The Association between Health Beliefs and Drug Use among the Elderly in Wiang Chai District, Chiang Rai Province

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Abstract

Background: Health beliefs of a person's influence their seeking for self-care, lifestyle, or health behavior for each individual subordinate many factors.

Objective: To study personal factors and health belief patterns associated with drug use among the elderly in Wiang Chai Sub-district, Wiang Chai District Chiang Rai

Methods: This cross-sectional study randomly selected the elderly sample group aged 60 years total 356 samples were selected from 923 elderlies based on the Taro Yamane sample size formula. Stratified Random Sampling from 4 villages out of 12 villages in Wiang Chai district Chiang Rai province.The data were statistically analyzed for percentage, standard deviation, while chi-square was analyzed for inferential statistics to examine the correlation between the health beliefs model and binary logistic regression for analysis demographic information and drug use among the elderly.

Results: The results showed that Elderly people had a score of health belief model at a very good level of 191 people (50.8 percent), and use drug was a very good level of 341 people (90.7 percent). The result found that association between the health belief model with drug use, age with drug use, status with drug use, and comorbidity with drug use of the elderly were a statistically significant correlation at the 0.05 level.

Conclusion: The results of this research can be applied for planning information and determining the guidelines for the adjustment of the elderly's drug use.

Keywords: *Association, Health Beliefs, Drug Use, Elderly*

Introduction

Thailand is entering an aging society as the elderly population above 60 years is now higher than 10% of the total population judging by the criteria prescribed by the United Nations and the current global population structure trend[(1)]. Thailand's elderly population is quickly and consistently increasing from 6.8% in 1994 to 9.4%, 10.7%, and 12.0% in 2002, 2007, and 2011 respectively. A surveyin 2014revealed that Thailand had 14.9% elderly population (13.8% male and 1.1% female) or approximately 10 million people[(2)].In addition, the 2010 report indicated that Thailand showed 9% of the population aged 65 years and above. This ratio will increase to 14% in 2021 and 20% is expected in 2031. It is therefore

vital for the preparation of an elderly care support system. The 2013 report by the Office of Women's Affairs and Family Institute reported that Thailand comprises approximately 21.4 million families and most of which are nuclear families accounting for 52.3%, 34.5% extended families, 12.6% living alone, and 0.6% living with a non-relative. Nuclear families and single people are also increasing. Many elderly people are thus left alone and drug use problems in the elderly are detected frequently due to chronic illnesses among them. It was found that the use of various drugs among the elderly aged 70 years and above appeared to have side effects three times higher than those aged less than 50 years old[3].

Thailand Information Center 2016 report indicated that Wiang Chai District constituted a total population of 813 elderly people aged 60 years and above in Wiang Chai Sub-district showed a high number of using drugs instead of seeing the doctors due to physical and psychological constraints as well as financial burdens for their kids. In addition, caregivers tend to avoid taking the patients to see the doctor for follow-up and request a prescription of the same drugs. It was found that some cases take the same medicines for years without seeing the doctor. The researchers foresee the problems causing health problems and to study personal factors and health belief patterns associated with drug use among the elderly in Wiang Chai Sub-district, Wiang Chai District Chiang Rai.

Methodology

This cross-sectional study randomly selected the elderly sample group aged 60 years total 356 samples were selected from 923 elderlies based on the Taro Yamane sample size formula. Stratified Random Sampling from 4 villagesout of 12 villages in Wiang Chai district Chiang Rai province including Moo 2 Ban Rong Bua Loi, Moo 17 Ban Sri Wiang, Moo 7 Ban Dai Ku Kaew, and Moo 9 Ban Chainarai.

Sample group selection criteria:

1. Male or female aged 60 years and above
2. A resident of Moo 2 Ban Rong Bua Loi, Moo 17 Ban Sri Wiang, Moo 7 Ban Dai Ku Kaew, and Moo 9 Ban Chainarai for more than 1 year
3. Registered and listed on subsistence allowancerecipient in the area
4. Agree to participate in this research project

Criteria for screening out the sample:

1. Diagnosed brain-related illnesses such as dementia
2. Unable to communicate
3. Deny participation in the research project

Research Instruments

The research instrument was an interview-stimulating questionnaire consisting of 3 parts.

Part 1 Demographic Information: This part consists of 7 check-list questions i.e. gender, age, marital status, education, career, income, congenital disease.

Part 2 Health Belief Model: This 5-Likert scale questionnaire (usually, frequently, occasionally, sometimes, never) consists of 30 questions and covering 6 aspects i.e. (1) perception on the risk of disease (2) perception on chronic level of disease (3) perception on benefits (4) perception on obstacles (5) factors stimulating action (6) shared factors.

Part 3Medicine use among elderlies in Wiang Chai Subdistrict: This 5-Likert scale questionnaire consists of 18 items covering 6 aspects i.e. (1) Right Drug (2) Right Patient (3) Right Time (4) Right Route(5) Right Dose (6) Right Technique.

Instrument Validation

The researcher recruited 3 experts to evaluate the content validity and reliability of the questionnaire for the instrument validation process. The validity and reliability were at .05 and the questionnaire was revised and tried out with 40 samples holding identical characteristics with the population. The questionnaire also underwent item analysis and the Cronbach Alpha Coefficient scores were at .075.

Data Analysis

The data were statistically analyzed for percentage, standard deviation, while chi-square was analyzed for inferential statistics to examine the correlation between the health beliefs model and binary logistic regression for analysis demographic information and drug use among the elderly.

Results

The demographic information of 376 respondents was reported. Most of them were 212 females (56.4%), aged 60-70 years old accounting 235 respondents(62.5%), married accounting for 232 respondents (61.7%), primary education accounting for 154 respondents (41.0%), no career accounting for 159 respondents (42.3%), inadequate income accounting for 188 respondents (50.0%), no congenital disease accounting for 191 respondents (50.8%).

Table 1 showed that the health beliefs model, overall, were found implemented at a high level ($\overline{X}$ = 4.21; S.D. = 0.39). The individual aspects analysis showed that benefit perception was implemented at the moderate level ($\overline{X}$ = 3.37; S.D. = 0.46) followed by violence perception also at the moderate level ($\overline{X}$ = 3.63; S.D. = 0.33) respectively.

Table 1 Frequency, percentage, mean and standard deviation of the respondents answering the questionnaire on health belief model

Health Belief Model	Behavior						
	Never	Sometimes	Occasionally	Frequently	Usually	$\overline{X}$ (S.D.)	Meaning
1. Opportunity (Model 1)	0 (0.0)	1 (0.30)	37 (9.80)	320 (89.9)	18 (4.8)	4.38 (0.37)	High
2. Chronic Level (Model 2)	0 (0.0)	9 (2.4)	299 (79.5)	68 (18.1)	0 (0.0)	3.63 (0.33)	Moderate
3. Benefits (Model 3)	0 (0.0)	47 (12.5)	275 (73.1)	54 (14.4)	0 (0.0)	3.37 (0.46)	Moderate

Table 1 continuous

Health Belief Model	Behavior						
	Never	Sometimes	Occasionally	Frequently	Usually	$\overline{X}$ (S.D.)	Meaning
4. Obstacles (Model 4)	0 (0.0)	3 (0.8)	9 (2.5)	179 (47.5)	185 (49.2)	4.77 (0.34)	High
5. Actionstimulating Factors(Model 5)	1 (0.3)	1 (0.3)	4 (1.1)	276 (73.3)	94 (25.0)	4.64 (0.37)	High
6. Shared Factors (Model 6)	0 (0.0)	0 (0.0)	46 (12.2)	268 (71.3)	62 (16.5)	4.44 (0.44)	High
Total Mean						4.21 (0.39)	High

Table 2 showed that drug use among the elderly following the 6R Principle, overall, revealed implementation at the high level ($\overline{X}$ = 4.36; S.D. = 0.43). The individual aspects analysis showed that Right Route was found implemented at the moderate level ($\overline{X}$ = 3.42; S.D. = 0.63).

Table 2 Frequency, percentage, mean and standard deviation of the respondents on medicine use among the elderly following 6R Principle

Drug Use Principle (6R)	Behavior						
	Never	Sometimes	Occasionally	Frequently	Usually	$\overline{X}$ (S.D.)	Meaning
1. Right Drug	0 (0.0)	5 (1.4)	64 (17.0)	239 (63.5)	68 (18.1)	4.29 (0.58)	High
2. Right Patient	0 (0.0)	1 (0.3)	24 (6.4)	188 (49.9)	163 (43.4)	4.55 (0.53)	High
3. Right Time	5 (1.3)	12 (3.2)	128 (44.0)	173 (36.1)	58 (15.4)	3.92 (0.75)	High
4. Right Route	0 (0.0)	2 (0.5)	297 (79.1)	48 (12.7)	29 (7.7)	3.42 (0.63)	Moderate
5. Right Dose	0 (0.0)	0 (0.0)	1 (0.3)	4 (1.1)	371 (98.7)	4.99 (0.09)	High
6. Right Technique	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	376 (100.0)	5.00 (0.00)	High
Total Mean						4.36 (0.43)	High

Table 3 showed the correlation between the health belief model and drug use among the elderly following the 6R Principle. The Pearson Correlation indicated that violence perception showed the relationship with drug use at (r) 0.11 with the significance level of 0.03; correlation of benefit perception and drug use at (r) 0.23 with the significance level of 0.00; correlation of shared factors and drug use at (r) 0.29 with the significance level of 0.00 respectively.

Table 3 Pearson Correlation of health belief model and drug use among the elderly following 6R Principle

Variables	Coefficient (r)	P-Value
Opportunity and Drug Use	-0.048	0.35
Violence and Drug Use	0.11	0.03*
Benefits and Drug Use	0.23	0.00**
Obstacles and Drug Use	-0.01	0.87
Action-stimulating Factor and Drug Use	-0.04	0.48
Shared Factors & Drug Use	0.29	0.00**

* Correlation significance at .05 (2-tailed) ** Correlation significance at .01 (2-tailed)

Table 4 Binary logistic regression analysis of health belief model on drug use among the elderly following 6R Principle

Parameter	B	p-value	Odds ratio	95% C.I. for odds ratio	
				Lower	Upper
Model 2	0.03	0.69	1.03	0.89	1.18
Model 3	0.26	0.00	1.29	1.17	1.44
Model 6	0.26	0.00	1.30	1.16	1.45
Constant	-10.58	0.00	0.00		

Odd adjusted forModel 1, Model 2, Model 3, Model 4, Model 5, Model 6

The binary logistic regression analysis of the health belief model and drug use among the elderly indicated 6R Principle showed the relationship with benefit perception and drug use among the elderly was at an adjusted odds ratio (OR) 1.29, 95% C.I. 1.17 – 1.44, while shared factors and drug use among the elderly was at an adjusted odds ratio (OR) 1.30, 95% C.I. 1.16 – 1.45 as shown in Table 4.

Discussion

The health belief model, overall, was found implemented at the high level ($\overline{X}$ = 4.21; S.D. = 0.39) which corresponded to Amphonphan Khamsam (2015) in her study on Health Belief and Compliance Behavior with Prescribed Medication Among People with Hypertension at Thakham District Health Promoting Hospital, Mueang District, Phrae Province which indicated that, for individual aspects analysis, violence perception and risk on complications resulted from blood pressure against benefit perception and drug use were found at the high level[4]. This also concurred with Nattanun Kumpiriyapong and Siriphan Sasat (2017) in the study on Effect of Health Belief Programme on Medicine used Behavior in Older Persons with Hypertension[5] which revealed that mean scores of drug use among members of the experimental group after receiving health belief model training were higher than those of the pre-receiving health belief model training at the significance level of .05. Also, the mean scores of drug use among members of the experimental group receiving the health belief model were higher than those receiving normal nursing care programs at the significance level of .05.

The results of drug use among the elderly following the 6R principle, overall, revealed that implementation was found at the high level ($\overline{X}$= 4.36; S.D. = 0.43). The results agreed with Kanchana Panyathorn and Natthakul Beengmum (2019) in their study on Medication Use Behaviors in elderly patients with Chronic disease at Chomsri village, Udonthani Province[6] which revealed that drug use among the elderly, overall, showed appropriateness at a high level. The results showed that the elderly punctually see the doctor according to the appointment and inform about their drug allergy. This study also supported the study by Sasithorn Rungsawang (2018) in her study about Factors Related to Polypharmacy Medication Adherence among Older Persons with Chronic Illness[7] which reported that the sample group showed drug use at a high level ($\overline{X}$ = 29.32; S.D. = 3.07). The results also pointed out that risk

perception, violence perception, self-competence perception, and social support perception showed positive relationships with various drug use among the elderly with chronic diseases.

The correlation analysis between health belief model on chronic levels perception and drug use among the elderly following 6R Principle showed the correlation at (r) 0.11 with the significance level of 0.03; benefit perception showed the correlation with drug use among the elderly at (r) 0.23 with the significance level of .00; and shared factors showed the correlation with drug use among the elderly at (r) 0.29 with the confidence level of .00 respectively. The results agreed with Nattanun Kumpiriyapong and Siriphan Sasat (2018) in their study on The Effect of Health Belief Programme on Medicine used Behavior in Older Persons with Hypertension[5] The results revealed that: 1. The mean of medicine use behavior score, after participating in the health belief programme, was significantly higher than that before participating in the programme at the statistical level of .05 2. The mean of medicine use behavior score, after participating in the health belief programme in the experiment group, was significantly higher than the control group participating in the programme at the statistical level of .05 and consistent with Karakurt P and Kasikci M[8], recognition of barriers to appropriate behavior is important for the treatment of hypertension. In those who have high blood pressure and were treated with medication, it is necessary to have appropriate health behaviors. In addition to obtaining knowledge and practice manuals, the elderly with high blood pressure can remember. Understand things well. This awareness will drive older adults to avoid behaviors that pose a health risk by choosing the behavior that they think is the best option. By comparing the benefits from the appropriate behavioral practice and the obstacles or disadvantages that will occur if the inappropriate behavior results in consistent drug use behavior. always and continuously

Conclusion

The health belief model and drug use among the elderly following the 6R Principle showed the chronic level perception, benefit perception, and shared factors revealed the relationship with drug use among the elderly. It is thus necessary that community hospitals should motivate the elderly to be aware of accurate drug use through promoting the implementation of the health belief model for sustainable health care promotion.

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Conflict of Interest: None declared

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Conflicts of Interest: The authors declare no conflict of interest.

Ethical Clearance: Taken from institutional committee.

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