Developing A Community-Based Rehabilitation Programs in Elderly Nursing Home: A Brief Descriptive Analysis

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Abstract   The need for rehabilitation services in nursing homes (NH) for the elderly is increasing each year, and this need is fulfilled both with ordinary clinical rehabilitation center visits, as well as community-based rehabilitation (CBR) inside the facility. However, a proper situation analysis is needed to establish a well-delivered CBR program in the NH, a niche to be fulfilled in this study. This study used a descriptive measurement and cross-sectional design to target the elderly who are living in the NHs. Consecutive sampling was done in the largest NH in Jakarta, in Cipayung District. Participants who were dependently ambulated were assessed in the NH clinic, whereas the independent ones were assessed in their room. Nutritional status and blood pressure measurement was done in the first visit, whereas psychiatric and activity of daily living (ADL) were done in the second visit. In the first visit, 32 (20%) participants were undernourished, whereas 25 (83%) participants have a psychiatric disorder in the second visit. More than half of the participants were also dependent on their ADL (n: 17; 57%). Malnourishment, mental illness, and higher dependency were found in subjects, which affect the conducted CBR programs. An inter-professional team (including a nutritionist, public health expertise, physiatrist, and psychiatrist) may be needed to conduct a well-established CBR program, as well as further study to find magnitudes of each aspect.

Keywords: activity of daily living; community-based rehabilitation; elderly; nursing home; psychiatry disorder.

1. Introduction

Community-Based Rehabilitation (CBR) was firstly introduced by the World Health Organization (WHO) as part of the Primary Health Care campaign in 1978 (Renee & Jones, 2014). Then it was proposed in 1994 as a joint project by the International Labor Organization, United Nations Educational Scientific and Cultural Organization, and WHO. CBR was made to promote collaboration between stakeholders, families, persons with disabilities, and the

community who are concerned with the disability to provide opportunity and equality for persons with disability (WHO, 2004). CBR is necessary since, in the reality of daily life, many people still consider persons with disability and their families as a disgrace or embarrassment. Persons with disabilities are often faced with negative stigma and discrimination from various parties, especially, the community. Thus, the community is an important part to address the problems of persons with disabilities other than family and government. Unfortunately, their community and even their own families do not have sufficient understanding and ability, thus they look at and treat them inappropriately. Low levels of economy and knowledge are considered as the source of family and neighborhood malfunction. Weak policies on services and equality for persons with disabilities become an obstacle in empowering Public Health Centers and other stakeholders.

CBR was developed in Indonesia in 1978. CBR Development and Training Center was founded by Dr. Soeharso in Central Java, Solo (Syah, 2012). The program was enhanced and supported by the health ministry, as CBR manual book in Bahasa was published in 1997 (Hadipoetra, 1997). Until now, the CBR concept was practiced all over Indonesia, institutionally or personally (Seijas et al., 2018). Those involved in the *Rehabilitasi Berbasis Masyarakat* (RBM) program include Public Health Centers that act as initiators, facilitators, implementers, catalysts, and evaluators of CBR and all components in the community consisting of persons with disabilities, families with disabilities, cadres, community leaders, and community empowerment at large. RBM is a process of knowledge and skills about disability and rehabilitation that is relayed to the community for the community to conduct early detection and simple interventions and refer to health care facilities according to the referral flow when necessary.

CBR and Community Engagement had the same principle in building collaboration and empowering the community in health promotion and policy making (McCloskey et al., 2013; WHO, 2004). CBR had a specific target, including persons with disabilities or those who are prone to disability (WHO, 2004). This study aimed to describe CBR activity, as a form of CE, in one institution that had cooperated and became CBR partners: *Panti Sosial Tresna Werdha* (PSTW) Bina Mulia 1. CBR is defined as a community development strategy for the social inclusion of persons with disabilities through the equalization of opportunities, in which programs should be culturally sensitive. They need to be developed with primary consideration of the beliefs, perceptions, and values among the community where it is implemented (Seijas et al., 2018). The concept of cultural sensitivity is more significantly relevant when dealing with distinct communities that reside in Jakarta.

A nursing home (NH), like PSTW Bina Mulia 1, is an institution that gives nursing care services and assists in mobility and activity of daily living (ADL) (Ribbe et al., 1997). More elderly NHs are opened and managed by private or state sectors, especially in Jakarta, wherein 28% of elderly citizens (>60 years) were dependent on their ADL (Badan Penelitian dan Pengembangan Kementerian Kesehatan RI, 2019). Indonesia has grown aging population (Badan Penelitian dan Pengembangan Kementerian Kesehatan RI, 2019), resulting in age-related morbidity that leads to socio-cultural changes (Ribbe et al., 1997). Caring for the elderly is a challenge and burden, not only for the family but also for the government. Therefore, elderly NH becomes an alternative solution for the problem.

Dealing with age-related morbidity, the rehabilitation program in elderly NH is well known and quite common (Quinn et al., 2008). Rehabilitation is defined as an "enabling" process aimed at reversing the "disabling" effects of a pathological condition or a social situation. This process involves efforts that are directed both at the person and their environment for them to get "back on track" with their lives and achieve equal opportunities in their desired social role participation. Rehabilitation is an effective way to reduce the burden of disability and enhance opportunities for persons with disability, which results in an improved quality of life (Seijas et al., 2018). Approximately, 1.5 million elderlies receive rehabilitation in NHs annually, and the use of NHs for rehabilitation is increasing. For these patients, successful rehabilitation often means the difference between remaining in the NH and discharge home (Quinn et al., 2008).

Rehabilitation services delivery include hospital-based, CBR, and family-based. In CBR, Specialists in Physical Medicine and Rehabilitation (SPMR) do community engagement to deliver rehabilitation services (McCloskey et al., 2013; WHO, 2004). SPMR could do service delivery by themselves, collaborate with other professionals in rehabilitation services, or train non-professional people in the community (Seijas et al., 2018). Professionals in rehabilitation practice include physiatrists, physiotherapists, occupational therapists, speech therapists, orthosis prosthesis technicians, social workers, psychologists, and rehabilitation nurses (Perhimpunan Dokter Spesialis Rehabilitasi Medik Indonesia, 2012).

As one of the national rehabilitation services and education centers, the Rehabilitation Department of Cipto Mangunkusumo Hospital and Physical Medicine and Rehabilitation (PM&R) Study Program of Universitas Indonesia had already made continuing CBR program in some Elderly NHs as a realization of community engagement responsibility. One of the teaching staff of the PM&R Study Program translated the CBR of the WHO training package book that was published by the Indonesia Ministry of Health in 1997. It also had CBR-trained areas and cadres in Salemba Tengah. This CBR-trained area and cadres became a vehicle for

PPDS to learn about and attach to CBR. CBR implementation in Salemba Tengah was in collaboration with Salemba Public Health Center. Unfortunately, due to funding limitations, the collaboration was discontinued.

CBR program followed with the Republic Indonesia Ministry of Social Affairs no.8 regulation in 2012. The social welfare implementation is a targeted, integrated, and sustainable effort that is conducted by the central-local government and communities in the form of social services to meet the basic needs of every citizen, which includes social rehabilitation, security, empowerment, and protection (Peraturan Menteri Sosial Republik Indonesia No 8 Tahun 2012, 2012). However, data and researches that concern CBR programs in NHs in Jakarta are limited (Albertina, 2019; Aprilia, 2015). Years behind, CBR activities of PM&R study program of Universitas Indonesia were scattered. It was documented, but not in an integrated report for a development recommendation (Mediyanti et al., 2014a; 2014b). This study aimed to describe the data situation analysis of the elderly living in one of NHs in Jakarta, which will be a reference in CBR program development.

2. Methods

2.1. Research articles

All residents of PSTW Budi Mulia 1M were included, with 169 residents, all of whom were taken from all over Capital City Special Region (CCSR) Jakarta. They had no known family, poor, abandoned, and homeless. All of the residents' needs are covered by the NH that was funded by the Regional Budget of CCSR Jakarta. Not all elderly could admit to PSTW Budi Mulia 1 since several administrative requirements need to be accomplished, such as age limit (60 years and above), live or found at CCSR Jakarta regional, abandoned elderly, recommendation letter from RT/RW and *Kelurahan*, and recommendations from the tribe of Social Services region (Ariefuzzaman, 2014).

PSTW Budi Mulia 1 was built in 1968 on an area of 9,999 m2, which was confirmed to be Panti Werdha 1 Cipayung through the Decree of the Governor of CCSR Jakarta No.CA11/29/1/1972. Furthermore, the name was changed to PSTW Budi Mulia 1 Cipayung through the Decree of the Governor of CCSR Jakarta Province No.736 of 1996 (Ariefuzzaman, 2014).

PSTW Budi Mulia 1 is located in Cipayung District, East Jakarta Administrative City. It is a technical implementation unit of the Social Service of CCSR Jakarta for the community that is intended for elderly welfare. It is a public institution that accommodates the elderly with social welfare problems.

The officers consist of civilian and honorary employees of the CCSR Jakarta regional government. The civilian employees take care of administration and management responsibilities, such as Head of Nursing Home, Head of Care Section, Head of Administrative Sub Division, Head of Distribution, and Social Workers Section (Ariefuzzaman, 2014). All caregivers and officers are honorary employees. Activity program varies, such as sewing, making doormats and flower, playing angklung, spiritual coaching, playing tambourine, ecstatic stage, dancing exercise, and group dynamic activity (Ariefuzzaman, 2014).

The functional status of the resident is classified by the Republic Indonesia Health Ministry as potential and nonpotential Elderly. Potential elderly are those who can do work and/or activities, which can produce goods or services, whereas nonpotential elderly are those who are unable to make a living, thus their life depends on others (Pusat Data dan Informasi Kementerian Kesehatan RI, 2013).

Rooms for the resident were divided into seven clusters, named after a flower and assigned according to the residents' potential. Asoka was a guesthouse for women who are still independent and very potential; Bougainvillea for women who are still independent and have some potential; Cempaka for women who are half frail and half independent; Dahlia for frail women; Edelweis for frail men; Flamboyan for nonpotential men; and Cattleya for potential residents (Ariefuzzaman, 2014).

2.2. Data collection

A general medical checkup was performed for all residents in October 2019 in the meeting hall. Those with mobility or clinical restriction were examined in their rooms. The examinations were done by multidisciplinary doctors. The most important data for CBR is disability among the residents, thus the physiatrists used Modified Barthel Index (MBI) for each resident. Medical examinations included variables that are relevantly associated with disability in the elderly, such as sarcopenia (Fang et al., 2020), malnourishment (Zgheib et al., 2018), and premorbid diseases (Chen et al., 2018). All residents were assessed in terms of anthropometry, blood pressure, brief nutritional status, MBI reviews, and psychiatry. General practitioners and other specialists did blood pressure examinations. Specialist doctors in Clinical Nutrition did anthropometry and brief nutritional status assessment. Psychiatrists did the clinical assessment and judgment to find any signs and symptoms of psychiatric disorder. Some variables measurements were described as follows:

1. The age and gender of the subject are taken according to Identity Card or data recorded in NH administration.

2. Body mass index (BMI) is a measurement of body fat that is a ratio of the body weight in kilograms to the square of height in meters.

3. Upper arm circumference (AUC).

   Measurement of the AUC was done by professionals using a tape meter. Measurement procedures are as follows (Oktariyani, 2012):

   a. Measurements are made on the less dominant arm between the right and left. For example, if participants were right-handed, then the measurement of the AUC is carried out on the left arm. The goal is to ensure that the size of the AUC is not due to fat deposits but rather muscle enlargement due to activity.

   b. Bend the arms so that the hands are elbow-shaped. Then, look for the midpoint from the shoulder bone to the elbow. Measurement of the AUC will be carried out in the area.

   c. Wrap the tape around the midpoint between the shoulder and elbow bones, not too tight or too loose.

   d. The size of the AUC will be visible on the tape meter.

4. Calf circumference (CC)

   Measurement procedures are as follows (Lim et al., 2020):

   a. The participant sits on a chair and holds his barefoot down.

   b. Hold his leg folded to 90 degrees, in this position, a tape measures the CC at its widest point

   c. Laying the tape on the participant's skin without tightening.

5. Blood Pressure

   Arterial blood pressure is most commonly measured via a sphygmomanometer. Blood pressure values are generally reported in millimeters of mercury (mmHg), though aneroid and electronic devices.

6. Nutritional status is a requirement of the health of a person convinced by the diet, the levels of nutrients contained in the body, and normal metabolic integrity.

7. A psychiatric disorder is a mental illness that is diagnosed by a mental health professional that greatly disturbs participants' thinking, moods, and/or behavior and seriously increases their risk of disability, pain, death, or loss of freedom.

2.3. Data analysis

Datasets were released to describe the resident profile on disability, nutritional status, premorbid disease, and psychiatric condition. Some tools and cut off was used to classify variables. MBI was used to measure the level of ADL dependency among the residents. The original Barthel Index was scored in steps of 5 points to give a maximum total score of 100. A widely adopted modified form of the Barthel Index by Collin and Wade includes a revised score range of 0–20. Lower Barthel Index scores indicated poorer physical function.

Classifying level of ADL as independent in full score of 20, partially dependent in 5–18, and totally dependent in 0–4 (Wade & Collin, 1988). BMI is classified using the WHO classification for Asians. BMI of <18.5 kg/m2 is underweight, 18.5–24.9 kg/m2 is normal, ≥25 kg/m2 is overweight, and ≥30 kg/m2 is obesity (Consultation, 2004).

3. Results and discussion

A total of 169 elderly people reside in the facility, with the mean age of 73 ± 8.25 years and most are females (Table 1). Of all participants, 58% are dependent on ADL, 48% were malnourished, and 82.2% were having psychiatric disorders (charts 1, 2, and 3).

Table 1. Residents Characteristic

Parameters	Mean
Age (years)	73 ± 8.25
Male	45.6 %
BMI (kg/m^2)	22.1 ± 4.22
Upper arm circumference (cm)	25.23 ± 4.49
Calf circumference (cm)	29 ± 4.60
Systolic Blood Pressure (mmHg)	130 ± 19.6
Diastolic Blood Pressure (mmHg)	78 ± 12.9

Changes in population structure affect the burden of dependency, especially for the elderly population. This change increased the dependency rate of the elderly. The old dependency ratio is a figure that shows the level of dependence of the elderly population on the productive age population. This figure is a comparison between the number of the elderly population (60 years and above) and the number of productive population (15–59 years). This figure reflects the

huge economic burden that productive populations must bear to finance the elderly population. The National Socio-Economic Survey data shows that the dependency ratio of the elderly population in 2012 was 11.90, which indicates that every 100 people of productive age must bear approximately 12 elderly residents (Pusat Data dan Informasi Kementerian Kesehatan RI, 2013).

The composition between genders is not quite different and was consistent with the Ministry of Social Affairs data that the percentage of elderly displaced by gender is relatively the same (Badan Pendidikan dan Penelitian Kesejahteraan Sosial, 2012). Thus, the provision of facilities and needs for male and female residents must be balanced. Related to the needs, a qualitative study of elderly beggars in Yogyakarta, presents a very interesting thing, wherein the needs of the old beggars are divided into four main things: physiological needs (eating, drinking, and home), security, love and belongingness, and appreciation and self-actualization (Fahrisal, 2017).

The most challenging needs to be fulfilled in PSTW Budi Mulia 1 are the need for love and belongingness since all residents had no family, which is consistent with other study that investigated the patterns of needs in older individuals living in long-term care institutions. Unmet needs were reported most commonly in the following areas: company (15.9%), psychological distress (14.0%), intimate relationship (11.4%), eyesight/hearing/communication (11.4%), and daytime activities (11.0%) (Tobis et al., 2018).

To overcome this, an advance psychosocial approach and management is needed. PSTW Budi Mulia 1 had various activities for the residents, including routine exercise and physical activities, as well as art and handcraft activity. Some of the residents' products were sold on the market day that was held at special moments or to the visitors of PSTW Budi Mulia 1. Residents look happy with the activity, but NH Managers do not have objective and structured data on the effectiveness of the activity and the aspect that should be improved.

A study in PSTW Budi Mulia 1 was presented as a thesis paper of undergraduate students of Islamic University Syarif Hidayatullah in 2014, which evaluated the effect of the Group Dynamics Program. Group dynamics are group activities between group members, interacting with each other, and influencing each other in social and group situations to move, develop, and adjust, thus building groups in one goal. It was usually a group game, which consist of both collaboration and competition that could fulfill the residents' need for daytime activity, communication, and appreciation. However, it was a qualitative study that has a relatively small number of samples (4 participants) chosen from potential cluster residents, without data about the participants' psychiatric condition, thus the result is very satisfying. Therefore, the

researchers recommend the existing group dynamics program be optimized. Unfortunately, the program is constrained by the limited number of social workers and psychologists who play an important role in each group dynamics session (Ariefuzzaman, 2014). This study could become an example of monitoring and evaluating other programs and activities in the NH.

CCSR Jakarta Province, in addition to being the capital of the Republic of Indonesia, is also predicated as the central city of business economy in Indonesia. This caused many residents from outside DKI Jakarta to try their luck in this metropolitan city and move to DKI Jakarta. As of March 2020, the Civil Registration and Population Office recorded 7,421 people who migrated to the city (Sari, 2020). This migration not only has an impact on the increasing number, but also the variety of ethnic groups and social issues (poverty, criminals, housing, disability).

The Ministry of Social Affairs of the Republic of Indonesia is very concerned about the handling of disabilities and homelessness in the community. According to data from the Social Affairs Ministry, 16% (n = 2,851,606) of the elderly in Indonesia was abandoned. The most proportion of persons with disabilities was in the elderly (n = 390.689). Jakarta is the 6th province with the highest number of homeless people (Badan Pendidikan dan Penelitian Kesejahteraan Sosial, 2012). These data became a consideration for Jakarta Government to build NH for the homeless elderly. Once the homeless elderly are gathered in the NH, the managers directly deal with their disabilities and accompanying premorbid diseases, which was illustrated from the obtained data on mass health examinations that had been performed.

The target of CBR in community engagement at PSTW Bina Mulia 1 is the identification and management of disability. Disability is defined as an impairment in body function and structure, as well as activity and participation limitation. Persons with disabilities are people with long-term physical, mental, intellectual, or sensory disabilities who meet obstacles in interacting with the environment and attitudes of their communities, making their full participation difficult and effective based on equal rights. Knee osteoarthritis is an example of body structure impairment, which resulted in knee pain as body function impairment, as the knee pain made the patient seek walk assistance around the house, as well as ADL, such as toileting and going upstairs, thus activity limitation. Knee pain also causes public transportation difficulty, thus participation limitation (Perhimpunan Dokter Spesialis Rehabilitasi Medik Indonesia, 2012).

Disability in PSTW Bina Mulia 1 is captured in the ADL dependency profile. Dependency in ADL is the most disability in the elderly (Melzer et al., 1999). As mentioned before, more than half of the residents were dependent on ADL (Figure 1).
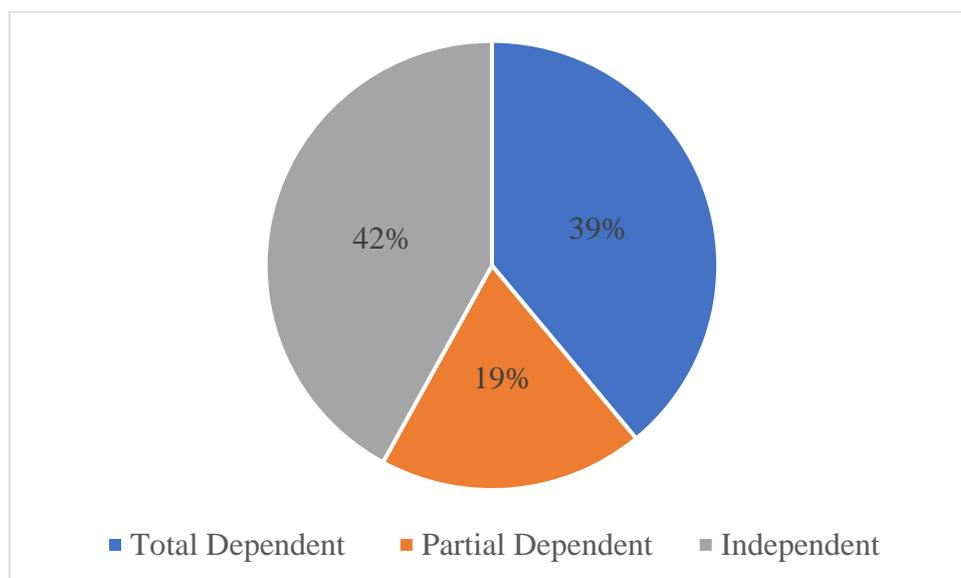
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Figure 1. Activity Daily Living (ADL) Dependency

This dependency might be caused by their frailty (Ho et al., 2002), fear of activity, and physical health and wellness, as well as mental breakdown (Ho et al., 2002). Age, education, pain, falls, household not being fully personally adapted, use of the assistive device (AD), life dissatisfactions, and low quality of life assessment had a significant impact on ADL dependency (Ćwirlej-Sozańska et al., 2018). More factors are unmodifiable, but better management in pain, falls prevention, and quality of life assessment should be highlighted to maintain and preserve ADL potential. Interestingly that before this study, the research team received a report from the NH authority that more residents were independent in ADL, which was contrary to this study findings, since the method that had been used was different.

This study performed a flash interview with some NH staff on how they defined residents' dependency, which revealed that no ADL tool was used to make a qualification. If the residents can walk, eat, shower, and dress up by themselves, then they would be qualified as independent. Hence, pointing the differences. In MBI, when some could do eat, shower, groom, and dress up but need help in preparing necessary tools in feeding, dressing, grooming, or showering, they would qualify as dependent in ADL. An advance study was needed on this since the difference in ADL dependency qualification would result in different caregiver burdens in NH. Consequently, NH authorization would need to make more adaptation, adjustment, or compensation techniques to make the residents more independent and reduce caregiver burden.

A few aspects of participants might relate to the disability and premorbid disease of the residents. The first aspect is their nutritional status. UAC and CC could become a mortality

predictor in the elderly who live in long-term care facilities. Those residents with the highest tertial of mid-UAC (27.8 ± 2.2 cm) and CC (32.1 ± 2.6 cm) had a lower mortality rate (Weng et al., 2018). Residents in PSTW Bina Mulia 1 had lower UAC and CC, which means they had more mortality rates.

Compensation and augmented program to make the residents more independent was important since they had more mortality risk. High mortality risk might take them into hospitalization period. Older patients who had a higher BI baseline would have higher BI at hospital discharge. The BI at discharge actually might be recovered in the next 6 months, back into the level of ADL level before hospital admission (Li et al., 2020). Rehabilitation in maintaining and augmenting ADL level included environmental adaptation (EA) (e.g., installation of bed lever, grab rails, raised toilet seat, ramp, adaptive cutlery, etc.), AD (e.g., motorized wheelchair), and ADL training (Sackley et al., 2015).

Rehabilitation to improve ADL level dependency sounds like an expensive and complicated program since it needs installation and additional daily occupational therapist and physiotherapist. It was proven cost effective. A study in Canada showed that intensive occupational therapy and physiotherapist (1 therapist for 50 beds [1:50]) aimed to improve the ADL function in NH could have a safe annual cost of approximately $283 per bed than the one with 1:200 (Przybylski et al., 1996). AD and EA would result in higher health care costs, but significantly safer institutional costs. Health care costs included costs for AD and EA. Institutional costs included hospitalization and NH stay. Particularly, AD and EA would cost more for purchasing and installation, but least for hospitalization and NH stay (Mann, 1999). All the above-mentioned interventions surely gave ADL capacity and quality of life improvement of residents (Mann, 1999; Przybylski et al., 1996).

This study (Figure 2), as well as a few prior studies, revealed that at least 20% of elderly people are underweight (Bell et al., 2015). This was observed among Asians as well as Indian and Egyptian. Increased falls, infection vulnerability, energy and mobility loss, poor wound healing, and confusion are reported consequences of undernutrition (Leslie & Hankey, 2015).

Chewing problems is one of the modifiable risk factors in underweight (Gupta et al., 2018). Tooth loss is known to cause a chewing problem in the elderly and is very common (Baumgarten et al., 2017). However, other chewing problems that are unrelated to a tooth, such as cognitive disorder, may also take place (Lexomboon et al., 2012). Dental prostheses alone will not improve BMI, thus managements need a continuous advanced program to improve masticatory efficacy and function (Tanasić et al., 2017). Additionally, cognitive and dental

examination in conjunction with mastication rehabilitation and food texture modification might be needed to manage undernutrition among the residents (Tanasić et al., 2017).
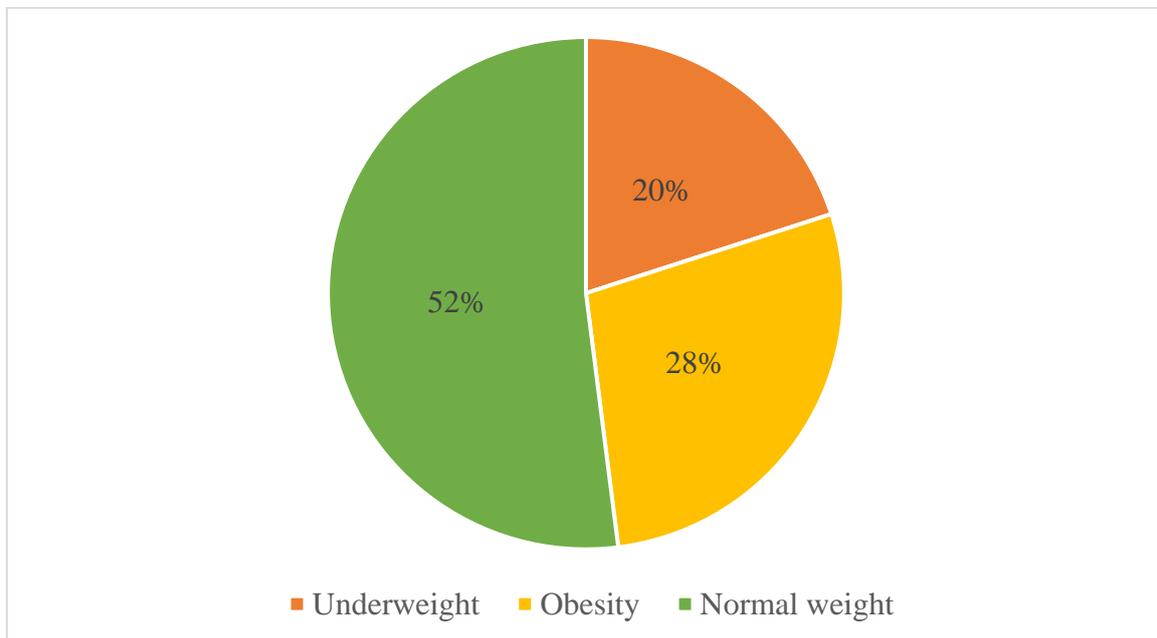

Figure 2. Nutritional Status

While undernutrition may be considered a greater risk to health in older people, obesity also increases morbidity and mortality from diabetes, hypertension, and cardiovascular disease (Leslie & Hankey, 2015). Obesity that occurs in NH residents will increase mortality and morbidity, as well as health costs in later life. Geriatric with obesity grade 2 (Asia BMI cut off is 35–39.9 kg/m^2), who live in care institution, is recommended to have a diet to prevent weight gain and exercise routine if possible (Porter Starr et al., 2016). Weight loss of 5%–10% will lower cardiovascular risk if paired with exercise and will also improve physical function and quality of life (Han et al., 2013). However, literature about weight loss intervention in geriatric care institutions is unavailable. Thus, the best recommendation is weight maintenance (Porter Starr et al., 2016). Contrarily, exercise for the elderly who live in care institutions has been studied. Resistance exercise for the elderly who lives in institutional care could maintain physical well-being and improve muscle strength, but without effect on body composition and BMI (Chiu et al., 2018).

In 2012, a study investigated the nutritional status of resident at 2 NH; PSTW Budi Mulia 1 and 3, wherein more residents with underweight (total subject 143, n = 48, 33.6%) (Oktariyani, 2012), but less residents who are overweight 16.1% (n = 23). However, the study was incomparable with this study since the researcher did not break down the prevalence in PSTW

Budi Mulia 1. With the existence of data, there was nutritional status changes in PSTW 1 residents in 2012 and 2019 (Oktariyani, 2012).

Another condition that could affect disability in the elderly is sarcopenia, which is skeletal muscle mass and strength decrease. Residents with sarcopenia were prone to be frail (Kinney, 2004), and have more disabilities (Makizako et al., 2015). The mean CC among the residents was 29 ± 4.60 cm, indicating that some might have sarcopenia since the normal range for Asian males and females are 34 and 33 cm, respectively (Lim et al., 2020). Patients who are overweight are more likely to have sarcopenia, but those who are obese and underweight could also have it (Nyiraneza et al., 2018). Sarcopenia alone will give poor clinical prognostic, especially for the elderly with acute illness (Gariballa & Alessa, 2013), even worse in sarcopenic obesity. The elderly with sarcopenic obesity will have more physical limitations than those with sarcopenia or obesity alone (Batsis et al., 2015; Kong et al., 2020). A rehabilitation program for sarcopenia includes structured physical activity that would improve the gait speed. With additional protein supplementation to the physical activity intervention, participants will have additional muscle mass and functional status improvement (Rondanelli et al., 2020).

The mean systolic pressure was 130 ± 19.6 and diastolic was 78 ± 12.9 mmHg, which is classified as pre-hypertension or controlled hypertension according to JNC 8 (Muhadi, 2016). The prevalence of systolic and diastolic hypertension among elderly people who lived in institution nursing care was previously known as 31.30% and 45.30% (Susanto et al., 2019). This condition needs to be periodically re-evaluated to know the effectiveness of the physical activity program for all residents and medication for some who need it. For all hypertensive patients' healthy diet, weight control, and regular exercise have the potential to improve blood pressure control and even reduce medication needs. The re-evaluation will also give mortality prediction since uncontrolled hypertension might increase another cardiovascular disease risk (Muhadi, 2016).

This study revealed a quite shocking number of residents with the psychiatric disorder as presented in Figure 3 (n = 139, 82.2%). However, this finding was possible since most facility residents were homeless who were gathered from the street, without any information of direct family, spouse, children, or siblings. At this moment, the psychiatrist did not vary and make specific diagnostic about the psychological disorder. However, the psychiatrists suspected that those were schizophrenia, which is one of the most prevalent in homeless people (45%).
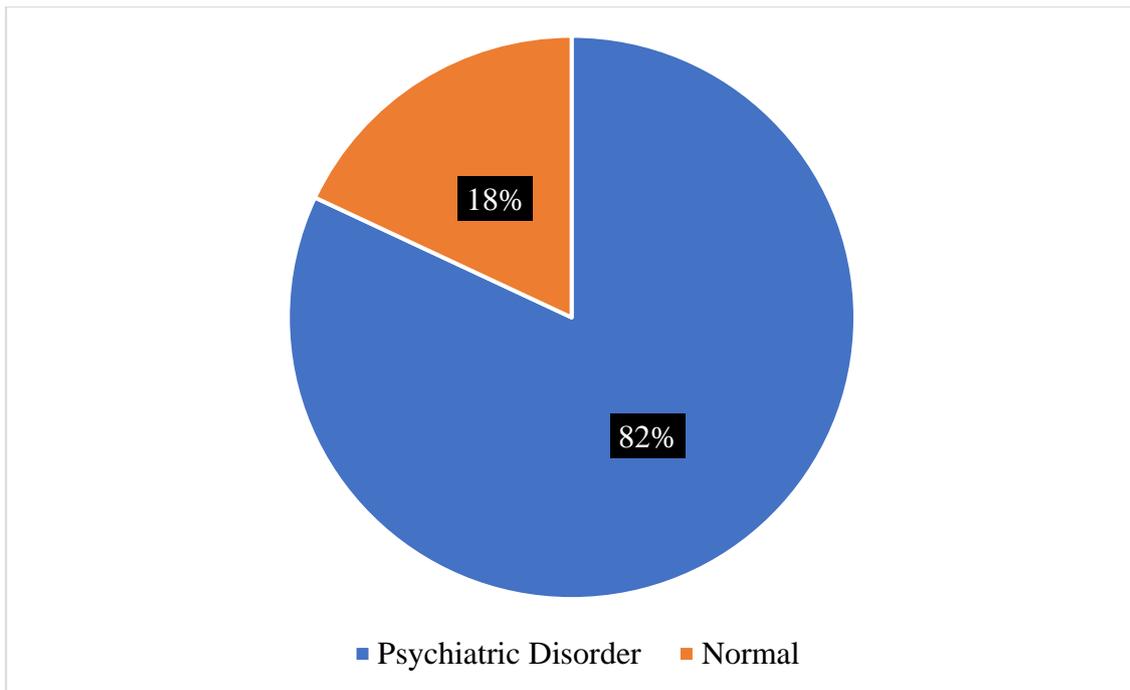
Figure 3. Psychiatric Assessment

Therefore, schizophrenia is 7–10 times more common in homeless persons than in the housed population. People with schizophrenia are much more vulnerable to homelessness than people with no mental illness. The highest rates of schizophrenia in chronically homeless residents suggest that many homeless people with schizophrenia have a very difficult time regaining stable housing (Folsom & Jeste, 2002).

Caring for psychiatric disorders in older populations poses special challenges for patients, caregivers, and clinicians (Sajatovic et al., 2000). Demands of caregiving include paying for psychiatric treatment, patient supervision, dealing with the societal stigma associated with mental illness, and emotional distress that may result from symptoms of a family member's disorder (Caqueo-Urízar & Gutiérrez-Maldonado, 2006). This burden might make the family give up, abandon the patient, expel, or let the patient go from home, which is revealed by scientific research, but often found in daily life. Some family members in Indonesia use repressive action like pasung (physical restraint and confinement) to control these patients, which is more likely done in patients who is aggressive or violent or with the negative attitude of the family toward the patient or done by unemployment family member. Therefore, health education and family member encouragement are important to shift patients with schizophrenia who exhibit aggressive or violent behavior to a mental health facility. Strengthening of basic mental health services and involving family members while treating patients with

schizophrenia to develop positive attitudes could be considered, as well as creating employment opportunities and social support system for treated patients (Laila et al., 2019).

Some mental illness, especially schizophrenia, is a consequence of cognitive and mental impairment. In the cognitive area, patients with schizophrenia will have memory deficits. Contrarily, mental dysfunction may contribute to thought or perceptual and mental function impairments, as well as difficulties in family relationships and interpersonal interactions or in acquiring and keeping a job (activities and participation) (Nowak et al., 2016).

In schizophrenia management, rehabilitation and psychiatric intervention must be blended for the patient to have elaborated specific activities and participation. Technically, three methods are used: occupational goal intervention (OGI), frontal executive program (FEP), and activity training approach (ATA). OGI focuses on strategy learning using activities and everyday tasks, which begins with the individual's choice of meaningful activities and ends on the debriefing of the activity performance. The treatment process emphasized the use of functional activities in three main domains: food preparation; money management; and reading, writing, and using computers for information seeking.

However, the functional domain was adapted to each client's choices and needs when the client preferred to work on other activity domains. The assumption is that the learned thinking process is transferred to any other occupational performance domain. FEP focused on cognitive, such as cognitive shift, memory working, and planning. Media that is used in FEP includes paper-pencil tasks. ATA is just like OGI, but is simpler, wherein the patient does not need to learn the activity but just needs to repeatedly do the activity, as it becomes a habit. Those three methods were proven effective in managing functional impairment in patients with schizophrenia (Katz & Keren, 2011).

PSTW Budi Mulia 1 had a routine exercise and physical activity program. These programs were important in managing sarcopenia, hypertension, and frailty. However, no system was made to identify their effectiveness and the residents' compliance with those programs. A study previously analyzed the contributing factors for exercise participation in 2010, which revealed that most of the elderly are not routine in carrying out dancing exercises (61.4%). Those who have a positive attitude toward dancing exercise have better compliance in exercise participation (Agustina, 2010).

This study could be used as the basis in preparing system exercise program evaluation. Unfortunately, researchers did not include psychiatric disorders in their analysis, and the aspect of the negative attitude toward dancing exercise was not explored. The high prevalence of

psychiatric disorders among the resident can affect their attitudes toward dancing exercise or other activities.

A negative and positive attitude remains important to improve compliance. OGI management that accommodates patients with schizophrenia preference uses the effect of positive attitude in promoting activity and participation (Katz & Keren, 2011). This strategy could be adapted to promote exercise participation in residents with psychiatric disorders, thus exploring residents' preference in promoting exercise activity.

Related to negative attitudes, the Group Dynamics program could change the negative attitudes of residents into positive ones. One of the studies in PSTW Budi Mulia 1 revealed that one of the participants stated that exhaustion was the reason behind her negative attitude toward the Group Dynamic Program (Ariefuzzaman, 2014). Unfortunately, the study was only conducted on groups of potential residents with a small sample. Thus, the result cannot be generalized to all PSTW residents. Additionally, this kind of study can also be conducted for other activities and programs.

Participation in games (e.g., Group Dynamic Program) was higher than exercise; this fact was quite interesting (Agustina, 2010; Ariefuzzaman, 2014). Interaction, fun, and gift became a special interest for the resident in participating in Group Dynamic Program (Ariefuzzaman, 2014). This might become a consideration in composing exercises for residents in Nursing Care. Exhaustion might prevent them from participating in the activities. Another possible reason resulted from a negative attitude toward the activities. To overcome those barriers, strategies to improve their participation in activity programs must be studied.

Spiritual and religious condition data of the residents is unavailable. This aspect is important since it will enhance copying and will motivate the patient (Laila et al., 2019). However, the researcher have no specific competency, thus it will be more accountable if the research invites some stakeholders to evaluate the spiritual and religious condition aspect. Otherwise, the researcher could recommend the NH Management to make a collaborate with related stakeholders.

Existing and well-managed programs require monitoring and evaluation to give objective data about their effectiveness and things that must be improved in the future. Collaboration in the field of spirituality and religion aspect is also needed. Cooperation is expected not only to the procurement of activities but also to the evaluation of the real condition of the residents in spiritual and religious aspects.

4. Conclusion

This study analyzed the situation of NH in Jakarta, which majorly suffered from psychiatric disorders and malnutrition conditions that affected the conduction of CBR programs. These aspects should be comprehensively assessed and managed with the help of a nutritionist and psychiatrist to build a well-established CBR program.

An advanced study needs to be continued to determine the burden, capacity, and working system among the officer of PSTW Budi Mulia 1. A study about residents' compliance to exercise and physical activity program is also needed, in conjunction with medication and behavioral therapy that the residents get for hypertension and psychiatric disorder. Evaluating specific EA and most AD that is needed by the residents is important. Those data will be useful in making renovation and budgeting plans.

More research was conducted in PSTW Budi Mulia 1. The data could be collected and analyzed to give input for service or management development. However, further and more research using more participants from different NH in different regions may be needed. This research will give a comprehensive and systematic review and recommendation to the national elderly nursing care and specific national CBR program related to elderly NH.

Declaration of Conflicting Interest

There is no conflict of interest for this manuscript.

Author Contribution

Melinda Harini: conceptualization, methodology, and data curation; Peggy: validation, software, writing and original draft preparation, and formal analysis; Luh K Wahyuni, Wanarani Aries, and Widjajalaksmi Kusumaningsih: writing and review & editing, funding, and supervision; Nelfidayani, Listyani Herman, Putu K. Mahardini, Shynta D. Hantogo, Widya Meiliana, and Ikhsan Johnson Dosmaria, Herry, and Lisa Emilda: project administration and visualization.

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References

Agustina, E. (2010). *Faktor - Faktor Yang Berhubungan dengan Praktik Senam Lansia di Panti Sosial Tresna Werda (PSTW) Budi Mulia 01 Cipayung Jakarta Timur* [Thesis, UIN Syarif Hidayatullah Jakarta]. UIN Syarif Hidayatullah Jakarta Repository. https://www.repository.uinjkt.ac.id/dspace/bitstream/123456789/1009/1/ERMAYANI%20AGUSTINA-FKIK.PDF

Albertina, M. (2019). *Efek senam osteoporosis terhadap keseimbangan pada usia lanjut : Studi pra-pasca di Panti Wreda Jakarta* [Thesis, Universitas Indonesia]. Universitas Indonesia Library. https://lib.ui.ac.id/detail?id=20493695&lokasi=lokal

Aprilia, H. (2015). *Pengaruh sudoku terhadap fungsi memori kerja dan fungsi kognisi global pada usia lanjut sehat di panti wreda*. [Thesis, Universitas Indonesia]. Universitas Indonesia Library. https://lib.ui.ac.id/detail?id=20424550&lokasi=lokal

Ariefuzzaman, S. N. (2014). Implementasi Program Dinamika Kelompok Terhada Lanjut Usia Di Panti Sosial Tresna Werdha (Pstw) Budi Mulia 1 Cipayung Jakarta Timur. *Repository.Uinjkt.Ac.Id*. http://repository.uinjkt.ac.id/dspace/handle/123456789/26930

Badan Pendidikan dan Penelitian Kesejahteraan Sosial. (2012). *Kementerian sosial dalam angka: Pembangunan Kesejahteraan Sosial*.

Badan Penelitian dan Pengembangan Kementerian Kesehatan RI. (2019). *Laporan Nasional RISKESDAS 2018*. Lembaga Penerbit Balitbangkes. http://labdata.litbang.kemkes.go.id/images/download/laporan/RKD/2018/Laporan_Nasional_RKD2018_FINAL.pdf

Batsis, J. A., Mackenzie, T. A., Lopez-Jimenez, F., & Bartels, S. J. (2015). Sarcopenia, sarcopenic obesity, and functional impairments in older adults: National Health and Nutrition Examination Surveys 1999-2004. *Nutrition Research*, *35*(12), 1031-1039. https://doi.org/10.1016/j.nutres.2015.09.003

Baumgarten, A., Schmidt, J. G., Rech, R. S., Hilgert, J. B., & de Goulart, B. N. G. (2017). Dental status, oral prosthesis and chewing ability in an adult and elderly population in southern Brazil. *Clinics*, *72*(11), 681-685. https://doi.org/10.6061/clinics/2017(11)06

Bell, C. L., Lee, A. S. W., & Tamura, B. K. (2015). Malnutrition in the nursing home. *Current Opinion in Clinical Nutrition and Metabolic Care*, *18*(1), 17-23. https://doi.org/10.1097/MCO.0000000000000130

Caqueo-Urízar, A., & Gutiérrez-Maldonado, J. (2006). Burden of care in families of patients with schizophrenia. *Quality of Life Research*, *15*(4), 719-724. https://doi.org/10.1007/s11136-005-4629-2

Chen, S., Qin, J., Li, Y., Wei, Y., Long, B., Cai, J., Tang, J., Xu, X., Yu, G., & Zhang, Z. (2018). Disability and its influencing factors among the elderly in a county, guangxi province, china. *International Journal of Environmental Research and Public Health*, *15*(9), 1-16. https://doi.org/10.3390/ijerph15091967

Chiu, S. C., Yang, R. Sen, Yang, R. J., & Chang, S. F. (2018). Effects of resistance training on body composition and functional capacity among sarcopenic obese residents in long-term care facilities: A preliminary study. *BMC Geriatrics*, *18*(1), 1-11. https://doi.org/10.1186/s12877-018-0714-6

Consultation, W. E. (2004). Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *Lancet (London, England)*, *363*(9403), 157-163. https://doi.org/10.1016/s0140-6736(03)15268-3

Ćwirlej-Sozańska, A. B., Sozański, B., Wiśniowska-Szurlej, A., & Wilmowska-Pietruszyńska, A. (2018). An assessment of factors related to disability in adl and iadl in elderly inhabitants of rural areas of south-eastern poland. *Annals of Agricultural and Environmental Medicine*, *25*(3), 504-511. https://doi.org/10.26444/aaem/81311

Fahrisal, R. (2017). PROFIL PENGEMIS LANJUT USIA DI KOTAYOGYAKARTA (STUDI KASUS MOTIF MENJADI PENGEMIS LANJUT USIA). *Jurnal Riset Mahasiswa Bimbingan Dan Konseling*, *3*(7), 341-352. http://journal.student.uny.ac.id/ojs/index.php/fipbk/article/view/8397

Fang, Q., Zhu, G., Huang, J., Pan, S., Fang, M., Li, Q., Yin, Q., Liu, X., Tang, Q., Huang, D., & Liu, J. (2020). Current Status of Sarcopenia in the Disabled Elderly of Chinese Communities in Shanghai: Based on the Updated EWGSOP Consensus for Sarcopenia. *Frontiers in Medicine*, *7*(November), 1-10. https://doi.org/10.3389/fmed.2020.552415

Folsom, D., & Jeste, D. V. (2002). Schizophrenia in homeless persons: A systematic review of the literature. *Acta Psychiatrica Scandinavica*, *105*(6), 404-413. https://doi.org/10.1034/j.1600-0447.2002.02209.x

Gariballa, S., & Alessa, A. (2013). Sarcopenia: Prevalence and prognostic significance in hospitalized patients. *Clinical Nutrition*, *32*(5), 772-776. https://doi.org/10.1016/j.clnu.2013.01.010

Gupta, A., Kapil, U., Khandelwal, R., Khenduja, P., Sareen, N., Pandey, R. M., & Upadhyay, A. D. (2018). Prevalence and risk factors of underweight, overweight and obesity among a geriatric population living in a high-altitude region of rural Uttarakhand, India. *Public Health Nutrition*, *21*(10), 1904-1911. https://doi.org/10.1017/S1368980018000447

Han, T. S., Wu, F. C. W., & Lean, M. E. J. (2013). Obesity and weight management in the elderly: A focus on men. *Best Practice and Research: Clinical Endocrinology and Metabolism*, *27*(4), 509-525. https://doi.org/10.1016/j.beem.2013.04.012

Hadipoetra, F. (1997). *Program Rehabilitasi Bersumberdaya Masyarakat*. Jakarta: Departemen Kesehatan RI.

Ho, H. K., Matsubayashi, K., Wada, T., Kimura, M., Kita, T., & Saijoh, K. (2002). Factors associated with ADL dependence: A comparative study of residential care home and community-dwelling elderly in Japan. *Geriatrics & Gerontology International*, *2*(2), 80-86. https://doi.org/10.1046/j.1444-1586.2002.00026.x

Katz, N., & Keren, N. (2011). Effectiveness of occupational goal intervention for clients with schizophrenia. *American Journal of Occupational Therapy*, *65*(3), 287-296. https://doi.org/10.5014/ajot.2011.001347

Kinney, J. M. (2004). Nutritional frailty, sarcopenia and falls in the elderly. *Current Opinion in Clinical Nutrition and Metabolic Care*, *7*(1), 15-20. https://doi.org/10.1097/00075197-200401000-00004

Kong, H. H., Won, C. W., & Kim, W. (2020). Effect of sarcopenic obesity on deterioration of physical function in the elderly. *Archives of Gerontology and Geriatrics*, *89*(April), 104065. https://doi.org/10.1016/j.archger.2020.104065

Laila, N. H., Mahkota, R., Shivalli, S., Bantas, K., & Krianto, T. (2019). Factors associated with pasung (physical restraint and confinement) of schizophrenia patients in Bogor regency, West Java Province, Indonesia 2017. *BMC Psychiatry*, *19*(1), 1-8. https://doi.org/10.1186/s12888-019-2138-z

Leslie, W., & Hankey, C. (2015). Aging, Nutritional Status and Health. *Healthcare*, *3*(3), 648-658. https://doi.org/10.3390/healthcare3030648

Lexomboon, D., Trulsson, M., Wãrdh, I., & Parker, M. G. (2012). Chewing ability and tooth loss: Association with cognitive impairment in an elderly population study. *Journal of the American Geriatrics Society*, *60*(10), 1951-1956. https://doi.org/10.1111/j.1532-5415.2012.04154.x

Li, X., Zheng, T., Guan, Y., Li, H., Zhu, K., Shen, L., & Yin, Z. (2020). ADL recovery trajectory after discharge and its predictors among baseline-independent older inpatients. *BMC Geriatrics*, *20*(1), 1-10. https://doi.org/10.1186/s12877-020-1481-8

Lim, W. S., Lim, J. P., Chew, J., & Tan, A. W. K. (2020). Calf Circumference as a Case-Finding Tool for Sarcopenia: Influence of Obesity on Diagnostic Performance. *Journal of the American Medical Directors Association*, *21*(9), 1359-1361. https://doi.org/10.1016/j.jamda.2020.03.033

Makizako, H., Shimada, H., Doi, T., Tsutsumimoto, K., & Suzuki, T. (2015). Impact of physical frailty on disability in community-dwelling older adults: A prospective cohort study. *BMJ Open*, *5*(9), 1-9. https://doi.org/10.1136/bmjopen-2015-008462

Mann, W. C. (1999). Effectiveness of assistive technology and environmental interventions in maintaining independence and reducing home care costs for the frail elderly a randomized controlled trial. *Archives of Family Medicine*, *8*(3), 210-217. https://doi.org/10.1001/archfami.8.3.210

McCloskey, D. J., McDonald, M. A., Cook, J., Heurtin-Roberts, S., Updegrove, S., Sampson, D., Gutter, S., & Eder, M. (Mickey). (2013). Community Engagement : Definitions and Organizing Concepts from the Literature. *Principles of Community Engagement*, 41. https://www.atsdr.cdc.gov/communityengagement/pdf/PCE_Report_Chapter_1_SHEF.pdf

Mediyanti, Tari, & Halim, V. (2014a). *Laporan Hasil Kunjungan Rumah Penderita Disabilitas April 2014*.

Mediyanti, Tari, & Halim, V. (2014b). *Laporan Kegiatan April 2014*.

Melzer, D., McWilliams, B., Brayne, C., Johnson, T., & Bond, J. (1999). Profile of disability in elderly people: Estimates from a longitudinal population study. *British Medical Journal*, *318*(7191), 1108-1111. https://doi.org/10.1136/bmj.318.7191.1108

Muhadi. (2016). JNC 8 : Evidence-based Guideline Penanganan Pasien Hipertensi Dewasa. *Cermin Dunia Kedokteran*, *43*(1), 54-59.

Nowak, I., Sabariego, C., Świtaj, P., & Anczewska, M. (2016). Disability and recovery in schizophrenia: A systematic review of cognitive behavioral therapy interventions. *BMC Psychiatry*, *16*(1). https://doi.org/10.1186/s12888-016-0912-8

Nyiraneza, L., Nahimana, R., Matsiko, E., & Gegout, C. (2018). Double burden of malnutrition in Rwanda: Systematic review of Rwandan Demographic health Survey, 2005, 2010 and 2015. https://doi.org/10.13140/RG.2.2.14780.49283

Oktariyani. (2012). *Gambaran Status Gizi pada Lanjut Usia di Panti Sosial Tresna Werdha (PSTW) Budi Mulya 01 Dan 03 Jakarta Timur* [Universitas Indonesia]. http://lontar.ui.ac.id/file?file=digital/20301303-S42017-Oktariyani.pdf

Peraturan Menteri Sosial Republik Indonesia (2012). Peraturan Menteri Sosial tentang Pedoman Pendataan dan Pengelolaan Data Penyandang Masalah Kesejahteran Sosial dan Potensi dan Sumber Kesejahteraan Sosial. *JDIH BPK RI*. https://peraturan.bpk.go.id/Home/Details/130231/permensos-no-8-tahun-2012

Perhimpunan Dokter Spesialis Rehabilitasi Medik Indonesia. (2012). *PERDOSRI White Book Ilmu Kedokteran Fisik dan Rehabilitasi*. PT. Batu Merah.

Porter Starr, K. N., McDonald, S. R., Weidner, J. A., & Bales, C. W. (2016). Challenges in the management of geriatric obesity in high risk populations. *Nutrients*, *8*(5), 1-16. https://doi.org/10.3390/nu8050262

Przybylski, B. R., Dumont, E. D., Watkins, M. E., Warren, S. A., Beaulne, A. P., & Lier, D. A. (1996). Outcomes of enhanced physical and occupational therapy service in a nursing home setting. *Archives of Physical Medicine and Rehabilitation*, *77*(6), 554-561. https://doi.org/10.1016/S0003-9993(96)90294-4

Pusat Data dan Informasi Kementerian Kesehatan RI. (2013). Gambaran Kesehatan Lanjut Usia di Indonesia. *Kementerian Kesehatan RI*. https://pusdatin.kemkes.go.id/article/view/13010200033/gambaran-kesehatan-lanjut-usia-di-indonesia.html

Quinn, C. C., Port, C. L., Zimmerman, S., Gruber-Baldini, A. L., Kasper, J. D., Fleshner, I., Yody, B., Loome, J., & Magaziner, J. (2008). Short-stay nursing home rehabilitation patients: Transitional care problems pose research challenges. *Journal of the American Geriatrics Society*, *56*(10), 1940-1945. https://doi.org/10.1111/j.1532-5415.2008.01852.x

Renee, R., & Jones, T. C. J. (2014). Community-based rehabilitation. In *Britannica Online* (pp. 1-5). *Encyclopaedia Britannica, Inc*. https://www.britannica.com/topic/community-based-rehabilitation

Ribbe, M. W., Ljunggren, G., Steel, K., Topinková, E., Hawes, C., Ikegami, N., Henrard, J. C., & Jónnson, P. V. (1997). Nursing homes in 10 nations: A comparison between countries and settings. *Age and Ageing*, *26*(SUPPL. 2), 3-12. https://doi.org/10.1093/ageing/26.suppl_2.3

Rondanelli, M., Cereda, E., Klersy, C., Faliva, M. A., Peroni, G., Nichetti, M., Gasparri, C., Iannello, G., Spadaccini, D., Infantino, V., Caccialanza, R., & Perna, S. (2020). Improving rehabilitation in sarcopenia: a randomized-controlled trial utilizing a muscle-targeted food for special medical purposes. *Journal of Cachexia, Sarcopenia and Muscle*, *11*(6), 1535-1547. https://doi.org/10.1002/jcsm.12532

Sackley, C. M., Walker, M. F., Burton, C. R., Watkins, C. L., Mant, J., Roalfe, A. K., ... & Peryer, G. (2015). An occupational therapy intervention for residents with stroke related disabilities in UK care homes (OTCH): cluster randomised controlled trial, *BMJ*, *350*. https://doi.org/10.1136/bmj.h468

Sajatovic, M., Madhusoodanan, S., & Buckley, P. (2000). Schizophrenia in the elderly: Guidelines for management. *CNS Drugs*, *13*(2), 103-115. https://doi.org/10.2165/00023210-200013020-00004

Sari, D. P. (2020). Penduduk Datang dan Bermukim di DKI Jakarta Maret 2020. *Portal Statistik Sektoral Provinsi DKI Jakarta* (Issue April 2020). http://statistik.jakarta.go.id/penduduk-datang-dan-bermukim-di-dki-Jakarta-maret-2020/

Seijas, V. A., Lugo, L. H., Cano, B., Escobar, L. M., Quintero, C., Nugraha, B., & Gutenbrunner, C. (2018). Understanding community-based rehabilitation and the role of physical and rehabilitation medicine. *European Journal of Physical and Rehabilitation Medicine*, *54*(1), 90-99. https://doi.org/10.23736/S1973-9087.16.04530-5

Susanto, T., Rasny, H., Susumaningrum, L. A., Yunanto, R. A., & Nur, K. R. M. (2019). Prevalence of hypertension and predictive factors of self-efficacy among elderly people with hypertension in institutional-based rehabilitation in Indonesia. *Kontakt*, *21*(1), 14-21. https://doi.org/10.32725/kont.2018.007

Syah, A. S. (2012). Dari Pelayanan Rehabilitasi Fisik Menuju Rehabilitasi Berbasis Masyarakat (RBM). *Kompasiana*.

Tanasić, I., Tihaček-Šojić, L., & Milić-Lemić, A. (2017). Effect of Prosthetic Rehabilitation on Nutritional Status in Older Adults. *Topics in Clinical Nutrition*, *32*(4), 330-339. https://doi.org/10.1097/TIN.0000000000000118

Tobis, S., Wieczorowska-Tobis, K., Talarska, D., Pawlaczyk, M., & Suwalska, A. (2018). Needs of older adults living in long-term care institutions: An observational study using camberwell assessment of need for the elderly. *Clinical Interventions in Aging*, *13*, 2389-2395. https://doi.org/10.2147/CIA.S145937

Wade, D. ., & Collin, C. (1988). The Barthel ADL Index: a standard measure of physical disability? *International Disability Studies*, *10*(2), 64-67. https://doi.org/10.3109/09638288809164105

Weng, C. H., Tien, C. P., Li, C. I., L'Heureux, A., Liu, C. S., Lin, C. H., Lin, C. C., Lai, S. W., Lai, M. M., & Lin, W. Y. (2018). Mid-upper arm circumference, calf circumference and mortality in Chinese long-term care facility residents: A prospective cohort study. *BMJ Open*, *8*(5), 10-12. https://doi.org/10.1136/bmjopen-2017-020485

WHO. (2004). CBR, A strategy for Rehabilitation Equalization of Opportunities, Poverty Reduction and Social Inclusion of People with Disabilities: Joint Position Paper. *WHO Library*.

Zgheib, E., Ramia, E., Hallit, S., Boulos, C., & Salameh, P. (2018). Factors associated with functional disability among Lebanese elderly living in rural areas: Role of polypharmacy, alcohol consumption, and nutrition-based on the aging and malnutrition in elderly lebanese (AMEL) study. *Journal of Epidemiology and Global Health*, *8*(1-2), 82-90. https://doi.org/10.2991/j.jegh.2018.08.002