Socio-demographic Characteristics and Quality of Life Associated with Environmental Health Factor in Pak Phanang Community, Nakhon Si Thammarat, Thailand

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Abstract

Purpose: This study is a descriptive study, aim to determine Socio-demographic Characteristics and quality of life associated with environmental health impact factors in Klongnoi Community, Pak Phanang district, Nakhon Si Thammarat province

Design/ Methodology: Overall, 433 Participants were interviewed with questionnaires. An environmental Health Assessment Prevalence of Parasitic disease was conducted, by fecal examination and focus group discussion by representatives from the Village Health Volunteers (VHV).

Findings: The research results showed that 80% of them were females aged more than 30 years old with an average age of 54.17 years old. 95% of them were Buddhist, and 5% were Muslim. 79% of their marital status is married. The major number of participants, which was 63%, had graduated from primary school with 8,500 Thai Bath as average monthly incomes. Furthermore, 73% of the interviewees were shown to be inadequate. The average number of people in the family were 3 members, and each family has 2 of the family members

whom to be taken care of. In the last 3 months, the health data shown that 38% of them had an illness, and 44% of them had a chronic disease. The most common diseases found were Diabetes Mellitus (DM) and hypertension (HT) and they did not receive annual medical checkups. 57% of the samples got treatments at public hospital for their illnesses. In health behavioral, some of the participants had been smoking and drinking alcohol, in addition, 23% of them had never done an exercise, and 17% of them still ate uncooked and half–cooked food. Their eating behavior leads to high consumption of sweetness and a high calories food. Economically, it was found that most of them were in debt and most of the barriers were consuming by 43%. The environmental problems that were obstacles in the area were waste, carrier such as rodents and insects, water supply and chemical pesticide usage. Also, there were major issues with the dilapidation of the road in the community, accident, and safety social issues. Most of them, which could be calculated as 54%, satisfied with themselves. From the sample group, 291 participants had stool examinations by using a direct wet smear technique for finding parasitic diseases prevalence. From the examination, it is found 1.72% of the prevalence, with Ascaris Lumbricoides eggs, Strongyloides Stercoralis Rhabitiform larvae; of which the same person was found in the equilibrium of parasites at a percentage of 2.41.

Conclusion: In terms of the focus group discussion, it was found that environmental problems in the community especially waste management, water supply and flooding were the main issues, that the community needed to solve. In conclusion, Socio–economic status should arise from a combination of health and quality of life. Therefore, an integration of an organization and community to solve problems was assuredly needed.

Keywords: Environmental Health, Socio–demographic, Quality of life

Introduction

Thai society has an agricultural association in terms of culture, which has changed the way of life from rural to urban society for individual. The way of life lifestyles of people in the community has changed over time. Desirable self–care behaviors showed that the advancement in medical technology and public health cannot decrease the incidence rate of diseases. It only can decrease the severity and problems. Self–care – therefore means using folk wisdom; (Komatra Chuengsatiansup, et al, 2002) by allowing people to take care of their own health, which focuses on health promotion and uses local wisdom. The government provides academic and public support and allows people to look after health promotion in their own ways of life. This type of health promotion is overall a process, activity and a guideline for implementation on health in order to holistic promote and support individuals to develop their own potential, family and community in all aspects systematically. (Arporn Phaowattana, et al, 2012) (Sujittra Yodjun, et al, 2011). The government has developed a system of service and public health management in order that Thai people will receive thorough services Good health is therefore a product or service that is the output of a medical service system. Socio– economic development of the public and private sectors has created tremendous value. At the same time, it causes environmental pollution by bringing about the degradation of natural resources and the environmental poisoning that results from development. Importantly, it also affects people's health in many dimensions, both physically, mentally, socially, and intellectually, which has a direct and indirect effect. These effects are caused by the development of almost all policies, projects or activities. In Thailand, there is a mechanism of the state that has used the law to protect the environment, health, and natural resources since 1975. The National Health Act, 2007 states that: (Komatra Chuengsatiansup, et al, 2002) Individuals have the right to inquire assessment and have the right to participate in health impact assessments from public policy, and to receive information, explanations and reasons from government agencies or to carry out projects or activities that may have an impact on health from public policy by assessing the health effects based on the duration of processing. People in the community still have illnesses caused by various

environmental conditions and pollution, including risk behaviors that affect health conditions. Most of unnecessary illnesses and deaths come from communicable diseases and non–communicable diseases, occupational and environmental diseases, pollution and various accidents that affect each community differently including environment, housing, climate, occupation, beliefs, interests, values, social behavior, health, and social culture and also economic differences, income, and level of educations. The characteristics of such differences affects the occurrence of disease, which are problems in different communities as well, such as the people in the community who often suffer from stress disorder, Respiratory disease, Allergy from toxins, Cardiopathy and Diabetes. This is caused by high fat dietary habits, and lack of exercises. People in rural areas often suffer from diseases caused by a lack of adequate environmental sanitation such as food sanitation. water supply management, hygienic toilet management, waste and sewage problems that cause Diarrhea or Cholera, pollution problems, reek, noise, wastewater, insect disturbances; including various nuisances that affects health. This is determined based upon the participation of people in the community, awareness of the problem, facilitation and support from relevant health agencies. From the study in the Pak Phanang watershed, the research team found that the area of Khlong Noi, Pak Phanang District, Nakhon Si Thammarat has 10,829 People, consist of 5,384 men and 5,445 women, that is counted as 2,712 households. There are 6 temples, 10 schools, 8 child development centers, and 1 mosque. The majority of the population that are 1,612 households have a farming career with 20,753 rai cultivated area. The area is used for planting rice, palm oil, coconut, pomelo, lime (Office September 18, 2013) (Chamaroek, 2007), (Chinno,, 2010), (Department, P. C.., 2006), (Jaikaroon, S., & Nathapinthu., .,2002). Pak Phanang District is a district located in the water area. There are parts that has environmental problems and sanitation, which affects a lot of health and communities, especially the garbage problem, household waste management and the consumption of vegetables that contain toxins, resulting in accumulated toxic substances in the body, causing disease without infection, which is Hypertension, Diabetes, as well as health risks of people living in the area, There are proposals for relevant departments or universities to help with the

health of the community and the environment. Therefore, the research team chose the Khlong Noi Sub– district in Pak Phanang District as the target area for community health promotion in order to encourage the local people to solve the community problem by participating for good health and happiness in society. The purpose of this descriptive study was to assess the health impact and environmental health factors related to the quality of life in Khlong Noi Sub– district, Pak Phanang district, Nakhon Si Thammarat province.

Methodology

Study area and sample

This research used survey research, and participation in community health advocacy in Klong Noi Sub–district, Pak Phanang District, Nakhon Si Thammarat Province. Data was collected from 433 household representatives from 19 villages by using health status questionnaire; Environmental Sanitation Assessment, Quality of Life Measurement, the Prevalence of Community Parasitic Diseases, and the Focus Group. This research study was approved by the Human Research Ethics Committee, Walailak University (Code No.061/2015).

Instruments for data collection

The research tools in this study were questionnaire. The modified questionnaire was checked and tested by five experts for the validity and reliability of the contents. Discrimination power was set at more than 0.2, and the alpha coefficient was calculated by using Kuder–Richardson Formula 20 (KR–20). The overall reliability of all items was 0.82 the secondary data from the health center annually report and focus group discussion.

Data analysis

The data were analyzed through a computer program, and the descriptive statistics were used to analyze the data. These were used to categorize the data that was obtained from the study and to understand the characteristics of the sample group; using frequency, percentage, mean, standard deviation, and chi–square coefficient. The statistical significance level was 0.05.

Results

The sample group consisted of 433 cases; males were 20.3%, and females were 79.7%, aged between 15–96 years. The average age was 54 years. The age group between 0–15 years was 0.2%. The age group between 16–30 years was 8.5%, the age group between 31–45 years was 23%, the age group between 46–60 years was 32 % and the age group more than 61 years was 37% respectively. 95% were Buddhist, 4.8% were Islam, and 0.2% was Christian. The percentages of married couples were 79%, followed by a single (10%) and widow (8.8%), respectively. For education, 63% got no education, 9% graduated from junior high school, 7% graduated from high school, 10% graduated from undergraduate, and 6.7% graduated from higher–level education. Income was between 800 – 80,000 Baht/month. Mostly, 37% had income more than 5,000 – 10,000 Baht, 20% had income 3,500 – 5,000 Baht, 23% had income less than 3,500 Baht, and 20% had income more than 10,000 baht, respectively. Most of their incomes were inadequate, 72% showed that their incomes are enough for their expenses; on the other hand, 28% showed that their incomes are insufficient. For the dwelling, 92% owned their houses, 3% rented leased–house, 1.4 % lived with relatives/friends, and 0.2% lived in other places. The average numbers of the member in the family were 3–4 people, the minimum number of the family member was one person, and the maximum number of the family member was 11 people. The average of two family members who received incomes had to take responsibility for raising two people, as shown in (Table 1).

Table 1: Socio-demographic characteristics

Characteristics	Total (n = 433)	Percentage
Sex		
Male	88	20.3
Female	345	79.7
Age (Year)		
0–15	1	0.2
16–30	37	8.5
31–45	99	22.9
46–60	137	31.7
61+	159	36.7
Mean = 54.17, S.D = 15.85, Min = 15, Max = 96		
Religion		
Buddhism	411	94.9
Christianity	1	0.2
Muslim	21	4.9
Marital Status		
Single	44	10.2
Married	344	79.4
Widowed/Divorce/Separation	45	10.4
Education		
Uneducated	38	8.8
Primary School	274	63.3
Secondary School	72	16.7
Bachelor's Degree	49	11.2
Income (Baht/month)		
<.3500	81	18.7
3,500–5,000	73	16.9
5,001–10,000	175	40.4

Characteristics	Total (n = 433)	Percentage
>10,000	104	24
Mean = 10190.99, S.D = 9718.49, Min = 800, Max = 80,000		
Expenditures (Baht/month)		
<.3500	100	23.1
3,500–5,000	85	19.6
5,001–10,000	161	37.2
>10,000	87	20.1
Mean = 8,717, S.D = 8943.62, Min = 300, Max = 90,000		
Sufficiency of income and Expenditures		
Sufficient	119	27.5
Insufficient	314	72.5
Dwelling		
Household	400	92.4
Leased House	12	2.8
Family/Friends	6	1.4
Temporary Accommodation	15	3.4

In last three months, Health and Access Service Report had shown that 38% got an illness, 5% had injured, and 44% had the congenital disease (5% of Heart disease, 32% of hypertension and diabetes) or chronic diseases that be treated continuously. Taking care of themselves data showed that mostly 70% went to public hospitals; as well as, Health Behavioral Information had shown that 15% had smoking behavior, 11% had drinking alcohol behavior, and 23% had never exercised. For eating behavior, 80% washed their hands before having food, 16.7% ate raw food, and 60% ate salty food such as salted beef or salted fish. Water/rainwater drinking source data, 81.3% bought drinking water, 13.4% drank from groundwater, and 2.5% drank from the marsh. For financial information, 75% showed that family incomes had been from their occupations, and the average family income was 10,322 baht per month. 73% had enough family income; on the other hand, 43% had debt. 24%

showed that their debt is about 10,000 Baht. For environmental problems, there are 96% of solid waste problem, 15% of wastewater and reek problem, 22% of sewerage and damaged road problem, 88% of animal and insect disease problem, 34% of chemical usage problem, 6.2% of dust, smoke, and burning problem, 68% of the drinking water problem, 70% of using water problem, 4% of the accident, safety property and traffic problem, and 1.2% of other problem. Moreover, physical abuse problem was 0.7%, natural disaster problem was 49%, the drug problem was 19%, gambling problem was 17.3%, and 4.6% of other social problem. Moreover, physical abuse problem was 0.7%, natural disaster problem was 49%, the drug problem was 19%, gambling problem was 17.3%, and 4.6% of another social issue. Quality of life information, 41% showed that most of the sampling representatives satisfied with their health between middle to the maximum level. 54.5% satisfied with their lives, 61% satisfied with their life safety, and 44.8% satisfied with their quality of life. When we grouped for dividing the level of quality of life, 45.7% were at the satisfactory quality of life level, and 54.3 were at the excellent quality of life level. (Table 2, 3)

Table 2: Environmental Information

Demographic attributes	Total (n = 433)	Percentage
Environmental Obstacles		
Noise Pollution	14	3.2
Noise from the TV	7	1.6
Unnecessary Waste	414	95.6
Sewage and Reek	64	14.8
Waste Issues	7	1.6
Damaged Road	96	22.2
Rodents, and Insects	380	87.8
Pesticide Usage	145	33.5
Burning, Smoke, and Dust	27	6.2
Drinking Water	296	68.4
Using Water	303	70

	Total (n = 433)	Percentage
Sanitation of Food	28	6.5
Growing Vegetables, with fences	237	54.7
Livestock	110	25.4

Table 3: Quality of life

Demographic attributes	Total (n = 433)	Percentage
Substandard Quality of Life	–	–
Satisfactory Quality of Life	198	45.7
Excellent Quality of Life	235	54.3

For stool examinations collecting of 390 cases, 300 cases were collected and examined as 76.92%. The result of fecal sample in 300 cases showed that parasites were found in 8 cases, 6 cases in male (75%) and 2 cases in female (25%).

The prevalence rate was 2.67% that found in the age group between 46 to 60 years (62.50%) and 37.5% in the age group over 60 years, and another age group wasn't found. Hookworm's egg was detected in only 6 cases (75%) and earthworm's egg in 2 cases (25%) which also had an intestinal disorder.

The result of the study found that sex, age, education level, income, and illness were not related. However, the correlation between age, illness and knowledge showed statistically significant at ($p < 0.05$); as well as, the correlation between age and environmental problems had statistically significant at 0.014 ($p < 0.05$). Moreover, illness and quality of life were not related; on the other hand, the correlation between solid waste and drinking–using water problems showed statistically significant at 0.025 and 0.042 ($p < 0.05$) respectively.

From the environmental problem information in the area, to use chemical for pest control report showed that Klong Noi District had a total of Siam pomelo farmland 125 rai. Eighty-two households were pomelo farmer. According to collect sampling group from 50 people, 50% were male, and 36% were female. Most of the samples were 41–50 years old.

Using pesticide data showed that most of the samples (54%) used chemical pesticide from 6 months to 1 year. 85% had good knowledge of using the pesticide. The samples were randomly assigned to blood drawing for checking the level of cholinesterase, which was divided into four levels: standard, safe, risk, and unsafe. Most of the sample (42.85%) had cholinesterase at an unsafe level and followed by 37.14% at-risk level.

The relationship between demographic factors showed that age, knowledge, and behavior were correlated statistically significant with the level of cholinesterase ($p < 0.05$).

Table 4: Relationship between personal data and health status

Variables	χ^2	df	p-value
Sex	0.658	2	0.417
Male			
Female			
Age	18.938	1	0.000*
0–15			
16–30			
31–45			
46–60			
61+			
Education	1.162	1	0.281
Uneducated			
Primary School			
Middle School			
High School			
Bachelor's degree			

Variables	χ^2	df	p–value
Other			
Income	0.633	1	0.426
<.3500			
3,500–5,000			
>5,000–10,000			
>10,000			

* (= Fisher's Exact test, * p < 0.05)

Discussion

Participation is the result of concordance with requirements and directions of change. There must be so much as to initiate a project for implementation. The first reason that people participate should be to realize that all actions are made by a group of community leaders or through the organization. Therefore, community leaders and organizations must act as leaders to achieve change.

In terms of health promotion, is a process to support groups and individuals to be able to adequately control their health and improve their overall well–being which includes physical health, mental health and lifestyle.

The factors that determine health status include social context, economy, culture, traditions, values, and ecosystems. In this regard, people who have knowledge and ability in taking care of health and protect themselves from the dangers of chemicals used in

Conclusion

People have the quality of life in the middle to good level. Environmental problems in the report have been identified that people in the community, 96% have solid waste problems which affect their health. Mostly, animal and insect disease problem caused by mosquitoes, dengue fever causes in the area. 70% have drinking and using water problem. 34% have chemical pesticide problem. Moreover, there are domesticate animal problem, wastewater problem, damaged road problem, dust, smoke, and noise problem and

also including of food sanitation problem. The solution for solving environmental problems is cooperation and participation to do that everyone should know about information problems and the effect by brainstorming from representatives and share solution idea. Some villages start to manage garbage problems follow the way that all people agree with and can work together.

Moreover, coordinate with government agencies is essential in the case to provide clean water supply for communities; as well as the cleanliness of every household.

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