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RESEARCH ARTICLE

SOCIAL WELFARE POLICY OF ELDERLY FACED WITH NATURAL DISASTER IN VULNERABLE AREA: A CASE STUDY IN LOWER NORTH OF THAILAND

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ABSTRACT

The objectives of this research were to: 1) study the well-being, health status and social welfare of the elderly 2) study the potential of Government and Non-government Organization for supporting social welfare of elderly, and 3) provide policy recommendations on the social welfare of the elderly in the area vulnerable affected from the natural disasters. The research methodology was mixed- method. The quantitative study, there were 657 elderly people who were systematic random sampling selected from utilization. The tools used in collecting data in the study were questionnaires. Data were analyzed by using means, standard deviation as descriptive statistics, and factors analysis was used to prove the relationship among factors. The qualitative study, there were 60 samples purposive selected based on their qualifications as social actors for public policy in social welfare of the elderly by Future Search Conference. The data were analyzed by content analysis.

The results showed that 1) the components of elderly's well-being in the research area had four main dimensions: Physical, Mental, Social, and Spiritual. Additionally, the social welfare of the elderly was found to be at a lower than their actual needs in all items. Whereas mean scores of social welfare and the elderly's actual needs were compared. 2) The government and non-government organizations have the potential to support social welfare systems. 3) A social welfare guideline should be adopted that is relevant to the social changes and social context of the area such as income support to increase revenue, tax exemption, increase availability of and access to public service and recreation to improve the health of the elderly. The local government administration should be a federal agency and a functional care center responsible for the integration of plans and projects and for coordinating with other agencies for right protection and support of the elderly.

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INTRODUCTION

The progress and advancement of technology and new knowledge in medical and public health has influenced the rapid increase of the proportion of the elderly population in Thailand (Knodel, 2014). This is a demographic revolution because more elderly can live longer and consequently increasing their proportion in the society (World Health Organization, 2015; Beard and Bloom, 2015; Barnes *et al.,* 2012; Black and Lipscomb, 2017). This also means that there will be more people needing elderly care, especially the elderly who live in areas with high vulnerability to natural disasters (Haines *et al.,* 2006). Disasters not only affect the lives and property of the citizens and the public but also the activities related to the development of all sectors such as agricultural activities, sanitation and health, education, and commerce and telecommunications.

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The effects are both in direct and indirect ways. Those who are affected, both the local people and those from relevant sectors, must take the responsibility together to mitigate the effects of natural disasters. It has been seen in the experiences of others that effects of natural disasters may be made less harmful if there is effective disaster prevention management before they occur and if there is a public policy set to help minimize the overall risk of disasters (McMichael *et al.,* 2008; Ebi *et al.,* 2006). In the lower-north of Thailand, one of the most vulnerable areas to natural disasters are 4 provinces with Phitsanulok, Phichit, Nakhonsawan and Sukhothai. This area is the most vulnerable to drought during the summer and flooding during the rainy season, especially since it is located at a lowland area, having major rivers flowing through it. The absence of an effective and complete water management system (Komori *et al.,* 2012) and coverage of social welfare for the elderly in the area also add to the problem faced by the elderly as these could magnify the health problems experienced by the aged people. It has been reported that there are both public and private organizations working on the social

welfare for the elderly in the said area. The report found that the work is both at the policy and operational levels; nevertheless, it has been found lack of policy that is consistent with the needs of the elderly (De Vroom and Øverbye, 2017; Gorman, 2017). Due to the deficiency of integration between various government projects and absence of a step by step or systematic process to encourage comprehensive participation of all concerned parties in defining the needs of the elderly, the existing policy does not fully satisfy the needs of the seniors in the area. As a result, the satisfaction of the elderly people on their welfare was at a low level although their overall needs in various aspects were at the high level (Comrey and Lee, 1992; Kaambwa *et al.,* 2015).

This paper finds the necessity of a corrective action through government funding and through provision of a management model which may offer available solution to the situation of the elderly in lower-north of Thailand. This paper includes policy recommendations on public policy concerning the welfare of the elderly and ways to manage the effects of disasters in disaster vulnerable areas.

MATERIALS AND METHODS

This research employed mixed method approach as state below:

Evaluated the vulnerability of the area by using automatic spatial correlation. The calculation of the standard and probability value are called Gi* (Gi Star) (Ebi *et al.,* 2006). In performing this, technical support was given by the regional space technology and GIS, Lower North, Naresuan University.

Quantitative Research: Data were collected from the elderly people of lower-north of Thailandand were used for evaluating the health conditions and social welfare of the elderly. In getting the samples, the researcher obtained the sample number by using the formula of 10 times the predictor variable. In this study, the total predictor variable is 43 indicators, so the number of the sample size is 43x10 = 430, and to complete the sample size data collection needs more than 500 samples (Alderman *et al.,* 2012). The researcher then decided to collect data from 675 samples selected by systematic random sampling. The data was analyzed by mean, standard deviation and factor analysis.

Qualitative Research: Data collected for this part of the research were used to study the potential of the public and private sectors in supporting the social welfare system and for the policy feedback in social welfare management for the elderly in areas vulnerable to natural disasters. The tools used to gather data were in-depth interviews, empirical data, and information by future search conference. 60 people were selected as social actors based on their qualifications and involvement in the public policy for the social welfare of the elderly in the research area.

The selected social actors were the following: four executive directors of the local government in lower-north of Thailand, six directors of health promotion of the district hospital, 31 of the elderly in the area, 16 local people who are responsible for the welfare of the elderly in the local administration and four people from the private organization. Data was analyzed by using content analysis.

RESULTS

The well-being, health status and social welfare of the elderly: From the list of all 15 questions about well-being, factor analysis was used to group the variables that were related to the same elements. The variables of the same element had more relationship, and the ones of the different element had less or no relationship at all. The analysis found a Kaiser-Meyer-Olkin (KMO) value of 0.746, and the Bartlett's Test of Sphericity which was used in hypothesis testing had a Chi-Square value of 3698.006 and a P-value of 0.000.

The null hypothesis (H0) was then rejected, meaning that the 15 variables were related (as shown by Table 4). It was also found that the data was suitable to be used for factor analysis as shown in Table 1 and Table 2, with a Kaiser-Meyer-Olkin (KMO) value of higher than 0.06 and a Bartlett's Test of Sphericity value which was statistically significant. After confirming the suitability of the data about the health of the elderly questionnaire, the said data were used to perform the exploratory factor analysis by using the principle component and orthogonal rotation method. It was found that all the 15 questions about well-being could be grouped into four elements. When considering the factor loadings after rotating, it was found that the detail of the question list in each element had more than 1 Eigen value. The four elements are as follows (see Table 3). The result of the factor analysis above shows that the Health condition of the elderly consisted of four key dimensions which are Physical Health, Mental Health, Social Health and Intellectual Health. Table 4. showsthe mean ($\overline{X}$) and standard deviation (S.D.) scores of the elderly social welfare needs. The overall mean is at a high level with ($\overline{X}$ =2.38). The greatest demand is income ($\overline{X}$ =2.58), the social welfare of the elderly and social stability needs ($\overline{X}$ =2.46), the health care ($\overline{X}$ =2.46) and the recreation ($\overline{X}$ =2.42) are also at high level. Followed by the aid service and network ($\overline{X}$ =2.22) and housing ($\overline{X}$ =2.08) which are at middle level.

The potential of Government and Non-government Organization for supporting social welfare of elderly

1. In the organizational strategy, it was found that the plan for the elderly were perfectly operation. The issues, needs or expectations of the elderly, which were later analyzed for developing a plan/project of the agency including a meeting to gather the opinions of the agency's personnel and outside associates, were explored. Nevertheless there was lack of participation from the part of the elderly community in the setting of visions, missions, policies, objectives, plans and project related to the field of elderly care in the annual social welfare planning of the agency. In the preparation for caring the seniors, the younger people in the area, especially those who are directly involved, should be knowledgeable and prepared in caring for the elderly's welfare in various aspects: i.e., availability of services for elderly patients in the area such as transportations, forwarding, or caregiving. Additionally, there is a need for coordination between the relevant agency and people concerned to promote a proper career for the elderly.

Table 1. The mean health scores of the elderly by item

Item	The elderly health	Mean	Standard Deviation	Level
1.	Having the underlying disease	2.06	.991	Mid
2.	The ability to perform daily activities independently.	3.49	.909	High
3.	Having a good environment with no pollution threat.	2.81	1.189	Mid
4.	Having a peace of mind	3.24	0.803	High
5.	Having a joyful mind	3.17	0.821	High
6.	No mental distress	2.69	1.197	Mid
7.	Receiving psychological oppression	1.47	0.877	Low
8.	The safety within the family	3.50	0.816	High
9.	The safety within the community	3.39	0.868	High
10.	The overall environment is warm / complementary.	3.24	0.883	High
11.	Thinking of the causes of the condition of sorrows.	2.24	1.142	Mid
12.	Recognizing the condition of sorrows.	2.27	1.145	Mid
13.	Seeing the solution of the condition of sorrows.	2.27	1.144	Mid
14.	Realizing the value of themselves	3.25	0.805	High
15.	Realizing the value of others.	3.24	0.779	High

Table 2.Kaiser-Meyer-Olkin (KMO) value and Bartlett's Test of Sphericitydataset
The list of questions about the health of the elderly

Kaiser-Meyer-Olkin measure of sampling adequacy (KMO)	=	.746
Bartlett's Test of Sphericity	Approx. Chi-Square =	3698.006
	df =	105
	P =	<0.001

Table 3. Analysis of the health condition of the elderly

Elements	Item	List	Loading factor	Eigen Value
(1) Intellectual Health	11	Thinking of the causes of the condition of sorrows.	.936	3.573
	12	Recognizing the condition of sorrows.	.946	
	13	Seeing the solution of the condition of sorrows.	.870	
(2) Mental Health	4	Having a peace of mind.	.797	2.763
	5	Having a joyful mind.	.763	
	6	No mental distress	.667	
	7	Receiving psychological oppression.	.594	
(3) Social Health	3	Having a good environment with no pollution threat of life and property.	.565	1.346
	8	The safety within the family.	.741	
	9	The safety within the community.	.753	
	10	The overall environment is warm / complementary.	.643	
	14	Recognizing the value of themselves.	.859	
	15	Recognizing the value of others.	.822	
(4) Physical Health	1	Having the underlying disease.	.675	1.028
	2	The ability to perform daily activities independently.	.830	

Table 4. Comparison of the opinions of the elderly between social welfare of the elderly and their welfare needs

Items	The social welfare of the elderly			The welfare needs of the elderly		
	($\overline{X}$)	(S.D.)	Level	($\overline{X}$)	(S.D.)	Level
1.Health Condition	1.68	0.41	Moderate	2.46	0.40	High
2.Income Maintenance	1.47	0.49	Low	2,42	0.39	High
3.Aid service and Network	1.56	0.31	Low	2.22	0.51	Moderate
4.Housing	1.33	0.48	Low	2.08	0.54	Moderate
5.Safety in Life and Property	1.89	0.56	Moderate	2.54	0.41	High
6.Recreation	1.64	0.43	Low	2.42	0.50	High
7.Personal social services	1.89	0.56	Moderate	2.54	0.41	High
Mean	1.61	0.31	Low	2.38	0.29	High

2. In the organizational structure, it was found that the agency that is responsible for the elderly welfare is clearly identified in the organizational structure.
3. For the system, some problems were identified such as the issues concerning the placement of assessment and monitoring of care for the elderly. For example, the system for assessing the worth of budget allocated to the care of the elderly, and monitoring of the project / activities for the elderly.
4. Skills, knowledge, and ability of the personnel who were responsible for the elderly were lacking. It was found that they had inadequate education about social welfare development. Moreover, there was also lack of long-term training about care of the elderly within the organization. As a result, the personnel weren't able to determine the appropriate plan/project. So, most of the projects were just the reproduction from the previous fiscal year or from another agency.
5. The work of the Chief Executive of the Agency was to focus on the task of caring for the elderly, rather than infrastructure development. Thus, the agency should utilize its role in pushing to have a policy, plan or project relating to the elderly care.
6. It was found that there was the establishment of the working group for the seniors, and it took associates

who were from outside the area to be the directors in the elderly committee. There was a clear definition of the roles for the working group, and it was created with the participation of the public. They shared ideas, participated and co-decided in the operations.

7. The creation and dissemination of shared value to work for the elderly was carried out. This was done by encouraging the employees within the agency to recognize the importance of working for the elderly. The shared value to work for the elderly was published through various channels such as posters and billboards. Also, there was a system for incentives and rewards for corporate personnel who follow the shared values to care for the elderly.

Policy recommendation in social welfare of the elderly

1. The welfare of the elderly development plans is continuously operating and are beneficial to many of the seniors; nevertheless, they do not cover and are not consistent with most of the actual needs of the elderly. This affected the satisfaction of the elderly to be at the low level which is opposite to their welfare needs level. Most of the services provided were not proper for the elderly because the planning and the budget allocations did not have a variety of areas. Most of the projects were just reproductions from the previous fiscal year or from another agency without evaluating the work and resolving the various problems in relation to the context and the identity of the area.
2. The social welfare for the elderly should be adjusted based on the social changes and needs of the senior people such as the promotion of the revenue for the elderly, tax exemptions for the products they produce, increase in public services, recreation to keep seniors healthy both physically and mentally, establishment of clubs to seriously take care of the rights of the elderly and encouragement of the elderly to live in a good condition. The District Administration should be the federal agency that acts in the integration plan or project, including the cooperation of other agencies, both public and private sectors to achieve the highest benefit of the social welfare.

Conclusion

The health of the elderly in the area of vulnerable to disasters consisted of four dimensions, and they are the following: physical health, mental health, social health and intellectual health. It was found that the health was at a lower level than the actual needs of the elderly in all dimensions. This is consistent with the research of Ebi *et al.* 2006 and Haines *et al.* 2006 due to the difficulties experienced in the application of policies for supporting the welfare of senior people in the community (Ebi *et al.,* 2008; Thornton *et al.,* 2014; Portier *et al.,* 2013). The social welfare of the elderly in disaster-vulnerable areas could be operated to build the capacity (Capacity Building Impacts) of those involved in public policy through various means such as by 1) building a network to work together in making positive impact of public policy on social welfare of the elderly, 2) using data/information of the elderly who have health problems to give an assistance to the elderly and their families, so they could live together with less burden, 3) using data/information to support the preparation of plans and policies with the cooperation of relevant agencies in order to support the elderly, and 4) continuously improving policies to develop the potentials of the elderly development and to make them achieve positive self-esteem and in turn make them respect and regard others also (Frumkin *et al.,* 2008; Jia *et al.,* 2010). Adaptation activities must involve the full range of stakeholders, including community leaders, organizations, the public, and governments (Walker *et al.,* 2012). Survey data indicate that the elderly is willing to engage in social welfare issues (Jia *et al.,* 2010; Cherniack, 2008; Massey *et al.,* 2017). thus, stakeholder input is needed to make the difficult choices facing public health programs, in terms of how much of their scarce resources to spend to increase monitoring and surveillance for climate-sensitive health outcomes (Kohn *et al.,* 2005). Investing human and financial resources in these prevention activities could mean fewer resources to address other problems (Wiles *et al.,* 2012; Van Malderen *et al.,* 2017). Advancing community adaptation capacity to Public policy is challenging but achievable. Cooperation and participation among different groups advances common goals, and the benefits of public participation extend beyond the individual to the society at large. The framework for community-based adaptation presented here can increase local adaptive and social capacity, and, as a result, help communities better prepare for and respond to the health risks of natural disaster (Cherniack, 2008; Massey *et al.,* 2017; Wiles *et al.,* 2012). Populations with both susceptibility and vulnerability factors are referred to as "sensitive" populations. Studies have shown that within this population, older people (susceptible) who were of low income (vulnerable) were the slowest to recover from the natural disaster (Massey *et al.,* 2017).

Virtually every human disease is likely to have both susceptible and vulnerable populations associated with it. One key aspect to mitigating the effects of climate change is a better understanding of diseases and the unique risks of various exposed or affected populations so that strategies may be developed that take such risks into account and are tailored to address them (Ward and Barnes, 2015; Walker and Maltby, 2012). Poverty generally makes people more vulnerable to many of the health effects of climate change, largely due to inadequate access to health care. Poverty also increases the risk that a population displaced by extreme weather events or environmental degradation will not easily recover, and as a result, will suffer much higher disease risks (Jia *et al.,* 2010; Cherniack, 2008; Massey *et al.,* 2017; Van Malderen *et al.,* 2017). The same is true for people who suffer mental illness, and others who for various reasons are socially isolated For such populations, the effects of climate change such as weather extremes, disruptions in access to public services including health care and food assistance programs, and increased stress are all magnified by their preexisting conditions or situations. The Elderly are likely to experience increased vulnerability to climate-induced environmental changes resulting from flooding and extreme weather events (Walker and Maltby, 2012; Sanz and Velázquez, 2007). Data to support a broad understanding of which populations will be most susceptible and vulnerable to diseases affected by climate change are generally lacking at this time; however, data are available that identify vulnerable populations for some diseases with environmental causes or triggers that are likely to be altered by climate change. Natural disaster will help to identify vulnerable populations, and also to develop the

strategies needed to adapt to climate changes and avoid excess health risks. These research efforts, if they are to be effective, must involve a broad spectrum of research scientists from epidemiologists and physicians to environmental engineers and community planners. Such efforts also will require a broad-based, multi-agency federal program that builds on the strengths of each agency to develop an overall comprehensive research agenda (Frumkin *et al.,* 2008; Dong, 2015; Randall, 2013).

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