Figure 4. Effect of insurance status towards physical ability to perform ADL and IADL of disabled people in 2015

Based on figure 3, as many as 3281 disabled people have above-average ability to perform ADL and IADL. While people who have been covered by health insurance, as many as 1918 people. It means that more than 1300 disabled people who did not

have insurance but were already covered by the mandatory BPJS Kesehatan have above-average ability status. This situation indicates that the BPJS Health program positively affects people with disabilities in improving their performance in their daily activities.

4.2 Comparison Analysis of Association between Physical Ability (ADL and IADL)

4.2.1 Comparison Analysis of Association between General Characteristics and Physical Ability in 2008

Results of the association between physical ability and general characteristics during the pre-reform period of BPJS were presented in Table 3. Physical ability in this study consisted of Activity Daily Living (ADL) and Instrumental Activity Daily Living (IADL), which were the parts of dependent variables and then compared with each independent variable. The analytical method used is the Crosstabs test and the Chi-Square test to see the relationship between the two variables using the crosstabs and chi-square tests.

Relationship of Age to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.000 so that $p < 0.05$ in both dependent variables. Based on statistical tests, it can be found that there is a significant relationship between a person's age and the ability to perform ADL and IADL activities.

Relationship of Marital Status to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.032 so that $p < 0.05$ in ADL variable and 0.007 in IADL variable which is $p > 0.05$ in IADL variables. Based on statistical tests, it can be found that there is a significant relationship

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between marital status and the ability to perform ADL and there is no significant relationship between marital status and the ability to perform IADL activities.

Relationship of Gender to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.009 and 0.618 so that $p > 0.05$ in ADL and IADL variables, respectively. Based on statistical tests, it can be found that there is no significant relationship between gender and the ability to perform ADL and IADL activities.

Relationship of General Health Condition to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.363 and 0.407 so that $p > 0.05$ in ADL and IADL variables, respectively. Based on statistical tests, it can be found that there is no significant relationship between general health condition status and the ability to perform ADL and IADL activities.

Relationship of Insurance Status to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.000 so that $p < 0.05$ in ADL variable and 0.119 in IADL variable which is $p > 0.05$ in IADL variables. Based on statistical tests, it can be found that there is a significant relationship between insurance status and the ability to perform ADL. There is no significant relationship between insurance status and the ability to perform IADL activities.

Relationship of Education to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.000 so that $p < 0.05$ in ADL variable and 0.431 in IADL variable which is $p > 0.05$ in IADL variables. Based on statistical tests, it can be found that there is a significant relationship between education level and the ability to perform ADL. There is no significant relationship between education level and the ability to perform IADL activities.

Relationship of Type of Place of Residence to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.178 so that $p > 0.05$ in ADL variable and 0.000 in IADL variable which is $p < 0.05$ in IADL variables. Based on statistical tests, it can be found that there is no significant relationship between residence area and the ability to perform ADL. There is a significant relationship between residence area and the ability to perform IADL activities.

Table 3. Comparison Analysis of Association 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)											
	18-29	100	18.0	456	82.0	<.001	141	25.4	415	74.6	<.001
	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											
	Married	160	10.0	1444	90.0	0.032	187	11.7	1417	88.3	0.007
	Others*	90	13.0	602	87.0		109	15.8	583	84.2	
Gender											
	Male	130	12.8	886	87.2	0.009	127	12.5	889	87.5	0.618
	Female	120	9.4	1160	90.6		169	13.2	1111	86.8	
General Health Condition											
	Unhealthy	60	9.9	546	90.1	0.363	84	13.9	522	86.1	0.407
	Healthy	190	11.2	1500	88.8		212	12.5	1478	87.5	
Insurance Status											
	No Insurance	182	12.8	1244	87.2	<.001	196	13.7	1230	86.3	0.119
	Have Insurance	68	7.8	802	92.2		100	11.5	770	88.5	
Education											
	Elementary	74	10.7	616	89.3		86	12.5	604	87.5	
	Junior High School	26	5.6	439	94.4	<.001	51	11.0	414	89.0	0.431
	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	
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

4.2.2 Comparison Analysis of Association between Physical Ability and General Characteristics in 2015

Results of the association between physical ability and general characteristics during the post-reform period of BPJS were presented in Table 4. Physical ability in this study consisted of Activity Daily Living (ADL) and Instrumental Activity Daily Living (IADL), which were the dependent variables and then compared with each independent variable. The analytical method used is the Crosstabs test and the Chi-Square test to see the relationship between the two variables using the crosstabs and chi-square tests.

Relationship of Age to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.000 so that $p < 0.05$ in both dependent variables. Based on statistical tests, it can be found that there is a significant relationship between a person's age and the ability to perform ADL and IADL activities.

Relationship of Marital Status to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.000 so that $p < 0.05$ in both dependent variables. Based on statistical tests, it can be found that there is a significant relationship between marital status and the ability to perform ADL and IADL activities.

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Relationship of Gender to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.031 so that $p < 0.05$ in ADL variable and 0.548 in IADL variable which is $p > 0.05$ in IADL variables. Based on statistical tests, it can be found that there is a significant relationship between gender and the ability to perform ADL. There is no significant relationship between gender and the ability to perform IADL activities.

Relationship of General Health Condition to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.000 so that $p < 0.05$ in both dependent variables. Based on statistical tests, it can be found that there is a significant relationship between general health condition status and the ability to perform ADL and IADL activities.

Relationship of Insurance Status to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.000 so that $p < 0.05$ in both dependent variables. Based on statistical tests, it can be found that there is a significant relationship between health insurance status and the ability to perform ADL and IADL activities.

Relationship of Education to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.000 so that $p < 0.05$ in both dependent variables. Based on statistical tests, it can be found that there is a

significant relationship between education level and the ability to perform ADL and IADL activities.

Relationship of Type of Place of Residence to ADL and IADL activities

The study results after the Chi-Square Test got a p-value of 0.036 so that $p < 0.05$ in ADL variable and 0.135 in IADL variable which is $p > 0.05$ in IADL variables. Based on statistical tests, it can be found that there is a significant relationship between residence area and the ability to perform ADL. There is no significant relationship between residence area and the ability to perform IADL activities.

Table 4. Comparison Analysis of Association between Physical Ability and General Characteristics in 2015

2015	ADL (n=3463)					IADL (n=3463)				
	Below-average		Above-average		*p* ‡ value	Below-average		Above-average		*p* ‡ value
	N	%	N	%		N	%	N	%	
Age (Years)										
18-29	13	1.5	846	98.5	<.001	65	7.6	794	92.4	<.001
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										
Married	83	3.6	2234	96.4	<.001	165	7.1	2152	92.9	<.001
Others*	99	8.6	1047	91.4		189	16.5	957	83.5	
Gender		0.0								
Male	64	4.3	1420	95.7	0.031	157	10.6	1327	89.4	0.548
Female	118	6.0	1861	94.0		197	10.0	1782	90.0	
General Health Condition										
Unhealthy	133	11.7	1003	88.3	<.001	209	18.4	927	81.6	<.001
Healthy	49	2.1	2278	97.9		145	6.2	2182	93.8	
Insurance Status										
No Insurance	138	8.9	1407	91.1		246	15.9	1299	84.1	<.001
Have Insurance	44	2.3	1874	97.7		108	5.6	1810	94.4	
Education										
Elementary	95	9.8	877	90.2		171	17.6	801	82.4	
Junior High School	18	3.9	443	96.1	<.001	41	8.9	420	91.1	<.001
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										
Urban	175	5.1	3225	94.9		344	10.1	3056	89.9	0.135
Rural	7	11.1	56	88.9		10	15.9	53	84.1	

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

4.2.3 Multiple Logistic Regression Analysis of Disabled People and Their

Disability Condition to Perform ADLs and IADLs in 2008 and 2015

Categorical comparison for "disabled people" vis-a-vis "their ability to perform ADL and IADL activity" pre-health reform in 2008 and post-health reform in 2015 as mentioned in table 5. The age group variable was significant among factors affecting the physical ability to do ADL and IADL activities in 2008 and 2015. The probability of people aged 18-29 years old and 30-39 years old to be engaged to perform above-average ADL was 1.04 times higher and 0.93 times lower, respectively than people with age more than 40 years old. After implementing BPJS Health, it was found that the ratio of people aged between 18 to 39 years had 2.15 and 1.66 times higher chance of doing ADL. Meanwhile, the probability of people aged 18-29 years old and 30-39 years old to be engaged in the ability to perform above-average IADL was 0.26 and 0.24 times lower, respectively, than people with age more than 40 years old. However, after the existence of BPJS Health, these young people have a ratio of 2.15 and 1.66 times higher in doing ADL and 2.05 also 2.60 times higher in doing IADL compared to those with age more than 40 years old.

The marital status variable showed no significant value for both ADL and IADL activities. On the other hand, gender was significant among factors that affect the physical ability to do ADL activity. In 2015, the marital status variable was significant among factors that affect the physical ability to do ADL and IADL activity. The probability of people with the status of single, separated, divorced, widow/er, and

cohabitate married person to be engaged in the ability to perform ADL and IADL was 0.30 and 0.31 times lower, respectively, than a married person.

The probability of females being engaged in the ability to perform ADL with respect to being disabled was 1.57 times higher than males. Meanwhile, gender showed no significant value among factors that affect the physical ability to perform IADL activity. The probability of females being engaged to perform ADL with respect to being disabled was 1.11 times higher than males. In the post-policy reform era, the gender variable showed a significant relationship with carrying out IADL activities. However, it did not show a relationship between gender and performing ADL activities. Women have a 0.93 times lower chance of doing ADL and 1.38 times higher in doing IADL activity than males.

The general health condition variable was showing no significant value among factors that affect the physical ability to perform ADL activity. The probability of unhealthy disabled people to be engaged in ability to perform above-average ADL was 0.93 times lower than healthy people. In fact, there is a significant association between general health condition and ability to perform IADL activity. The probability of disabled people with unhealthy status to be engaged in ability to perform IADL was 0.70 times lower than healthy disabled people. Meanwhile the situation in 2015 were: general health condition variable was significant among factors that affect the physical ability to do both ADL and IADL activity. The probability of unhealthy disabled people

to be engaged in ability to perform ADL and IADL were 0.22 and 0.37 times higher, respectively than healthy people.

The variable of insurance status was significant among factors that affect the physical ability to do ADL and IADL activity in pre and post era of health reform. For example, the probability of insured people being engaged in performing ADL and IADL with respect to being disabled was 1.63 and 0.98 times lower, respectively, than those not having insurance. Meanwhile, in 2015, the probability of insured people being engaged in performing ADL and IADL with respect to being disabled rose to be 3.35 and 2.50 times higher than those not having insurance.

The educational status of elementary school of the householder variable was significant among factors that affect the physical ability to do IADL activity. The probability of disabled people with an elementary background was 0.56 times lower than people with a college or university education background. Respondents with senior high school backgrounds were significant factors that affect the physical ability to do ADL activity. Those with senior high school backgrounds had the probability of 0.67 times lower than college/ university education backgrounds. The educational status of elementary school of the householder variable was significant among factors that affect the physical ability to do ADL and IADL activity.

Meanwhile, in 2015, there was a relationship between a person's level of education and the ability to carry out ADL and IADL activities. This evidence can be

seen from the probability of disabled people with elementary background, junior high school and senior high school were 0.43, 0.71 and 0.43 times lower, respectively, than college/university education background. Meanwhile, the probability of those who have elementary, junior school, and senior high school background to be engaged in performing IADL was 0.27, 0.43 and 0.32 times lower than college/university education background. This evidence means that the higher a person's education level, the higher their chance of doing ADL and IADL activities efficiently or with above-average ability.

The residence variable showed no significant value among factors that affect the physical ability to perform ADL and IADL activity. However, the probability of respondents living in rural areas before and after the health policy change to perform ADL was 1.30. It increased to 2.30 times higher than urban areas in 2015. Likewise, the variable IADL, which was 0.26, rose to 1.67 times higher, which means that after implementing BPJS Health, people living in rural areas have 2.30 and 1.67 times higher chance of doing so ADL and IADL activities compared to those who were living in urban areas.

Table 5. Multiple Logistic Regression Analysis of Disabled People and Their Disability Condition to Perform ADLs and IADLs in 2008 and 2015

VARIABLES	2008						2015					
	ADL			IADL			ADL			IADL		
	OR	95% CI	p*	OR	95% CI	p*	OR	95% CI	p*	OR	95% CI	p*
Age (Years)												
18-29	1.00						1.00					
30-39	1.04	0.75 - 1.45	0.787	0.26	0.08 - 0.16	<.001	2.15	1.50 - 2.80	<.001	2.05	1.47 - 2.86	<.001
≥40	0.93	0.87 - 0.98	<.001	0.24	0.10 - 0.21	<.001	1.66	1.24 - 2.08	<.001	2.60	2.03 - 4.57	<.001
Marital Status												
Married	1.00			1.00			1.00			1.00		
Others*	0.85	0.62 - 1.17	0.337	1.01	0.74 - 1.35	0.960	0.30	0.21 - 0.42	<.001	0.31	0.24 - 0.40	<.001
Gender												
Male	1.00			1.00			1.00			1.00		
Female	1.57	1.19 - 2.07	0.001	1.11	0.85 - 1.44	0.445	0.93	0.65 - 1.31	0.686	1.38	1.08 - 1.76	0.009
General Health Condition												
Unhealthy	0.93	0.67 - 1.29	0.686	0.70	0.52 - 0.94	0.020	0.22	0.15 - 0.31	<.001	0.36	0.28 - 0.46	<.001
Healthy	1.00			1.00			1.00			1.00		

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VARIABLES	2008						2015					
	ADL			IADL			ADL			IADL		
	OR	95% CI	p*	OR	95% CI	p*	OR	95% CI	p*	OR	95% CI	p*
Insurance Status												
No Insurance	1.00			1.00			1.00			1.00		
Have Insurance	1.63	1.20 - 2.22	0.002	0.98	0.75 - 1.31	0.985	3.35	2.32 - 4.83	<.001	2.50	1.94 - 3.21	<.001
Education												
Elementary	0.71	0.46 - 1.08	0.114	0.56	0.37 - 0.83	0.004	0.43	0.23 - 0.80	0.008	0.27	0.18 - 0.42	<.001
Junior High School	1.66	0.99 - 2.78	0.054	0.83	0.54 - 1.27	0.407	0.71	0.34 - 1.49	0.37	0.43	0.26 - 0.72	0.001
Senior High School	0.67	0.46 - 0.98	0.041	0.98	0.68 - 1.40	0.934	0.43	0.23 - 0.81	0.009	0.32	0.21 - 0.50	<.001
College/ University	1.00			1.00			1.00			1.00		
Residence												
Urban	1.00			1.00			1.00			1.00		
Rural	1.30	0.88 - 1.93	0.179	0.26	0.14 - 0.50	<.001	2.30	1.03 - 5.12	0.041	1.67	0.84 - 3.32	0.139

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

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4.2.4 The Result of Subgroup Analysis for the Prediction of General Health Condition in 2008 and 2015 among Disabled People

Data analysis as showed in Table 6 was performed using the SPSS software. Table 6 shows the multiple logistic regression analysis results with categorical comparisons for "characteristics of persons with disabilities" vis-a-vis "their general health condition status" in the reform of the pre-health care system in 2008 and post-health reform in 2015. National health insurance in 2015, including socio-demographic characteristics (age, gender, education), insurance status, and physical ability to perform ADL and IADL, positively impact the general health condition of people with disabilities to become healthy. On the other hand, there was no significant relationship between marital status and general health conditions.

The odds ratio shows how likely physical activity was carried out by persons with disabilities consisting of ADL and IADL, adjusting to the explanatory variables considered. An odds ratio that is smaller than 1 indicates that an increase in the variable's value will have a negative effect on the odds and vice versa. For example, from table 6, it can be seen that after implementing BPJS Health in 2014-2015, disabled people who have difficulties in doing ADL have a 1.15 times higher chance of having healthy conditions than in 2008. However, for IADL activities, those who have difficulties doing IADL only have a 0.29 times lower chance of being healthy.

There is an interesting finding related to variable age. Disabled people with a young age between 18 and 39 years have a 2.06 times higher chance to be healthy compared to elderly people more than 40 years old. Female was also found 0.71 times lower for having the healthy general condition. Meanwhile, participants who had insurance in the BPJS Health era had 1.37 times higher for having healthy general condition compared to 2008, which only had 1.17 times odds ratio. Last but not least, those who live in rural areas also have a lower chance of 0.47 times lower than those living in urban areas.

Table 6. Subgroup Analysis of General Health Condition

in 2008 and 2015 among Disabled People

VARIABLES		General Health Condition					
		2008			**2015**		
		aOR	95% CI	p-value	aOR	95% CI	p-value
Physical Activity							
☐ ADL	DIFFICULT	0.16	0.11 - 0.22	<.001	1.15	0.84 - 1.56	0.363
	EASY	1.00			1.00		
☐ IADL	DIFFICULT	0.89	0.67 - 1.17	0.407	0.29	0.23 - 0.36	<.001
	EASY	1.00			1.00		
Age (Years)							
	18-29	1.84	1.45 - 2.34	<.001	2.06	1.72 - 2.47	<.001
	30-39	1.71	1.31 - 2.22	<.001	2.06	1.69 - 2.50	<.001
	≥40	1.00			1.00		
Marital Status							
	Married	1.00			1.00		
	Others*	0.95	0.78 - 1.16	0.653	0.98	0.85 - 1.15	0.874
Gender							
	Male	1.00			1.00		
	Female	0.74	0.61 - 0.91	0.004	0.71	0.61 - 0.82	<.001
Insurance Status							
	No Insurance	1.00			1.00		
	Have Insurance	1.17	0.96 - 1.42	0.105	1.37	1.19 - 1.58	<.001
Education							
	Elementary	0.41	0.30 - 0.56	<.001	0.52	0.42 - 0.64	<.001
	Junior High School	0.49	0.35 - 0.68	<.001	0.52	0.41 - 0.67	<.001
	Senior High School	0.67	0.49 - 0.91	0.012	0.75	0.61 - 0.92	0.006
	College/ University	1.00			1.00		
Residence							
	Urban	1.00			1.00		
	Rural	0.86	0.64 - 1.17	0.359	0.47	0.28 - 0.81	0.006

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

V. DISCUSSION

This chapter presents the analysis and discussion of the findings of this study. The presentations are done according to the specific objectives and hypothesis. Results were presented using tables for ease of looking and texts to explain the table values for easier comprehension.

5.1   Characteristics and Structural

Based on Table 2 results, the participants in this study included 2296 disabled people in 2008 and 3463 disabled people in 2015. In 2008, participants included 1016 males and 1280 females between the ages of 18 until more than 40 years old. All participants in this study were taken from the Indonesian Family Life Survey (IFLS) by RAND Corporation (rand.org) (Wave 4 and 5) were undertaken in 2007-2008 and 2014-2015. People with disabilities face widespread barriers in accessing services, especially in performing daily activities. These primary barriers contribute to the disadvantages experienced by people with disabilities. Particularly, many people with disabilities have higher rates of poverty, lower educational achievement, and employment rates, so their participation is reduced and restricted in the community.

Based on table 2, people who have been covered by health insurance in 2008 only as many as 870 people. It means that 1000 disabled people who did not have insurance still had the above-average ability, primarily women. This situation may be

because their disability level was not too severe, many of them were young, and other possible factors. A total of 2046 people had above-average ability in performing ADL (or around 89%) in 2008. Meanwhile, 1918 disabled people have insurance, with 3281 disabled people (approximately 95%) who have above-average ability category in performing ADL in 2015 (approximately 95%). It means that more than 1300 disabled people who did not have insurance but were already covered by the mandatory BPJS Kesehatan have above-average ability status. This situation indicates that the BPJS Health program positively affects people with disabilities in improving their performance in their daily activities. With great well-being, people with disabilities have the opportunity to work, learn and connect effectively in their families and their networks. Of course, well-being and health are not similar to the presence or nonattendance of a handicap; they are more extensive ideas that straightforwardly influence the nature of an individual's valuable encounter. Nevertheless, research and clinical experience have shown that people with disabilities can be sound and well (Drum et al., 2005). Furthermore, great well-being makes way for work and schooling for children with handicaps, similar to people who do not have disabilities.

Based on Table 3, the Comparison Analysis of Association between Physical Ability and General Characteristics in 2008 shows a significant relationship between the variable age and physical ability in performing ADL and IADL. There is also a significant relationship between marital status, health insurance, and educational

background in the ease of doing ADL. Meanwhile, it was found that there was a significant relationship between residence living areas and the ease of doing IADL. However, the results obtained in 2015, as listed in Table 5, almost all components in independent variables showed a significant value between general characteristics and health status of disabled people in performing ADL and IADL. As the results of research by (Edemekong et al., 2021) stated that the inability to accomplish essential activities of daily living may lead to unsafe conditions and poor quality of life. Finding the outcome of a treatment program can also be assessed by reviewing a patient's ADLs and IADLs. Assessment of ADLs and IADLs is an essential aspect of routine patient assessment and assists healthcare providers in assessing the patient's status, planning, and intervening appropriately. A provider needs to address a patient's general medical condition when determining their level of accomplishing functional capabilities that otherwise ensure independent living and personal care.

Based on the results of the multiple logistic regression as shown in table 5, after the implementation of BPJS Health in 2015, it was seen that disabled people under 40 years of age had a greater chance of 1.66 to 2.15 times higher to be able to perform ADL and IADL with above-average ability compared to those over the age of 40. In addition, people with insurance have a 3.35 and 2.50 times higher chance of doing ADL and IADL with above-average ability than those who do not have insurance. This study supports previous research that age is the most significant risk factor for

difficulty in ADL, IADL and ADL/IADL combined. (Stuck et al., 1999)

As table 6 of Subgroup Analysis showed, this evidence was also proven that disabled people living in rural areas have a lower chance of being healthy than those living in urban areas. This fact is in line with research conducted by (Durazo, 2011), which stated that the health status of rural elders and, by contrast, their urban counterparts, found that both groups were more likely to be unhealthy than suburban older adults. However, in 2015, the key findings of the binary and multiple logistic regression model depicted that almost all independent variables, except for gender and residence variables, indicate the most significant factors for performing both ADL and IADL activities among disabled people. As respondents get younger with a health condition, have a married status, have insurance benefits, and the higher education that individual have, the more ability that they have to perform IADL and ADL easily increases. As respondents get younger, between 18 and 39 years old, their ability to perform IADL and ADL easily increases. This finding is in line with research conducted by (Cwirlej-Sozanska et al., 2019), which stated a high prevalence of ADL and IADL disability in older people.

ADL assessment helps determine whether a patient may require further rehabilitation or assistance at home or if a skilled nursing or long-term care facility would be a safer environment for the patient. It is essential to recognize the impact of ADL loss on the patient (Warmoth. K et al., 2018). For example, Occupational

therapists perform an ADL assessment to determine benefits for disability insurance and long-term care insurance policies. The cost of home care, skilled care, assisted living, and nursing homes is a concern for many families. Not all supportive care is covered by Medicare or private insurance, thus leading to financial concerns for patients and significant others. The high cost of care may lead to decisions that preclude patients from receiving the care required to support ADL's. (Damukaitis and Schirm, 1989)

Often lower socioeconomic groups or disadvantaged persons have difficulty accessing quality care for seniors. Access can be difficult due to transportation, distance, and availability (Gorges, Sanghavi and Konetzka, 2019). Though many placements at care facilities are short-term, most patients end up staying longer than a year due to the inability to perform more than two of the six ADLs (Abrahamson, Hass and Arling, 2020). Therefore, efforts to improve the BPJS Health program also need to be improved to be a solution to all these problems.

5.2 Limitation

This research has three main limitations. The main limitation was that secondary data related to people with disabilities' health insurance was still very limited. It starts from the difficulty of accessing government-owned data or the lack of updated information related to this topic. Research that focuses on the quality of life of

disabled people before and after the implementation of BPJS Health is still very minimal. Along these lines, it sets aside a long strenuous effort for the researcher to get appropriate variables to the topic of this research.

Secondly, the authors can only collect information from one option, namely from the IFLS data set, which is only carried out every five years due to time, funding, and other limitations. Therefore, the latest information held by IFLS is a research version taken from 2014 to 2015. This information covers one year after carrying out BPJS so that the outcomes might be somewhat less critical.

Last but not least, the difficulty in establishing the results obtained from this study. Focusing on disability is not only the responsibility of one ministry, but this has become a boomerang that makes each ministry sit idly by and do not follow up to improve the welfare of people with disabilities. Therefore, it will be necessary to assign a ministry, such as the Ministry of Health, to evaluate medical rehabilitation programs needed by disabled people that can be accessed using BPJS Health insurance.

5.3   Significance

The findings of this study will be beneficial for the community, considering that insurance is the main areas for Persons with Disabilities, especially for those who are unable to work. There was a significant increase in the status of general health conditions for persons with disabilities after the implementation of BPJS in 2014

compared to before the existence of BPJS, indicating that the BPJS Health program has been sufficient to assist the efforts of persons with disabilities in carrying out their daily activities. Thus, the government can add new health programs that targeted to people with disabilities, especially those who live in rural areas, so that their quality of life can be maximized. Health policymakers are expected to increase the amount of coverage for financing aids for people with disabilities, such as prosthetic limbs, prosthetic hands, corsets, glasses, crutches, walkers, etcetera. For researchers (or researchers if it is a group study), this research will help them uncover critical areas in insurance status for persons with disabilities that have not been explored much by researchers. Thus, a new theory of the flow of insurance needs for persons with disabilities can be found.

VI. CONCLUSION AND SUGGESTIONS

6.1 Conclusion

Health insurance is undoubtedly a vital factor in improving the quality of life, especially for persons with disabilities. This study explicitly acknowledges the dominance of the respondent's age, general health condition, and insurance status. There is a significant change in ADL and IADL activities after respondents have insurance. This finding shows that the National Health Insurance program in Indonesia is quite successful. Nevertheless, the free health scheme program for persons with disabilities needs to be improved so that the quality of life of disabled people can be improved. If health programs to train them in daily activities can be implemented and scaled up, then the targets for good health and well-being of the Sustainable Development Goals can be met by 2030.

The objective of this research was to address the adoption of the National Health Insurance system running by BPJS that the Indonesian government started in 2014.

This research has guided the following accomplishments:

1. Documentation of National Health Insurance practices as found in health insurance for disabilities through IFLS surveys;

2. Identification and analysis of the benefits and challenges of BPJS implementation towards disabled people;

3. Increasing understanding of the impacts of healthcare reform and analyze how the progress made in health sector reform and their impact on disabled people; and

4. Providing better opportunities in the future to accommodate the issues related to health among disabled people in Indonesia.

6.2   Challenges and Suggestions

Indonesia's current health reform strategy needs to focus on the needs and concerns of persons with disabilities. Policy changes are urgently needed, mainly because the National Health Insurance (JKN) has faced several challenges starting from implementation, which has impacted the BPJS Health deficit since it was first launched in 2014. Furthermore, in terms of human resources, the potential of graduates of higher education institutions is not maximized: starting from doctors, nurses, midwives, surveillance, especially prosthetic and orthotic personnel who have not been utilized optimally because of problems in distribution. The lack of a health disaster management curriculum from the university to the implementation of coordination of preparedness and disaster management in the health sector in the regions is also a problem. Of course, this is very much related so that improvements

can be made to the pillars of health services and research development. The government also challenges providing facilities and infrastructure for health facilities that are evenly distributed throughout Indonesia, especially in more vulnerable areas such as islands, borders, challenging and remote areas. In general, there is still a lack of supply of pharmaceuticals and medical devices for people with disabilities. Other challenges are also health information management and community empowerment. Partly due to the lack of public understanding of the disability perspective, the absence of special programs for disability is a significant factor in the health insurance problem for people with disabilities to meet the needs of the population with disabilities. Therefore, they still have a dependence on an extraordinary institution.

A well-designed national health insurance system should be developed from the outset to offer comprehensive and affordable health care coverage in an appropriate, fair, efficient, and non-discriminatory manner, especially for this vulnerable population with disabilities. The BPJS Health program must meet the health care needs of persons with disabilities offering the option to live as independently as possible in the community to contribute as productive members of society. Finally, there are several solutions for the Government of Indonesia to implement some inputs, such as automatic participation for all citizens, especially for people living in rural areas. Nevertheless, simplifying and refocusing BPJS coverage, using the Tax Service

Office to collect BPJS retribution, people with better income must also pay a higher

health premium and increase public budget allocations for BPJS operations.

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APPENDIX

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IFLS Data Registration
1 message

ifls-registration@rand.org <ifls-registration@rand.org>   2 August 2021 at 22:39
To: feryandau@gmail.com

Thank you for registering to use IFLS data.

Please do not distribute the IFLS data. The data are freely available on our website. It is useful for everyone if we maintain a list of all users. If you plan to work with other people using these data, please ask them to register or register them yourself. If you are a data librarian, please ask users to register if they obtain a copy of the data from you.

The IFLS data are placed in the public domain to support research analyses. As a user of the IFLS public use files, **you are expected to respect the anonymity of all our respondents**. This means that you will make no attempt to identify any individual, household, family, service provider or community other than in terms of the anonymous codes used in the IFLS.

To download IFLS data and documentation, please go to: https://www.rand.org/well-being/social-and-behavioral-policy/data/FLS/IFLS/download.html

Questions or comments about the IFLS can be emailed to: ifls-supp@rand.org.

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	0.26	0.19 - 0.36	<.001	0.14	0.10 - 0.19	<.001	**6.02**	3.40 - 10.66	<.001	**1.95**	1.47 - 2.60	<.001
30-39 years old	0.25	0.17 - 0.35	<.001	0.17	0.12 - 0.24	<.001	**7.25**	3.68 - 14.28	<.001	**3.93**	2.63 - 5.86	<.001
more than equal 40 years old	1.00			1.00			1.00			1.00		
Marital Status												
Married	1.00			1.00			1.00			1.00		
Others*	0.74	0.56 - 0.97	0.033	0.70	0.54 - 0.91	0.007	0.39	0.29 - 0.53	<.001	0.38	0.31 - 0.48	<.001
Gender												
Male	1.00			1.00			1.00			1.00		
Female	**1.41**	1.09 - 1.84	**0.009**	0.93	0.73 - 1.20	0.618	0.71	0.52 - 0.97	**0.032**	**1.07**	0.85 - 1.33	0.548
General Health Condition												
Unhealthy	**1.15**	0.84 - 1.56	0.363	0.89	0.67 - 1.17	0.407	0.16	0.11 - 0.22	<.001	0.29	0.23 - 0.36	<.001
Healthy	1.00			1.00			1.00			1.00		
Insurance Status												
No Insurance	1.00			1.00			1.00			1.00		
Have Insurance	**1.72**	1.28 - 2.31	<.001	**1.22**	0.94 - 1.58	0.119	**4.17**	2.95 - 5.90	<.001	**3.17**	2.50 - 4.02	<.001
Education												
Elementary	**0.96**	0.65 - 1.41	0.852	**1.14**	0.80 - 1.61	0.451	0.12	0.07 - 0.22	<.001	0.13	0.92 - 0.20	<.001
Junior High School	1.95	1.19 - 3.20	0.008	**1.32**	0.89 - 1.94	0.164	0.34	0.17 - 0.69	0.003	0.30	0.18 - 0.49	<.001
Senior High School	0.65	0.45 - 0.93	0.021	**1.01**	0.71 - 1.41	0.969	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	0.76	0.51 - 1.13	0.179	**3.82**	2.00 - 7.29	<.001	0.43	0.19 - 0.96	0.041	0.59	0.30 - 1.18	0.139

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

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