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IMPROVING THE HEALTH AND FUNCTIONAL STATUS OF INSTITUTIONALIZED OLDER ADULTS THROUGH THE NURSE, CAREGIVER, AND OLDER-ADULTS PARTNERSHIP MODEL (MIRADASIA)

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Abstract

Health and functional status are standard measurements in older adult's services that showed physical and mental condition. However, institutionalized older adults with several adjustments and their limited source might cause compromised health and functional status. The quasi-experimental study aimed to investigate the effect of MiRaDaSia (nurses and caregivers joined the partnership model) on health and functional status among institutionalized older adults in Jakarta. It included 106 participants as intervention groups and 106 participants as control groups, who selected by multistage random sampling. We used the SF-12 and Barthel index to measure older-adults health and functional status. MiRaDaSia model was implemented for twelve weeks. Generally, there has been an increase in the mean of health and functional status after the intervention. There were significant improvements in functional condition between each group (p=0,001); however, mean difference oh health status show the significant increase only on six weeks following the intervention. MiRaDaSia can be implemented as a practical model to enhance services among institutionalized older-adults by professional's staff as it encourages partnership among the nurse, caregiver, and the institutionalized older-adults. Future research may consider the effectiveness of the model in private institutional, with widening variation of older adults and caregivers' characteristics as well as the different working environment of the institution.

Keywords: *caregiver, health status, functional status, institutionalized older-adult, older-adults, MiRaDaSia*

Abstrak

Model Kemitraan Perawat, Caregiver, dan Lansia (Miradasia) Dalam Meningkatkan Status Kesehatan Dan Fungsional Lansia di Panti*. Status kesehatan dan fungsional merupakan pengukuran standar yang harus dilakukan dalam menilai pelayanan kesehatan lansia yang meliputi pengkajian sampai evaluasi. Kedua pengukuran tersebut pada akhirnya menggambarkan kondisi fisik dan mental lansia. Namun, kondisi lansia yang berada di panti dengan berbagai permasalahan kesehatan dan keterbatasan sumber daya dapat menimbulkan gangguan pada status kesehatan dan fungsional lansia. Penelitian ini bertujuan untuk mengetahui pengaruh pelaksanaan model praktik Kemitraan antara perawat, caregiver, dan lansia (MiRaDaSia) terhadap status kesehatan dan fungsional pada lansia yang tinggal di panti wilayah Jakarta. Penelitian dengan desain quasi-eksperimental melibatkan 2 kelompok yang terbagi menjadi 106 partisipan di kelompok intervensi serta 106 partisipan di kelompol kontrol. Pemilihan sampel dilakukan melalui multistage random sampling dengan alat pengukuran berupa SF-12 dan Barthel index untuk melihat staus kesehatan dan fungsional lansia. Model praktik keperawatan MiRaDaSia diimplementasikan selama 12 minggu pada kelompok intervensi. Secara umum, hasil penelitian menunjukkan bahwa terdapat peningkatan status kesehatan maupun fungsional status setelah intervensi model MiRaDaSia. Status fungsional secara signifikan mengalami peningkatan antara kelompok perlakuan (p=0,001) namun, beda reratastatus kesahatan menunjukkan peningkatan signifikan pada pengukuran 6 minggu setelah intervensi. terdapat peningkatan rerata status kesehatan setelah intervensi. Status kesehatan dan fungsional pada lansia dipengaruhi Model praktik keperawatan MiRaDaSia dapat diimplementasikan sebagai model praktik untuk meningkatkan pelayanan lansia oleh petugas maupuun tenaga profesional pada setting panti, karena memberikan penguatan pada kemitraan antara perawat, caregiver, dan lansia. Penelitian yang akan datang sebaiknya perlu mempertimbangkan penerapan model prakting di setting panti swasta, dengan variasi karakteristik lansia dan caregiver yang lebih banyak maupun lingkungan kerja institusi, untuk mengetahui lebih jauh tentang efektivitas model.*

Kata kunci: *caregiver, lansia, lansia di panti, MiRaDaSia, status fungsional, status kesehatan*

Introduction

Older adults experienced decreasing in physiccal and mental health status. Increasing age is accompanied by a physiological decline of all body systems, along with the change in cognitive and affective state (Miller, 2012). These changes happened in older adults cause them to becomes vulnerable population, which the risk to experience health problem and its possibilities for the worse are higher (Allender, Rector, & Warner, 2014). Health status in older adults is declining, along with the increasing age (Chao, et al., 2013).

Health status is a level of health and illness that is the interaction between several of health determinants (Schoon, Garcia & Schaffer, 2011). Functional status is a concept of the ability to do self-care, self-maintenance, and daily activity. Functional status has a multidimensional scope that is showing someone's ability in fulfilling their basic needs and their role in maintaining their health and wellness. Research conducted in Netherland found a result that functional status is related to age and diseases or physical problems (Wensing, Vingerhoets, & Grol, 2001). Education is also the factor that influences health status, as explained in previous researches (De Belvis, et al., 2008; Sulander, Pohjolainen, & Karvinen, 2012; Chao, et al., 2013). Older adults health and functional status face changes with the increasing of older adults population in every country.

Indonesia is a developing country with nineteen million (8.03%) of the older adults population (BPS, 2014). Jakarta, as the capital city, attracted many people, including older adults, to increase their economic life. The case of abandoned older adults is an urban problem that also happened in Jakarta. Twenty percent of the total older adults in Indonesia is displaced who do not have a retirement pension, assets, and deposit savings (Kemensos RI, 2016). The Social Official of the Province Government of DKI Jakarta showed that the numbers of older adults are 3593 people (Widhana, December 2016). Older adults social institutions (Panti Social Tresna Werdha/PSTW) were build to solve the increasing number of displaced older adults with PSTW give services such as caring, helping, also physical, spiritual, social and psychological coaching by the officers to improve the older adults quality of life (Kemensos RI, 2004).

Health services in PSTW are provided by nurses, doctors, and physiotherapists. However, only nurses that always stay in PSTW continuously, while doctor and physiotherapist come as scheduled or as needed. Moreover, services in PSTW were mostly given by caregivers. All officers (nurses, caregivers, and social workers) altogether providing daily services to older adults such as personal and environmental hygiene, nutrition and mobilization. Additional roles doing by nurses are preparing and giving medicine, wound care and emergency help in older adults health status condition. Older adults who sick during the intervention will be referred to hospital.

This service model that provided was not optimal yet, because older adults have various health problems such as malnutrition risk 54.4% (Dewi & Wati, 2014), erythema 37% (Dewi & Wati, 2014), declined cognitive 65.8% (Asih, 2015), increased blood pressure, and mental disorders. Health and functional status can be used as indicators to describe how far the health services provided by functionaries (nurses and caregiver) in PSTW. As a service system that was dealing with the older adults health problems, it is essential to build a partnership through the components of the system itself. For this matter, the nurse, caregiver, and older adults partnership model's (Model praktik Kemitraan Perawat, pramuwisma dan lansia/MiRaDaSia) were developed by the researcher previously to solve for any problems of caregivers and nurses in PSTW. This model had been established before in discussion with PSTW officers. This model allowed nurses to learn through nursing interventions taught and directly practiced by the researcher. The caregivers were also were

provided learning materials related to the older adults needs that inlined with the nurses' service. These two joined forces will hopefully deliver synchronized services that meet the older adults needs through partnership. This study will investigate further the influence of MiRaDaSia model to older adults health and functional status in PSTW.

Methods

This study is one of a large research project funded by Minister of research, technology, and high education grant 2017. This research applied a quasi-experimental design with control groups.

Data was collected at two governmental PSTW that chosen randomly from five PSTWs in Jakarta. Samples in every group were 106 respondents. The intervention group is PSTW Budi Mulia 1 Cipayung and control group is PSTW Budi Mulia 2 Cengkareng. This research had two types of respondents; first were nurses and caregivers, which should already be worked six months at least, confirm to follow until the end of this research program. The second was the residents, which also had became resident for six months or more, not at bed rest care condition and also have no severe dementia that priorly screened using the Mini-Mental State Exam (MMSE).

Data were collected by research assistants that have been trained before from May to September 2017. MiRaDaSia model is services which carried out together by nurses, caregivers, and the resident with their roles in nursing care implementation. MiRaDaSia performed contribution work in older adults institution. This model was applied for six weeks. Interventions that have been provided were training to nurses and caregivers by using MiRaDaSia modules that had been developed from previous research. After that, nurses and caregivers were suggested to implement what had been learned with supervision from facilitators. Facilitators are nurses graduated from the professional degree that got training about MiRaDaSia. The researchers played a role as consultants who came to PSTW three times a week to solve any problems found related to older adults care.

This study used the SF-12 health survey instrument to measure older adults health status and Barthel index to measure participant functional status. These two instruments were largely used and proven to be a valid and reliable research questionnaires. SF-12 health survey was proven valid (0.363–0.685) and reliable (r= 0.890) (Rekawati, 2014). Barthel index validity and reliability had been done before in previous research in PSTW Budi Mulia 3 to 30 residents with all r-value higher than r table (0.361) with Cronbach alpha 0.924 (Asih, 2016). SF-12 valuation has been converted to 100, according to Ware, Kosinski, Turner-Bowker, and Gandek (2009). The samples were measured twice, at the beginning and after six weeks application of MiRaDaSia models.

This research had approved from The Ethics Committee of the Faculty of Nursing, Universitas Indonesia. Research permission was attained from the authority office in Jakarta. All the respondents were explained about the research program and signed the inform consent. There was no physical and mentally harmful to the respondents.

Results

There is no significant increase in older adults functional status in PSTW after the interventions of MiRaDaSia models for twelve weeks, but there is an increase in health status means after the intervention. Distribution of respondent health status is normal with mean in the intervention group is 44.96 (SD= 6.13), while mean in control group is 44.30 (SD= 6.53). Health status value had been converted to 100. Functional status distribution is not normal with mean in intervention group and control group are 93.49 (SD= 12.63) and 97.26 (SD= 7.50) respectively. This matter happened because older adults in the control group was mostly ta-

ken from the independent-house, hence the higher functional status compared to the intervention group.

Table 1 showed respondents with age less than 70 years, and more than 70 years were not far adrift as the mean age of intervention group was 71.46 (SD= 8.42) while in the control group was 69.5 (SD= 8.82). Results showed that there were more female participants (124) than male participants (88). Older adults who have education is more than older adults without, but the level of education is not identified. The majority of the respondents had several health problems, including diabetes and hypertension. Respondents had the average length of stay of 41.21 (SD= 33.99) in the intervention group and 45.15 (SD= 38.43) in the control group. Respondents work histories are various, but most of them worked in the informal sector like home assistant and driver.

Table 2 showed the test result in each group, respectively, while Table 3 showed the result between the control and the intervention group. There was a steady increase in health status mean starting from the baseline (45.06), after six weeks of intervention (45.23) and after 12 weeks of intervention (48.62). However, the mean difference can't show the significance of this increase. While in the control group, there was a slight dip after six weeks of intervention (44.57 from baseline of 44.63), however after 12 weeks of intervention, it spiked up (46.57).

Table 3 shows the result of Cochran's test, where functional status in the intervention group experiencing change from high to low is 58

Table 1. Respondent Characteristic (n= 212)

Variable	Intervention (n=106)		Control (n=106)		p*
	n	%	n	%	
Sex					
Male	46	43	42	37	p= 0.676
Female	60	57	64	63	
Education					
Not- Educated	34	32	52	49	p= 0.017
Educated	72	68	54	51	
Work					
Formal	14	13	13	12	p= 1.000
Informal	92	87	93	88	
Health problem					
Not present	5	5	3	3	p= 0.721
Present	101	95	103	97	
Variable	**Mean**	**SD**	**Mean**	**SD**	**p****
Age	71.46	8.42	69.59	8.82	p= 0.116
Length of Stay (month)	41.21	33.99	45.15	38.43	p= 0.43
Health Status	44.96	6.13	44.30	6.53	p= 0.452
Functional Status	93.49	12.63	97.26	7.50	p= 0.009

**Chi-Square test*
***Independent t-test*

Table 2. Older adults Health Status Differences Before and After MiRaDaSia Intervention for 12 Weeks in PSTW BM Jakarta

Variable	Intervention (n=106)		Control (n=106)		p value*
	Mean	SD	Mean	SD	
Health status					
Baseline	45.06	6.04	44.63	6.47	0.593
6 week	45.23	8.02	44.57	5.73	0.010
12 week	48.62	8.18	46.57	9.04	0.625
	p-interaction =0.234 $R^2 = 0.007$				

*General Linier Model Repeated Measures

Table 3. Functional Status Differences Perceived by Older adults in Intervention and Control Group After 12 Weeks of Intervention in PSTW BM Jakarta

Functonal Status Time 1	Functional Status Time 2		Functional Status Time 3		Cochran's Q/p
	Independent	Dependent	Independent	Dependent	
Intervention					
Independent	58	9	57	8	
Dependent	10	25	7	26	
					17.2/ 0.001
Control					
Independent	71	12	71	6	
Dependent	5	11	5	9	

respondents, while the change from low to high is 25. In the control group, the change from high to low is 71 people and 11 people for the change from low to high. The result also showed a significant difference between group (Q= 17,2; p= 0.01).

Discussion

There is a change in health status after twelve weeks of the intervention of MiRaDaSia in this research even though there is no significant difference that can be proved statistically because of the slight mean difference in 12 weeks. Because, the respondents still received closed supervision on six weeks of intervention, but after that, they became independent. However, the 12 weeks interventions of the model with only six weeks close supervision, still not sufficient to make a significant impact on the work environment in a particular institution that oversees both nurses and social workers. The previous studies by Sahar, Courtney, and Edwards (2003) as well as Riasmini, Kamso, Sahar and Prasetio (2013), explained that nursing intervention that performed during six and nine months effectively improved older-adults' health status (p> 0.05). Furthermore, it was not because MiRaDaSia model is not helpful for increasing services that given by social worker in PSTW but because older adults already have declined in all of the body systems along with increasing age (Miller, 2012). Another research also stated that health status was decreasing with increasing age (Fulton, 2014; Park, 2014).

The health status increased in older adults who got interventions. It is caused by older adults' physical health condition relatively better than the older adults in the control group PSTW. Older adults in a nursing home stay in that institution because their willingness after the long process of assessment while older adults in

PSTW remain because they have no place and forced to stay by the city security officer. A role of PSTW as a public institution challenged as they have to provide a health service regarding this matter. Older adults with declining health status were significantly related to health service utilization despite their chronic illness-bound condition (Park, 2014).

The officers in the nursing home consist of health and social workers. Nursing home gives health services as a priority. The ratio between numbers of nurses, caregivers, and older adults had calculated as well based on the workload. PSTW, as the institution under the Ministry of Social, has priority in social service for assisted citizens living in the nursing home. Health services can not be denied as the most significant need in the nursing home but still can be done optimally because of unbalanced numbers of nurses and older adults in the nursing home.

Milte, et al. (2014) conclude their research, the factors that determine older adults health status are overall physical conditions and social. It implicates the assessment of physical conditions, social including economy should be done to be able to measure older adults health status and life quality accurately. Older adults in PSTW did not have any stipend or pension. Even before entering PSTW, most of them were homeless. In these cases, long-separated life from family and the loss of the economical source as jobless, and no pension might lead to mental problems. Many studies had identified that there's a significant relationship between older adults mental state with health status.

One of them stated that compromised mental status in older adults such depression, anxiety, and also cognitive decline associated with quality of life, health conditions as well as a functional and social dependency (Arango, et al., 2016). This statement was also supported by research in Indonesia that proved family health status, knowledge, and older adults functional status related to the family burden of care. It, however, different from a comparison study between the result of the health status of older adults with and without dementia observed in Spain, showing that no significant differences (Schoon, et al., 2013). The implication is older-adults health status relatively the same with dementia or not.

Lack of support from close relatives or family might be the factor influencing health status in older adults. Another study had found that older adults living alone are significantly more likely to suffer from chronic illness and acute ailments than older adults living with their family (Agrawal, 2012). Even though living in PSTW with other residents, older adults might found that they are not befriending each other. This situation also similar to another study by Quintana in 2010 that explained older adults with poorly supported economy did not have a connection with friend or neighbor (Arango, et al., 2016). Another aspect that should be considered the mental state of older adults. This finding has shown that there's a need for support from either the government and also private institution dealing with older adults residents.

The result about functional status indicates there is significant change after intervention. It can be explained through a study by Saranz that improved functional status can be promoted through healthy lifestyle and physical activity with taking into consideration of older adults age and mobility (Arango, et al., 2016). Another study also implied that self-rated health status and functional status decreased with age (Bang, et al., 2017). The respondents from both intervention and control group have a balanced amount of proportion between those aged less than 70 and more. This finding of older adults age and health status was supported by a study in India that functional limitation can be predicted by the advancing age, poor health status and also declining musculoskeletal as well as vision-impaired (Sharma, Parashar, & Mazta, 2014).

The control group in this research has a significant result in health status improvement which caused by some limitation in this research. Such as PSTW Budi Mulia 3 Cengkareng gave participants with low partial care, and another thing was because there were clinical practice students from various institutions during the intervention process.

Conclusion

Finally, our quantitative depiction of health and functional status of the institutionalized older adults in Jakarta can be finished. The MiRaDaSia models had impact on the health and functional status changes caused by the functional decline of older adults but, there is a need to consider the influence of the functional decline of older adults and their advancing age as well as the length of close supervision of the program. MiRaDaSia can be implemented as a practical model to enhance services among institutionalized older adults by professional's staff. Future research may consider the implementation of the model in non-public institutional to know the effectiveness of the model (AG, INR).

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