Original Article

Comparison between Health Status and Self-Health Perception of Health Promotion Leader Volunteers, Urban Communities, Thailand

Puangpaka Kongvattananon[1] ; Natthananporn Sanguangklin[1] ; Kunnikar Chaisitsa-nguan[1] ; Chonthicha Chaosutthichod[1]



Puangpaka Kongvattananon

[1] Faculty of Nursing Thammasat University, Pathumthani, Thailand.

*Address Correspondence to author:
Puangpaka Kongvattananon
Faculty of Nursing Thammasat University,
Pathumthani 12121, Thailand.
email: puangpaka@nurse.tu.ac.th

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Abstract

OBJECTIVES: The aim of this study is to compare the health status and health self perception (HSP) of those who received health promotion leadership program training in order to become Health Promotion Leader Volunteers living in the urban community.

MATERIALS AND METHODS: This study includes simple random sampling of 143 participants, in urban communities of Pathum Thani province, Thailand. Data were collected by two record forms: 1) a health examination record form completed by healthcare providers, and 2) a health self perception record form completed by the participants. Data analysis were descriptive statistics, Chi-square test and Fisher's exact test

RESULTS: The age of participants ranged between 26 and 86 years. Their physical examinations were as follows: 62.9% had an underlying disease, 60.8% showed abnormal results on a chest x-ray (infiltration, consolidation) and completed blood count (anemia, high WBC) 33.6% were farsighted, 30.8% had high cholesterol, 28.7% were overweight, and 21.7 a high level of stress. However, 94.23% of the participants perceived their condition, 69.23% on physical examination, that were the healthy. The results on their physical examination and their health self perception were significantly different ($\chi^2 = 8.654$, $p < 0.05$).

CONCLUSION: The health self perception and the results of the participants' physical examination were inconsistent. Healthcare providers should implement self-awareness and health education programs that are suitably tailored.

Keywords: health status, health self perception, HSP, urban community, health screening, physical examination

The overall health of the Thai population from 2000 to 2016 has improved; life expectancy at birth has increased from 71.1 years to 75.5 years, and health life expectancy has also increased from 63.4 to 66.8 years.[1] However, noncommunicable disease (NCD) is the main cause of death, responsible for 74% of deaths in Thailand. The four main NCDs are 1) cancer, 2) cardiovascular disease, 3) diabetes, and 4) chronic obstructive pulmonary disease (COPD).[2] In 2014, the percentage of the Thai population diagnosed with diabetes mellitus increased by 29% and hypertension increased by 15%.[3] The leading reasons for this include people not engaging in enough physical activity and having an unhealthy diet.[4] Pathum-Thani is located in the central part of Thailand; it is north of Bangkok and is considered to be an urban community.[5] More than 25% of people living in Pathum-Thani have a NCD.[6] There are factories, agricultural areas, and residential areas in Pathum-Thani, and a proportion of the population are migrant workers from neighboring countries. Most of those registered are elderly,[7] belonging to several religions, including Buddhism and Islam.

Health perception leads to changing health behavior and this can affect one's health status.[8] Health promotion enabling people to improve health and reduce risks, emphasizes well-being and cross-sector engagement. Health perception is a good predictor of people's future healthcare.[9] However, the individuals' health perception and health status may be different. For

example, older people perceive poor health more often than younger people, and people with a low level of income are more likely to report poorer health than people with a higher income.[10] Good health status depends mainly on individual health perception.[11] At the same time, health perception may be different from medical laboratory results, as suggested above.[12] These contradictory perceptions may affect people's health status and can cause health problems as well. The most common problems found today are chronic diseases that are mainly caused by human behaviors, such as obesity, diabetes mellitus, and high blood pressure.[13] The results of this study are part of a broader piece of research entitled "Academic service and proactive health promotion outcomes in people partnership communities: Khlong Luang municipality and Tha Khong municipality".

In this study, the conceptual framework of holistic health as defined by the WHO is used. Holistic health comprises physical, mental, spiritual, and social health.[9] These four significant elements of health are interrelated and affect each other. Currently, health status is evaluated by using medical scientific methods performed by healthcare providers. At the same time, self-health perception depends upon an individual's knowledge and past experience. The difference between health status and health perception can affect one's health behavior.

The health status and health self perception are interrelated to health behavior. Health self-perception was a powerful predictor of health behavior and morbidity. Thus, both constructs are essential to gain a comprehensive understanding of health outcomes and holistic health status.

Materials and Methods

Descriptive cross-sectional research design was conducted in a rural community. The objective was to compare the health status of people assessed by medical scientific methods and the health self perception of people. People living in an urban community in Pathum Thani province received training in a health promotion leadership program, with participants from three communities. There were 182 leaders, overall, according to Taro Yamane.[14]

$$n = \frac{N}{1+Ne^2} \quad (N = 182, e = 0.05)$$

There were 126 samples with 20% included additionally to account for loss during the process,[15] so the final number was 152. People were selected using the simple random sampling method. This study has included 143 samples.

Research instruments

The tools comprised background information, health record forms of physical examinations, a health self perception questionnaire and breast and cervical cancer knowledge questionnaires. The questionnaires were developed from health promotion of World Health Organization[9] and literature reviews. The validity of all the questions were confirmed by three experts (one physician, one nurse, one health trainer). It contains general information, and health information on the individual and families. The health record forms comprised two parts:

Part 1: The health examination record forms comprised a physical examination and laboratory results such as chest x-rays, a blood test, a urinary analysis, breast cancer screening, dementia screening, and mental health screening. These examinations were assessed by physicians, technicians, and nurse practitioners. This part also included questionnaires related to breast cancer and cervical cancer.

Part 2: Health self perception, where the participant completed the questionnaires by herself/himself. For the Health record forms, the content validity was 0.94. The Health self perception forms had an internal consistency reliability of 0.83.

Data Collection

This research has been approved by the Ethical Review Sub-Committee Board for Human Research Involving Sciences, Thammasat University, No. 3, [COA No.048/2562]. After receiving permission from the committee to conduct data collection, a letter of clarification was sent to the mayors of the study area, and they were given essential information. Information about the purpose of the study was also given to community leaders. Simple random sampling was used for 143 participants, selecting them from the name lists of people from three communities under the responsibility of the community leaders. The period of this research was one year, from October, 2019 to September, 2020.

Before collecting the data, we explained the objectives and the method of this study to all of the participants until they clearly understood the study; we also asked for their permission to use data that comprised a chest x-ray, a blood test (complete blood cell, fasting blood sugar level, and a cholesterol and liver function test), a urinary analysis, a breast examination, dementia screening, and mental health problem screening. The participants had to answer the questionnaires without mentioning anyone's name. If they consented to participate in this research, they signed the consent form and important information was requested and they had their health examined.

The data on their health were recorded and processed. For any result that showed any sign of abnormality, the information was transferred to the function concerned and the researchers closely collaborated with the healthcare provider for further actions needed and based on the proper or healthcare benefits of each participant.

Data Analysis

Descriptive statistics were used in personal data: frequency distribution, percentage, average, standard deviation. Mean and standard deviation calculated scores of knowledges regarding breast cancer identified by each item. Inferential

statistics used to compare participants' health perceptions and their health examination with chi-squared and fisher's exact test.

Results

This study focused on the health status of people living in the urban community, where there were factories, agricultural areas, and residential areas. The participants came from three communities (Community A, Community B, and Community C) that had health promotion leader training. As indicated earlier, there were 143 samples in this study.

The characteristics of the participants show that the majority of them were female (72.73%), aged between 26 and 86 years. Most of them were older than 60 years, 58.7% were married, and 66.4% were living in nuclear families. Most of them graduated from primary school at 60.1% and high school at 28.7%. Almost half of them were housewives. Nearly half of the participants had incomes of less than 5,000 THB/month. Only 2.1% had sufficient income and savings. More than half (66.4%) had two to four persons in the family and 62.9% had at least one underlying disease. The most frequently found underlying diseases were high blood pressure (33.4%) and diabetes mellitus (31.5%). There was one to three family members that had a chronic disease at 25.2%, and the characteristics of the diseases were old age (49.7%), limited activity in daily living (18.9%), mental problems (2.8%), and being bed ridden (1.4%).

The health status of the participants from the health examination report and their health self perception within the past three years was recorded. The results showed that the health self perception and health examination report from the laboratory, especially the lipid profile test ($\chi^2 = 12.54$, $p < 0.001$)) and blood sugar blood level ($\chi^2 = 10.87$, $p < 0.05$), were significantly different. The BMI, complete blood count, liver function, kidney function, vision test, and chest x-ray were not significantly different between the self-health perception and the results of the health examination, as shown in detail in Table 1.

Table 1: Comparison between the health status of the participants and the actual health examination report.

Health status	Results of health examination (n = 143), n(%)	Health status based on the person's perception (n = 143), n(%)	Statistical value	*p*-value
Gender				
Female	104(72.73)	104(72.73)		
Male	39(27.27)	39(27.27)		
BMI			2.75[b]	0.298
Normal	64(44.8)	66(46.2)		
Skinny	3(2.1)	1(0.7)		
Overweight	19(13.3)	5(3.5)		
Obese	57(39.9)	71(49.6)		
Lipid profile test			12.54[a]	0.001*
Not applicable	79(55.2)	79(55.2)		
Normal	10(7.0)	49(34.3)		
Abnormal	54(37.8)	15(10.5)		
Blood sugar level			10.87[a]	0.043*
Not applicable	79(55.2)	79(55.2)		
Normal	15(10.5)	26(18.2)		
Abnormal	49(34.3)	38(26.8)		
Complete blood count			3.23[b]	0.103
Not applicable	50(35.0)	50(35.0)		
Normal	87(60.8)	91(63.6)		
Abnormal	6 (4.2)	2(1.4)		
Liver function			2.04[b]	0.95
Not applicable	50(35.0)	50(35.0)		
Normal	90(62.9)	89(62.2)		
Abnormal	3(2.1)	4(2.8)		
Kidney function			2.54[b]	0.134
Not applicable	50(35.0)	50(35.0)		
Normal	89(62.2)	91(63.6)		
Abnormal	5(2.8)	2(1.4)		
Vision test			2.28[a]	0.231
Not applicable	66(44.8)	64(44.8)		
Normal	7(4.9)	8(5.6)		
Abnormal	72(50.3)	71(49.6)		
Chest x-ray			3.23[b]	0.081
Not applicable	54(37.8)	54(37.8)		
Normal	84(58.7)	88(61.5)		
Abnormal	5(3.5)	1(0.7)		

Note* a = chi-squared, b = Fisher's exact test

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The health status was assessed by the healthcare provider and the health perception of the participants was recorded. The results showed that health self perception was statistically significantly different from the health status assessed by healthcare provider, especially regarding dementia screening, fisher's exact test revealed a statistically significant association between normal group and risk of dementia group ($p < 0.001$). However, the health perceptions from the breast cancer screening examination of the females and males and the stress test screening were not statistically significantly different from the health status assessed by the healthcare provider. Based on the health examination, 54 participants (37.8%) had an underlying disease, and 42 participants (29.4%) had a high risk of an underlying disease. Most of the participants (n = 112, 78.3%) perceived their health as healthy or very healthy. Only one participant perceived him/herself as unhealthy. The results of the health examination and health perceptions were significantly different ($\chi^2 = 8.65$, $p < 0.05$), as shown in detail in Table 2.

The overall mean scores of the participants' knowledge regarding breast cancer is (1.49 ± 0.38). The mean scores for the items are similar. The first three items that have the highest mean scores are: Receiving hormonal therapy or taking combined pills for a long period of time is related to breast cancer (1.64 ± 0.67); Breast cancer is the second cause of death among Thai women (1.57 ± 0.71); and a woman who has a direct family member diagnosed with breast cancer being more likely to have breast cancer (1.55 ± 0.73). The item that had the least mean score was breast cancer can be cured if it is detected at the first stage (1.14 ± 0.40), as shown in detail in Table 3.

The overall mean scores of the participants' knowledges regarding cervical cancer is (1.64 ± 0.37). The first three items that had the highest mean scores are: using a condom cannot prevent HPV infection (1.94 ± 0.78); A woman who has a direct family member diagnosed with cervical cancer is at higher risk of being diagnosed with cervical cancer (1.82 ± 0.76); and Cervical cancer is caused by HPV infection (1.76 ± 0.67). The item that had the least mean score was cervical cancer should be screened annually when you are older than 35 years (1.29 ± 0.57), as shown in Table 4.

The holistic health was the physiological aspect (Screening NCD, BMI, Breast cancer screening et al.), the physiological aspect (Stress test screening, Dementia screening), sociologic aspect (knowledge, social support) and congruence with the person's own perception.

Table 2: Comparison between the health condition screening of the samples and their own health perception (n = 143).

Health status	Results of health examination (n = 143), n(%)	Health status based on the person's perception (n = 143), n(%)	Statistical value	*p*-value
Breast cancer screening examination				
Female			1.94[b]	0.431
Not applicable	55(38.5)	55(38.5)		
Examined/assessed	49(34.3)	49(34.3)		
Normal	47(32.9)	48(33.6)		
Abnormal	2 (1.4)	1(0.7)		
Male			4.10[b]	0.095
Not applicable	16(11.1)	16(11.1)		
Examined/assessed	23(16.1)	23(16.1)		
Normal	22(15.1)	22(15.1)		
Abnormal	1(1.0)	1(1.0)		
Dementia screening			11.31[b]	0.034*
Not applicable	76(53.1)	76(53.1)		
Normal	64(44.8)	57(39.9)		
Risk	3(2.1)	10(7.0)		
Stress test screening			2.47[b]	0.153
Not applicable	71(49.7)	71(49.7)		
Normal	33(23.1)	32(22.4)		
Lower than average	8(5.6)	2(1.4)		
Higher than average	31(21.7)	38(26.6)		
Health Status			8.65[a]	0.036*
Unhealthy/Illness	32(30.77)	6(5.77)		
Healthy	72(69.23)	98(94.23)		
No diseases	16(15.39)	22(21.16)		
Health with low risk	27(25.96)	42(40.38)		
Health with high risk	29(27.88)	34(32.69)		

Note* a = chi-squared, b = Fisher's exact test

Table 3: Mean and standard deviation of the scores of knowledge regarding breast cancer identified by each item (score ranges between 1-3) n = 143.

Item	Mean ± SD
1. Breast cancer is the second cause of death among Thai women	1.57 ± 0.71
2. Breast cancer can be cured if it is in the first stage	1.14 ± 0.40
3. Breast cancer can be prevented by eating clean food	1.51 ± 0.70
4. A woman that has a direct family member diagnosed with breast cancer is more likely to have breast cancer	1.55 ± 0.73
5. Receiving hormonal therapy or taking combined pills for a long period of time is related to breast cancer	1.65 ± 0.67
6. You have knowledge and are able to do breast self-examination	1.54 ± 0.77
Overall	1.49 ± 0.38

Table 4: Mean and standard deviation of the scores of knowledge regarding cervical cancer identified by each item (score ranges between 1-3) n = 143.

Item	Mean ± SD
1. Cervical cancer is caused by HPV infection	1.76 ± 0.67
2. Polygamy causes higher risk for having cervical cancer	1.30 ± 0.56
3. Using a condom cannot prevent HPV infection	1.94 ± 0.78
4. A woman that has a direct family member diagnosed with cervical cancer is at higher risk of being diagnosed with cervical cancer	1.82 ± 0.76
5. Cervical cancer can be prevented by being vaccinated	1.38 ± 0.69
6. Cervical cancer should be screened annually when you are older than 35 years	1.29 ± 0.57
Overall	1.64 ± 0.37

Discussion

Most of the participants in this study were of an aging population who were older than 60 years. The results of the health status indicated that 60.8% of the participants had normal results on their complete blood count. The participants had at least one underlying disease, such as diabetes or high blood pressure. This is congruent with the overall health status of Thai people in that NCDs are the most commonly found diseases across the country.[16, 17, 18] Some of the participants perceived their health status differences from the physical examination results because they had no sign or symptoms of their respective diagnosed diseases. Regarding the dementia screening, the results showed that the majority of the participants were in the normal range and only three of them were at risk of developing dementia. This is congruent with data from the THAITGRI organization, which found that 50% of older adults had dementia.[19,20] According to the stress screening, only one-fourth (23.1%) of the participants were in the normal range of the stress test, and one-fourth (21.7%) of them had higher stress than the average. The results shown from this study are congruent with the statistic health status of Thai people in general.[21] Regarding the health status of the 72 participants (49 females, 23 male) were breast screening examination, only two showed abnormal signs of breast cancer (one female, one male); however, 38.5% of the female participants refused to take the breast cancer screening. The rate of the screening refusal in this study was higher than that of other some provinces in Thailand, such as Kanchanaburi and Rayong; however, the screening rate was similar for Pattani and Narathiwat provinces which is predominantly a Muslim community.[21] There was one Muslim community in this study, and previous studies have found that Muslim women were less likely to receive breast cancer screening. There is a belief among Muslim women that their bodies should not be revealed to others except their husbands. This factor made the rate of breast cancer screening for Muslim women lower than others. Congruent with the study of Racine et al.,[22] it was found that 32% of the Muslim women perform breast self-examinations, only 12% received clinical breast cancer screening, and 6.7% received a mammogram test. The most important obstacles were a lack of knowledge of breast self-screening, and their cultural and religious beliefs about body revelation.[22-24] An individual's attitude breast self-screening examination was influenced by their knowledge, their perception of disease risk, and health behavior.[23]

More than 60% of the participants had abnormal laboratory results based upon their health examinations. However, more than 70% perceived that they were in good health and did not have any health problem. This can be explained in that the diseases or health problems that they have still do not show any sign of abnormality at the early stage. Therefore, health screenings or health examinations are very important for the prevention of sickness. Early detection of a disease can reduces the severity of the sickness, especially for a disease that can be cured at the early stage, such as cancer.[17] When considering the overall knowledge score for breast cancer, the study illustrated that the total score was at the average level and the participants realized that breast cancer is the second cause of death for Thai women. This result was congruent with previous study in that most Thai people have knowledge about

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breast cancer from an average to good level; however, knowledge and skill concerning breast self-examination were quite low and the individual's lacked confidence.[23] Interestingly, the participants in this study had more knowledge regarding cervical cancer than breast cancer. However, they were less aware that cervical cancer screening should be performed at the age of 35 and must be rechecked annually, especially among Muslim women. The results of this study are congruent with previous studies in Thailand and many other countries.[22,24,25] The health self perception and the results of the participants' physical examination were inconsistent. The incongruence between perceived health and actual health status has significant implications for individual health behaviors and health outcomes. When individuals perceive their health to be better than it objectively is, they may underestimate the severity of existing conditions, delay seeking medical attention or neglect prevention behaviors. Healthcare providers or volunteer health persons should implement self-awareness and health education programs that are suitable for them.[26] A physical examination campaign should be provided regularly for the people living in the community.

Conclusion

The health self perception and the results of the participants' physical examination were inconsistent. Many people perceived diseases by their signs and symptoms, however, as most of the non-communicable diseases do not show these, they remain undetected. Healthcare providers should promote the importance of rechecking and an annual physical examination, self-breast examination, self-awareness, self-regulation and health education programs or intervention that are suitable for each community, respecting their belief, and taking into account their health perception and the cultural context. Health volunteers in the urban community should be concerned with people's risk behavior and should enhance health promotion behaviors for all.

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Conflict of interest

All authors declare there is no conflict of interest in this research project.

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