

# Health Promotion of Ottawa Charter and Factors Associated with Quality of Life among Thai Monks

Janthapan S,<sup>1</sup> Sornlorm K,<sup>1</sup> Laohasiriwong W,<sup>1</sup> Nutravong T,<sup>2</sup> Muntaphan S,<sup>1</sup> Nawawonganun R,<sup>1</sup> Aunthakot K<sup>3</sup>

<sup>1</sup>Faculty of Public Health,

<sup>2</sup>Faculty of Medicine,

Khon Kaen University,

Khon Kaen, Thailand.

<sup>3</sup>Kuchinarai District Health Office,

Provincial Health Office, Ministry of Public Health,

Kalasin, Thailand.

## Corresponding Author

Kittipong Sornlorm

Faculty of Public Health,

Khon Kaen University,

Khon Kaen, Thailand

E-mail: kittsorn@kku.ac.th

## Citation

Janthapan S, Sornlorm K, Laohasiriwong W, Nutravong T, Muntaphan S, Nawawonganun R, et al. Health Promotion of Ottawa Charter and Factors Associated with Quality of Life among Thai Monks. *Kathmandu Univ Med J.* 2024;87(3):314-9.

## ABSTRACT

### Background

Health care is a significant health concern among monks, who are a special group that is different from the normal population in terms of access to the health care service system.

### Objective

This study aimed to expose the prevalence of quality of life (QOL) and the association between health promotion and the quality of life of monks in the northeast of Thailand.

### Method

This cross-sectional analytical research was conducted among monks in the northeast of Thailand. Of these, 420 samples were selected using the multi-stage random sampling method. The generalized linear mixed model was used to identify the association between health promotion, health literacy, and quality of life in the northeast of Thailand.

### Result

The results found that 55.24% of the monks had health check-ups, and the prevalence of good quality of life was 49.05 (95% CI: 44.27–53.84). Good quality of life was associated with good implementation of the Ottawa Charter of Health Promotion (AOR = 5.35; 95% CI 3.42-8.36; p-value < 0.001) and adequate to excellent health literacy (AOR = 1.77; 95% CI 1.04-3.03; p-value = 0.034). Furthermore, low stress (AOR = 2.36; 95% CI = 1.07-5.20; p-value = 0.032) and low depressive symptoms (AOR = 2.32; 95% CI = 1.06-5.10; p-value = 0.036) have been associated with improved quality of life.

### Conclusion

Almost half of the monks had a good quality of life. The major factors that determined the good quality of life were health promotion in the Ottawa Charter, health literacy, stress, and depression. Therefore, health policymakers could emphasize the principle of the Ottawa Charter, health literacy in monks, which will be attributed to other health promotions.

## KEY WORDS

Health literacy, Health promotion, Mental health, Ottawa charter, Quality of life, Thai Monks

## INTRODUCTION

The majority of Thai people practice Buddhism, and monks are members of Buddhist institutions. Monks must practice healthy habits. Therefore, the health of monks and novices throughout the country was assessed. It was found that the sickest were those with hypertension and diabetes.<sup>1</sup> The monks' prohibition is that they are not allowed to provide their own food. Therefore, they had to eat food offered by Buddhists. It was found that most Buddhists choose ready-made food to make merit, at 54.9%. Most choose to buy ready-made food from markets or restaurants, at 53.7%. There is a reason to choose food: the convenience of making merit was 62.3%, and most of the food received for alms was savory food cooked with coconut milk, sweet food, and fried food.<sup>2</sup> There were 3 types of food that monks ate most often, at least 4 days a week: 66.5% chili paste, 60.7% coconut milk curry, 53.3% fried food, 44.3% monks, 24.5% sweets and desserts, and soft drinks.<sup>3</sup> A lot of starch and carbohydrates while having a relatively small amount of protein.<sup>4</sup> The monks had a diet high in fat and carbohydrates. Including eating sweet, salty, and fatty foods. As a result, the incidence of various chronic diseases increased among the monks.<sup>5</sup> Monk status is not conducive to exercise, causing the risk of disease. Causing the risk of disease. Therefore, we should focus on health promotion among monks and in the temple. Also, we should create a good environment conducive to health promotion.<sup>1</sup>

It is necessary to obtain cooperation from many sectors, including the public, government, and private sectors to jointly formulate policies to promote the health of monks. However, health promotion based on the health promotion strategy of the Ottawa Charter is where people work together to exchange resources and work together. This process leads to collaboration between individuals and communities, a process that works together to find answers or solutions to everyday problems. The right solution is everyone's duty and responsibility.<sup>6</sup> Health promotion should be integrated development or holistic development, emphasizing the importance of physical, mental, emotional, social, and spiritual aspects. Health promotion in the community where people live together as a group.<sup>7</sup>

The researcher focuses on the health promotion of monks for a healthy life among Thai monks. However, there are limitations to identifying the quality of life (QOL) situation of Thai monks. Including an assessment of the relationship from various health promotion factors. Therefore, this study was conducted to assess the situation of the monks' QOL and the relationship between the principles of health promotion according to the Ottawa Charter. Including the management of health promotion models on the QOL in Thai monks.

## METHODS

This cross-sectional analytical study was conducted among Thai monks who resided at temples located in the northeast of Thailand from January 2022 to May 2023. The study sample was selected among the monks who have been ordained in Buddhism according to the Dhamma and Vinaya for at least 1 year and who are not suffering from chronic illnesses being treated in hospitals or public health facilities, such as hypertension, diabetes, or diseases requiring ongoing treatment. However, the monks migrating or moving to the new temple were excluded.

The sample size of 420 was calculated by a multivariate analysis based on the proportion with a binomial distribution ( $n = [P(1-P)(Z_{1-\alpha} + Z_{1-\beta})^2 / B(1-B)(PO-P1)^{2*} 1 / (1-P)^2]$ ).<sup>8</sup> The required proportions for the sample size calculation were obtained from a previous study conducted the QOL in Thailand.<sup>9</sup> Multistage sampling method was used to select samples. Human Ethical permission for the study was obtained from the Ethics Committee in Human Research of Khon Kaen University, Khon Kaen, Thailand (HE662070).

A face-to-face interview was conducted using a semi-structured questionnaire to assess the QOL and other factors based on the questionnaire that was developed by researchers based on the research question and related literature. The questionnaire consisted of demographic characteristics, health promotion in the Ottawa Charter, and health literacy, health literacy, and mental health, including the Perceived Stress Scale (PSS-10) is a 10-item questionnaire originally developed by Cohen et al. and a self-report depression scale by the Center for Epidemiologic Studies Depression Scale (CES-D).<sup>10-12</sup> In addition, the health-promoting behaviors of the monks consisted of eating food, physical activity, relaxation, stress management, and seeking medical care. The dependent variable was the QOL of monks, adapted from the WHOQOL-BREF-THAI.<sup>13</sup>

The questionnaire was adjusted based on the recommendations of 5 experts who reviewed its content validity resulting in an index of item objective congruence (IOC) of 0.8-1.0. The reliability of the questionnaire was tested using 30 cases with similar characteristics to the samples. The Alpha Coefficient of Cronbach of health promotion behavior, health literacy, implementation of health promotion principles in the Ottawa Charter, stress (PSS-10), and the QOL were 0.72, 0.77, 0.74, 0.81, and 0.78 respectively.

The main factors of interest were the health promotion categories outlined in the Ottawa Charter, classified using Kiess's cut-off points.<sup>14</sup> In addition, the covariates included demographic characteristics, health literacy, and mental health, measured by the Perceived Stress Scale (PSS-10)

and the Center for Epidemiologic Studies Depression Scale (CES-D). Furthermore, the health-promoting behaviors of the monks were assessed in terms of eating habits, physical activity, relaxation, stress management, and seeking medical care. The dependent variable was the QOL of monks, derived from the WHOQOL-BREF-THAI. The total QOL score was categorized into poor (26-60), moderate (61-95), and good (96-130) using WHOQOL-BREF-THAI cut-off points, classified as nominal scales.<sup>13</sup> The data was coded with good QOL as 1 and moderate to poor QOL as 0.

After verification, the data was recorded in Microsoft excel and then imported into STATA program. Descriptive and inferential statistics were used for data analysis. Categorical data were analyzed by frequency distribution and percentage. The mean, standard deviation, median, and maximum minimum were analyzed for continuous data. Bivariate analysis was performed using simple logistic regression to identify the association of each independent variable with QOL. The variables that had p-value < 0.25 proceeded to the multivariable analysis.<sup>15</sup> A generalized linear mixed model (GLMM) of which two provinces were selected to include as 'random effects' was administered to identify the association between interest factors and a good QOL when controlling other covariates. The goodness of fit model was performed and the best correlation structure was selected based on Akaike's information criterion (AIC). The magnitude of associations was presented by an adjusted odd ratio, and the 95% confidence interval (CI) with a level of significance of 0.05.

## RESULTS

The majority of the study participants were 30-59 years old (54.07%), with a mean age of 50 years. Obtaining health promotion through the Ottawa Charter found that the majority of respondents (52.38%) supported modest healthy public policy. 63.33% of them were building a good environment, while 53.33% were also strengthening the community. Overall, the application of the principles of health promotion under the Ottawa Charter was good, at 49.52% (Table 1).

The overall QOL of the monks was moderate to poor i.e. 50.95% (95% CI: 46.16-55.73) (Table 2). Crude analysis by simple logistic regression, including age, number of years of age, annual health check-ups, receiving health advice from health agencies, attending health promotion training, acute illness requiring treatment in an outpatient department, illness with hospitalization, urgent rehabilitation illness, health promoting behavior, perception of health status, health promotion awareness, health literacy, implementation of the Ottawa Charter, stress, and depression (Table 3).

The Generalized Linear Mixed Model (GLMM) was used to examine the relationships between high quality of life and independent variables. Monks with adequate to excellent

**Table 1. Health Promotion by the Ottawa Charter (n=420)**

Obtaining health promotion under the Ottawa Charter	Number	%
<b>Creating a healthy public policy</b>		
Good (49-65)	175	41.67
Moderate (31-48)	220	52.38
Poor (13-30)	25	5.95
<b>Strengthening the Environment</b>		
Good (45-60)	266	63.33
Moderate (29-44)	149	35.48
Poor (12-28)	5	1.19
<b>Strengthening the community</b>		
Good (34-45)	224	53.33
Moderate (22-33)	187	44.52
Poor (9-21)	9	2.14
<b>Personal skills developing</b>		
Good (38-50)	163	38.81
Moderate (24-37)	237	56.43
Poor (10-23)	20	4.76
<b>Modification of health services</b>		
Good (34-45)	192	45.71
Moderate (22-33)	189	45.00
Poor (9-21)	39	9.29
<b>Overall</b>		
Good (195-265)	208	49.52
Moderate (125-194)	199	47.38
Poor (53-124)	13	3.10

**Table 2. Situation of QOL among Thai monks (n=420)**

QOL in Thai monks	Number	%	95% CI
Good (96-130 scores)	206	49.05	44.27 – 53.84
Moderate – Poor (26-95 scores)	214	50.95	46.16 – 55.73

health literacy had a 1.77 times higher quality of life (95% CI: 1.04-3.03; p-value = 0.034). Monks who follow the Ottawa charter at a good level have a 5.35 times higher likelihood of having a good quality of life compared to those who have adopted the principles at a moderate-poor level (95%CI 3.42-8.36; p-value = < 0.001). Monks with low levels of stress were 2.36 times more likely to have a good quality of life than those with moderate levels (95% confidence interval 1.07-5.20; p-value = 0.032). There was a chance of having a good QOL 2.32 times greater than the depressed monks (95%CI 1.06-5.10; p-value = 0.036) than that of non-depressed monks (Table 4).

## DISCUSSION

In our settings, it was found that most of the monks did not receive an annual health check, and more than half had never received health advice from a health authority. In addition, they never attended any health promotion

**Table 3.** The factors related to the QOL among Thai monks using the bivariate analysis (n=420)

Factors	Number	% of good QOL	Crude OR	95% CI	p-value
<b>Age (years)</b>					
<30	64	50.00	1		0.786
30 – 59	226	47.79	0.91	0.52-1.59	
≥60	128	51.56	1.06	0.58-1.94	
<b>Monk status time (years)</b>					
< 10	194	50.52	1		0.627
10 – 19	107	52.34	0.94	0.73-1.20	
≥ 20	88	46.59	1.11	0.70-1.79	
<b>Annual health checks up</b>					
Yes	118	42.02	1		0.010
Never	232	54.74	1.67	1.13-2.46	
<b>Receiving health advice from health authorities</b>					
Yes	235	45.11	1		0.069
Never	185	54.05	1.43	0.97-2.11	
<b>Attending health promotion training</b>					
Yes	343	46.94	1		0.069
Never	77	58.44	1.59	0.96-2.62	
<b>Acute illness requiring treatment in OPD</b>					
Never	386	48.96	1		0.908
Yes	34	50.00	1.04	0.52-2.10	
<b>Sickness requiring hospitalization</b>					
Never	380	48.95	1		0.899
Yes	40	50.00	1.04	0.54-2.00	
<b>Sickness requiring rehabilitation</b>					
Never	389	50.13	1		0.121
Yes	31	35.48	0.55	0.25-1.17	
<b>Health promoting behaviors of monks</b>					
Moderate – poor (31-114)	303	43.89	1		0.001
Good (115-155)	117	62.39	2.12	1.37-3.28	
<b>Perception of health Status</b>					
Poor (0-8)	78	42.31	1		0.133
Moderate (9-11)	170	46.47	1.18	0.69-2.03	
Good (12-15)	172	54.65	1.64	0.96-2.82	
<b>Health promotion awareness</b>					
Moderate – poor (15-55)	159	43.40	1		0.071
Good (56-75)	261	52.49	1.4	0.97-2.14	
<b>Health literacy</b>					
Inadequate – problematic (29-80)	111	28.83	1		<0.001

Adequate – excellent (81-116)	309	56.31	3.18	1.99-5.01	
<b>Implementation of the Ottawa Charter</b>					
Moderate – poor (53-194)	212	27.36	1		<0.001
Good (195-265)	208	71.15	6.55	4.28-10.02	
<b>PSS-10</b>					
Moderate (21-31)	51	23.53	1		<0.001
Low (10-20)	369	52.57	3.60	1.83-7.10	
<b>CES-D</b>					
Depressive (<=22)	54	20.37	1		<0.001
Non-depressive (>22)	366	53.28	4.46	2.23-8.92	

**Table 4.** The multivariable analysis of factors associated with the QOL of Thai monks by GLMM (n=420)

Factors	Number	% of good QOL	Crude OR	AOR	95% CI	p-value
<b>Health literacy</b>						
Inadequate-problematic	111	28.83	1	1		0.034
Adequate-excellent	309	56.31	3.18	1.77	1.04-3.03	
<b>Implementation of the Ottawa Charter</b>						
Moderate poor	212	27.36	1	1		< 0.001
good	208	71.15	6.55	5.35	3.42-8.36	
<b>Stress</b>						
Moderate	51	23.53	1	1		0.032
Low	369	52.57	3.60	2.36	1.07-5.20	
<b>Depression</b>						
Depressive	54	20.37	1	1		0.036
Non-depressive	366	53.28	4.46	2.32	1.06-5.10	

training. This study is consistent with previous studies that found most monks don't have annual health check-ups and are at increased risk of chronic diseases.<sup>16</sup> Furthermore, this study found that annual health checks were correlated with QOL, which is consistent with the previous study conducted in China.<sup>17</sup>

The QOL of monks had an overall QOL at a moderate level. When separating the components, it was found that physical health, the social component, and the environmental component had a moderate level of QOL. On the other hand, the psychological component had a good QOL; this may be due to the monks having practices

that require regular practice of meditation, resulting in a good level of mental QOL.

It was found that the good implementation of the principles of health promotion according to the Ottawa Charter was associated with a statistically significant good QOL. That is, in groups of monks where the temple has implemented the health promotion principles in accordance with the Ottawa Charter, there was 5.35 times the likelihood of a good QOL compared to the measure group having implemented the principles of health promotion according to the Ottawa Charter at a moderate-poor level. In addition, a previous study found that the health promotion principles in the Ottawa Charter also correlated with the QOL and health behaviors of individuals, which is consistent with this study.<sup>18</sup> Furthermore, improving public service systems to be more accessible, which is one aspect of the Ottawa Charter was associated with better QOL and is consistent with this study.<sup>19</sup>

The association between health literacy and the QOL of the monks was found to be excellent, which was associated with good QOL. In other words, for monks with a very good level of health knowledge, there was a tendency for good QOL at 1.77 times compared to the group with a moderate to poor level of health literacy. This study is consistent with previous studies that found that individuals with poor health knowledge have poor health outcomes and poor QOL. Because people's inability to understand and communicate health issues effectively makes it impossible to self-manage in terms of health, monks' low levels of health literacy result in reduced QOL.<sup>20,21</sup> In addition, this study is consistent with previous studies in Australia and Iran showing that health literacy is associated with QOL and from a meta-analysis, health literacy was moderately associated with QOL.<sup>22-24</sup> However, this study was inconsistent with previous studies in Canadian patients,

and a meta-analysis found no association.<sup>25,26</sup>

In terms of stress, the study found that the monks in the low-stress group tended to have a good QOL 2.36 times compared to the moderate group, and in terms of depression, the study found that the group of monks who did not have depression had a tendency to have a good QOL. Compared to the group that falls into the depression category, this is consistent with previous studies that found that a person's stress will result in depression and lead to depression, morbidity, and lower QOL and this study also found that high stress was associated with low QOL.<sup>27,28</sup> Furthermore, several previous studies have confirmed that stress is associated with QOL, which is consistent with this study.<sup>29-32</sup>

## CONCLUSION

The monks' quality of life was mostly influenced by the Ottawa Charter's health promotion, health literacy, stress, and depression. As a result, relevant agencies should adopt the Ottawa Charter's health promotion principles, which have a significant impact on monks' quality of life. In addition, engagement with various forms of health promotion is necessary because more than half of the monks still have a low to moderate quality of life. However, the research findings should be used to create a health promotion model and assess its success using the research methodology.

## ACKNOWLEDGEMENTS

This research was accomplished with great kindness from Buddhist monks at temples located in northeastern Thailand.

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