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# Factors related to home visit behavior of village health volunteers for hypertensive patients who missed appointments

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## ABSTRACT

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Hypertensive patients was at risk of severe complications especially stroke leading to disability or death. Continuous treatment was important. The village health volunteers (VHVs) were a voluntarily who were trained to visit the patients at homes and to encourage patients to continue their treatment. The purpose of this research was to examine factors related to home visit behavior of VHVs for hypertensive patients who missed appointments. This study was a Cross-sectional descriptive research. The sample consisted of 90 VHVs who worked in the Muang district of Nakhon Ratchasima province.

Data were collected using a questionnaire that included questions related to personal characteristics, knowledge regarding hypertension and home visit patients (19 items), perceptions of empowerment (11 items) and home visit behaviors (20 items). The reliability of questionnair on knowledge and perceptions of empowerment was 0.63 and 0.61, respectively. Data were analyzed using descriptive statistics and Chi-square.

The results showed that the average age of the samples was  $54.0 \pm 10.4$  years. Most of them had graduated from elementary school (48.9%), monthly income less than 10,000 baht (82.2%), and had more than 5 years' experience of being VHVs (80.0%). Knowledge, perceptions of empowerment, and home visit behaviors were all at high level, 64.1%, 49.0%, and 52.2%, respectively.

The factors that significantly correlated with home visit behaviors of VHVs were knowledge and income. The results indicated that training was important to the home visit behaviors and can be used as guideline for the development of the empowerment model of VHVs in follow-up visits to community homes.

**Keywords:** knowledge; empower perceptions; village health volunteers; Home visit behavior for hypertensive patients

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**Table 1** Characteristics of participants (n =90)

Variables	n	%
<b>Age (years)</b>		
<30	1	1.1
30-39	8	8.9
40-49	19	21.1
50-59	37	41.1
>60	25	27.8
$\bar{X}$ = 54 S.D.=10.45		
<b>Sex</b>		
male	2	2.2
female	88	97.8
<b>Marital status</b>		
single	7	7.8
married	63	70.0
widowed/divorced/separated	20	22.2
<b>Occupations</b>		
Unemployed	22	24.4
agriculture	29	32.2
employee	21	23.3
own business	13	14.4
government employee	1	1.1
other	4	4.4
<b>Monthly income (baht)</b>		
<10,000	69	76.7
10,000-50,000	21	23.3
$\bar{X}$ = 7,447 S.D.= 7674		
<b>Educational level</b>		
Primary school	44	48.9
Secondary school	13	14.4
High school	24	26.7

**Table 1** Characteristics of participant (n =90) (Cont.)

Variables	n	%
High school		
Vocational school	24	26.7
Bachelor	2	2.2
<b>Work experience (years)</b>	7	7.8
<5		
5-9	18	20.0
10-14	13	14.4
15-19	22	24.4
20-24	7	7.8
>25	11	12.2
$\bar{X}$ = 14 S.D.= 10	19	21.1

**Table 2** Relationship between income, knowledge, empower perception and home visit behaviors of VHV's

Variables	Home visit behavior		$\chi^2$	df	p-value
	Good	Poor			
<b>Income (baht)</b>			4.046	1	0.044
<10,000	35(47.3)	39(52.7)			
$\geq$ 10,000	12(75.0)	4(25.0)			
<b>Knowledge</b>			3.893	1	0.048
High	25(64.1)	14(35.9)			
Low	22(43.1)	29(56.9)			
<b>Empower perception</b>			0.453	1	0.501
High	24(49.0)	25(51.0)			
Low	23(56.1)	18(43.9)			

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## Behavior Factors Related to Recurrent Stroke\*

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### ABSTRACT

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Cerebrovascular Disease (Stroke) is found that for every 15 million patients with Stroke around the world, 5,712,240, or 8.6% were death. It has been estimated that 23 million people around the world will be death from Stroke in 2030 and It is found that at least 1 in every 4 survival will face stroke recurrent for 14% during first year period, and increase to 25% in the fifth year This Case-control study aimed to study the behavior factors affecting the recurrent stroke among the stroke patient. 220 stroke patients at 35-80 years old included 110 recurrent stroke patients as a case group and 110 post stroke patients as a control group. A structured interview questionnaire was applied for data collecting process data was analyzed using Chi-Square test and Stepwise Multiple Logistic Regression.

The study revealed the statistically significant behavior factors related to recurrent stroke (p-value < 0.05) were low dietary control (OR = 4.79, 95 % CI = 1.98-11.54), sedentary behavior (OR = 4.23 ,95%CI = 1.00 -20.41) and discontinue follow up. (OR = 2.16 , 95 % CI = 1.01-4.59). Stepwise multiple logistic regression analysis revealed that low dietary control, and sedentary behavior were statistically significant, predicting recurrent stroke by 11.3%.

Public health nurse and the organizations should cooperate in organizing events low dietary control and sedentary behavior for stroke patients to prevent recurrent stroke.

Keywords: Recurrent Stroke, Behaviors, Health Behavior Factors

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**Table 1** Number, percentage, mean, and standard deviation of the sample personal factors  
(n = 220)

Personal Factors	Cases (110คน )		Controls (110คน )	
	n	%	n	%
<b>Sex</b>				
Male	65	59.1	66	60.0
Female	45	40.9	44	40.0
<b>Age</b>				
35-45	12	10.9	13	11.9
46-59	48	43.6	47	42.7
60-70	38	34.6	38	34.5
71-79	12	10.9	12	10.9
	Min = 35 , Max = 80, Median = 59.5		Min = 36 , Max = 79, Median = 56.0	
<b>Job</b>				
Not working	55	50.0	50	45.2
Farmer	33	30.0	36	32.2
Official/State enterprise	1	0.9	1	0.9
Trade	15	13.6	12	11.7
Hire and Employees	6	5.50	11	10.0
<b>Period stroke</b>				
<1 ปี	12	11.0	13	11.8
1-5 ปี	91	82.7	90	81.8
>5 ปี	7	6.3	7	6.4
	Min = 1 , Max = 10, Median = 2		Min = 1 , Max = 10, Median = 2	

**Table 2** Behavioral factors related to recurrent Stroke (n=220)

Behavioral Factors	Stroke		$\chi^2$	p-value	Odds ratio	95% CI	
	Cases N (%)	Controls N (%)				Lower	Upper
<b>Dietary control</b>							
Low level	27 (79.4)	7 (20.6)	13.91	<0.00***	4.79	1.98	11.54
Medium-High level	83 (44.6)	103 (55.4)			1		
<b>Takeing medicine</b>							
Low level	10 (71.4)	4 (28.6)	-	0.09	2.65	0.80	8.72
Medium-High level	100 (48.5)	106 (51.5)			1		
<b>Sedentary</b>							
Low level	8 (80)	2 (20)	3.77	0.05*	4.23	1.0	20.41
Medium-High level	102 (48.6)	108 (51.4)			1		
<b>Follow up</b>							
Low level	23 (65.7)	12(34.3)	4.11	0.04*	2.16	1.01	4.59
Medium-High level	87 (47)	98 (53)			1		
<b>Drinking and Smoking</b>							
Low level	1 (33.3)	2 (66.7)	-	0.5 <sup>f</sup>	0.49	0.04	5.54
Medium-High level	109(50.2)	108 (49.8)			1		

\* <0.05, \*\*<0.01, \*\*\*<0.001, <sup>f</sup> Fisher' s Exact Test

**Table 3** Multiple Logistic regression with behavioral factors related to recurrent Stroke (n=220)

Factors	Beta	p-value	Adjusted OR	95% CI	
				Lower	Upper
Low in dietary control	1.60	<0.001	4.98	2.06	12.07
Sedentary	1.57	0.05	4.81	1.00	23.57

Constant = -0.28, Pseudo R Square = 0.113

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# FACTORS PREDICTING ACTIVITIES OF DAILY LIVING AMONG STROKE PATIENTS IN BANGKOK METROPOLITAN

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## ABSTRACT

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**Background/ Objective :** Stroke is a major public health problem worldwide because of its prevalence and burden on quality of life and disability of the survivors. This descriptive study aimed to examine factors predicting living ( ADL) of stroke patients who lived in Bangkok.

**Method :** Data was collected from 117 stroke patients at their houses, by using an interview method.

**Result :** More than half were males (56.4%) with an average age of 65.31 (SD=12.14) years, and 58.1% had completed primary school. The duration of stroke was 3 to 17 months and 91.5% of the subjects had chronic diseases. Hypertension and stiffness were the most common chronic diseases and complications. The results from logistic regression showed a relatively strong effect of sex and initial Barthel index (BI) on ADL status ( $OR_{adj} = 3.93\%$ , 95% CI 1.22-12.70, and  $OR_{adj} = 9.67$ , 95% CI 1.57-59.3, respectively). Males had about 3.9 times better ADL status, compared with females. Those who had a high (BI) score (50-70) had about 9.7 times better ADL status than those who had a low BI score (0-45). In addition, inverse effects on ADL status were found for chronic diseases ( $OR_{adj} = 0.06$ , 95% CI 0.007-0.64), complications ( $OR_{adj} = 0.15$ , CI 0.05-0.46), and caregiving demand ( $OR_{adj} = 0.17$ , CI 0.06-0.51).

**Conclusions :** The results support focusing intervention on promotion patients' activities of daily living particularly for those who are female and have chronic diseases. The needs of stroke patient should be assessed and supported continuously. Home visits are recommended to reduce complications and caregiving demands for stroke patients who live in Bangkok.

**Keywords :** Recovery; Stroke; Factors; Activities of Daily Living

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Table 1 Relationship between demographic characteristics, chronic diseases, complication, Initial Barthel index, depression, social support, patient-caregiver relationship, caregiving demand, and Activity of Daily Living Status.

Variables	Activity of Daily Living Status		$\chi^2$ (p-value)
	(BI $\geq$ 75)	(BI < 75)	
<b>Demographic characteristics</b>			
<b>-Gender</b>			
Male	32 (27.4)	34 (29.1)	6.43 (0.01)
Female	13 (11.1)	38 (32.5)	
<b>-Age (year)</b>			
$\leq$ 60	19 (16.2)	22 (18.8)	1.66 (0.198)
> 60	26 (22.2)	50 (42.7)	
<b>-Education Level</b>			
Primary School	27 (23.1)	41 (35.0)	0.18 (0.912)
Secondary	14 (12.0)	23 (19.7)	
No	4 (3.4)	8 (6.8)	
<b>Chronic disease</b>			
Yes	37 (31.6)	70 (59.8)	7.97 (0.005)
No	8 (6.8)	2 (1.7)	
<b>Complication</b>			
yes	11 (9.4)	46 (39.3)	17.25 (0.001)
No	34 (29.1)	26 (22.2)	
<b>Initial Barthel Index</b>			
0-45	29 (24.8)	69 (59.0)	20.059 (0.001)
50-70	16 (13.7)	3 (2.6)	
<b>Depression</b>			
yes	9 (7.7)	24 (20.5)	2.431 (0.119)
No	36 (30.8)	48 (41.0)	

Table 1 Relationship between demographic characteristics, chronic diseases, complication, Initial Barthel index, depression, social support, patient-caregiver relationship, caregiving demand, and Activity of Daily Living Status.

(Cont.)

Variable	Activity of Daily Living Status		$\chi^2$ (p-value)
	(BI $\geq$ 75)	(BI < 75)	
<b>Social support</b>			
high	40 (34.2)	61 (52.1)	0.41 (0.523)
low	5 (4.3)	11 (9.4)	
<b>Patient - caregiver relationship</b>			
high	40 (34.2)	69 (59.0)	2.10 (0.148)
low	5 (4.3)	3 (2.6)	
<b>Caregiving demand</b>			
high	9 (7.7)	44 (37.6)	18.89 (0.001)
low	36 (30.8)	28 (23.9)	

Table 2 Multiple logistic regression analysis between independent variable and dependent variable.

Variables	B	S.E.	Sig	Adjusted OR	95% C.I.	
					Lower	Upper
Gender	1.371	.598	.022	3.938	1.220	12.705
Complication	-1.913	.574	.001	0.148	0.048	0.455
Chronic disease	-2.698	1.152	.019	0.067	0.007	0.643
Initial Barthel Index	2.270	.925	.014	9.676	1.578	59.336
Caregiving demand	-1.743	.546	.001	0.175	0.060	0.510
Constant	1.639	1.940	.398	5.151		

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# BEHAVIOR INFLUENCING FACTORS TO DEPRESSION AMONG UNCONTROLLED DIABETIC TYPE II PATIENTS\*

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## ABSTRACT

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Diabetic is a crucial chronic disease in global public healthcare. It is also found that depression in diabetic patients increase both the disease's severity. The objective of this Cross - sectional survey aimed to study the behavior influencing factors the depression in uncontrolled diabetic type II patients dwelling in Bangkok Metropolitan. Uncontrolled diabetic type II patients at 35 years old and older n =390 were randomly selected by using multi-stage random sampling method as study samples. A structured interview questionnaire was used for data collection. Data was analyzed using Chi-Square test and Stepwise Multiple Regression Analysis

From the study result, study showed that 74.2% (292 persons) of the patients had no depression while 25.1% of patients had depression. 21.3 % (83 persons) at a mild level, while 3.8% (15 persons) at a moderate level of depression. Females exceeded depression level in comparison to males 78.6% (77 persons) and 21.4% (21 persons) respectively. The statistically significant behavior factors related to depression were dietary control (OR=2.56,95%CI=1.34– 4.90) stress management (OR=4.45,95%CI=2.33– 8.52) and medication behavior (OR=3.03, 95%CI=1.37– 6.91) Stepwise multiple logistic regression analysis revealed factors influencing depression in uncontrolled diabetic type II patients were dietary control behavior, stress management behavior and medication behavior were statistically significant.

The study result may be used as a guideline for surveillance among depressed uncontrolled diabetic type II patients for the prevention and resolution of these problem.

Keywords: Depression/ Uncontrolled diabetic type II patients/ Behavior

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**Table1** Depression in uncontrolled diabetic type II patients (n = 390)

Depression	Number	Percent
Moderate depression	15	3.8
Mild depression	83	21.3
Non depression	292	74.9

**Table2** Behavior factors related to depression among uncontrolled diabetic type II patients (n=390)

Behavior factors	Depression		Non Depression	$\chi^2$	p-value	Odds ratio	95%CI Lower- Upper
	Number	Number					
	%	%					
<b>Dietary control</b>							
Low - Moderate	19(43.2)	25(56.8)	8.59	0.003**	2.56	1.34-4.90	
High	79(22.8)	267(77.2)			1		
<b>Medication behavior</b>							
Low - Moderate	13(48.1)	14(51.9)	8.17	0.004*	3.03	1.37-6.71	
High	85(23.4)	278(76.6)			1		
<b>Exercise behavior</b>							
Low - Moderate	79 (27.0)	214(73.0)	2.10	0.147	0.66	0.37-1.16	
High	19(19.6)	78(80.4)			1		
<b>Stress management</b>							
Low - Moderate	86(32.3)	180(67.7)	23.06	0.001***	4.45	2.33-8.52	
High	12(9.7)	112(90.3)			1		
<b>Behavior to meet doctor appointments.</b>							
Low - Moderate	10(27.8)	26(72.2)	0.14	0.700	0.86	0.39-1.85	
High	88(24.9)	266(75.1)			1		
<b>Smoking behavior</b>							
Yes	3(14.3)	18(85.7)	1.38	0.239	0.48	0.13-1.66	
No	95(25.7)	274(74.3)			1		
<b>Alcohol avoidance behavior</b>							
Low - Moderate	0	1(100)	0.33	0.562	0.74	0.70-0.79	
High	98(25.2)	291(74.8)			1		

\* p-value &lt; 0.05, \*\* p-value &lt; 0.01, \*\*\* p-value &lt; 0.001

**Table 3** The predictive factors of depression among uncontrolled diabetic type II patients analyze by stepwise multiple logistic regression.

Factors	Beta	P-value	Adjusted OR	95%CI	
				Lower	Upper
Dietary control	0.939	0.007	2.55	1.29–	5.06
Stress management	1.498	<u>0.001</u>	4.47	2.31–	8.64
Medication behavior	1.103	0.010	3.01	1.30–	6.97

Constant = -0.672

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# FACTORS PREDICTING ACTIVITIES OF DAILY LIVING AMONG STROKE PATIENTS IN BANGKOK METROPOLITAN\*

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## ABSTRACT

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This quasi-experimental study was performed to examine the effects of a stroke prevention program for older adults with hypertension. Participants were elderly club members. Equally assigned into two groups, sixty four participants were assigned to an experimental group and a comparison group based on inclusion criteria. Duration of the study is 6 weeks. The activities were implemented for 4 weeks and evaluation of the program was done for 2 weeks. Activities in this program were modified from Protection Motivation Theory. The intervention program included: Health education by a nurse and watching media about stroke, self-assessment on risk of stroke, sharing experience on self-care behavior, practices and encouragement of medication management, diet control and exercise with an aim to reduce the risk of stroke. Data were collected by interview questionnaires: Perceived Severity, Perceived Susceptibility, Response Efficacy, Self Efficacy and Practices of preventive behaviors against stroke. Statistical analysis was performed by using percentage, mean, standard deviation, Chi-square test, independent t-test and repeated measure ANOVA. The results of this study indicated that, after implementation of all variables than before, the experimental group had higher mean difference score than the comparison group (p-value < 0.05).

Results of this research have suggested the introduction of programs to prevent stroke, to promote health in the elderly with hypertension to prevent stroke, and to maintain elderly's ability on daily activities which suitable to their illnesses. Results of this research have suggested the introduction of programs to prevent stroke, to promote health in the elderly with hypertension to prevent stroke, and to maintain elderly's ability on daily activities which suitable to their illnesses.

**Key Words:** Protection Motivation Theory / Stroke Prevention / Older Adults With Hypertension

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**Table 1** The comparison of the mean scores of perceived severity of stroke, perceived probability, perceived outcome, perceived self-efficacy, perceived preventive behavior among the control group (n= 32)

Variables	$\bar{x}$ (S.D.)	comparison			F-test, df	p-value
		Before	After	Follow up		
<b>perceived severity</b>					27.83, 2	< 0.001
Before	18.7(4.1)	-	6.031**	4.750**		
After	24.7(3.4)	-	-	1.281		
Follow up	23.5(2.5)	-	-	-		
<b>Perceived probability</b>					17.42, 2	< 0.001
Before	21.8(4.1)	-	3.875**	4.844**		
After	25.7(3.6)	-	-	0.969		
Follow up	26.7(2.3)	-	-	-		
<b>Perceived outcome</b>					21.73, 2	< 0.001
Before	21.8(4.4)	-	5.625**	4.625**		
After	27.4(3.6)	-	-	1.000		
Follow up	26.4(2.7)	-	-	-		
<b>Perceived self-efficacy</b>					10.39, 2	< 0.001
Before	25.3(4.7)	-	4.031**	4.344**		
After	29.3(3.9)	-	-	0.313		
Follow up	29.6(3.2)	-	-	-		
<b>Perceived preventive behavior</b>					133.75, 2	< 0.001
Before	35.0(4.8)	-	13.281**	15.00**		
After	48.2(4.5)	-	-	1.719**		
Follow up	50.0(3.3)	-	-	-		

\* p-value < 0.05, \*\* p-value < 0.01

**Table 2** The comparison of the mean scores of independent variable between control group and experiment group (n = 32)

Variable	Experimental group		Comparison group		t	p-value
	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
<b>perceived severity</b>						
Before	18.7	4.1	24.1	3.4	-	-
After	24.7	3.4	21.8	3.9	3.2	0.002
Before – After (d)	6.0	4.9	-2.3	5.1	6.7	< 0.001
<b>Perceived Probability</b>						
Before	21.8	4.1	26.4	3.9	-	-
After	25.7	3.6	24.0	4.7	1.6	0.105
Before – After (d)	3.9	5.1	-2.4	6.6	4.3	< 0.001
<b>Perceived outcome</b>						
Before	21.8	4.4	26.8	4.8	-	-
After	27.4	3.6	24.1	4.2	3.4	0.001
Before – After (d)	5.6	5.7	-2.7	6.1	5.6	< 0.001
<b>Perceived self-efficacy</b>						
Before	25.3	4.7	28.5	5.2	-	-
After	29.3	3.9	27.5	5.1	1.6	0.123
Before – After (d)	4.0	5.7	-0.9	7.1	3.1	0.003
<b>Perceived preventive behavior</b>						
Before	35.0	4.8	47.8	7.3	-	-
After	48.2	4.5	45.2	7.6	1.9	0.062
Before – After (d)	13.3	6.0	-2.6	10.7	7.3	<0.001

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# Factors Related To Multiple Risk Behaviors among Vocational Students in Bangkok<sup>\*</sup>

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## ABSTRACT

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Health risk behaviors was a major public health problem that affected health and quality of life of populations around the world especially adolescence. This cross-sectional study aimed to examine the factors related to multiple risk behaviors among vocational students by using Theory of planned behaviors theory. The sample group was both male and female second year and third year class level students and first year and second year vocational class students studying in vocational school. A sample group of 419 students was attained by stratified sampling. The data were collected using a self-administered questionnaires. Data were analyzed by descriptive statistics chi-square and logistic regression analysis. The results of the study revealed that 27.7% of the sample had 1 kind of risk behaviors which is alcohol drinking (87.9%) , 31.0% of the sample had 2 kinds of risk behaviors which is cigarette smoking together with alcohol drinking (73.7%) and 19.1% of the sample had 3 kinds of risk behaviors.

Factors related to multiple risk behaviors among vocational students were male (OR = 2.80, 95% CI = 1.874 - 4.184), not living with both parents (OR = 1.51, 95% CI = 1.030 - 2.238), age 19-22 (OR = 1.55, 95% CI = 1.054 - 2.298), lower academic performance (OR = 2.12, 95% CI = 1.408 - 3.216), positive attitudes towards multiple risk behaviors (OR = 2.85, 95% CI = 1.903 - 4.289), low subjective norms (OR. = 1.77, 95% CI = 1.112 - 2.828), low perceived behaviors control (OR = 2.37, 95% CI = 1.602 - 3.511), and high intention of acting multiple risk behaviors (OR = 2.78, 95% CI = 1.347 - 5.755). The result of the study addressed a comprehensive program to prevent multiple risk behavior by providing an attitudes adjusted and supportive program to increase perceived behaviors control. Moreover, health care personnel and the school should work collaboratively and pay attention to screening and evaluating multiple risk behavior in the student to promote effective prevention to prevent multiple risk behavior among adolescents.

**Keywords:** Vocational Student, Multiple Risk Behavior, Theory of Planned Behavior

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Table1. Number and percent of general characteristics of vocational students in Bangkok  
(n = 419)

General characteristics	Number	Percentage
<b>Gender</b>		
Male	242	57.8
Female	177	42.2
<b>Age (Years )</b>		
16 - 18	240	57.3
19 - 22	179	42.7
Mean = 18.28 S.D. = 1.213 Max = 22 Min = 16		
<b>Class</b>		
Second year class level	92	22.0
Third year class level	119	28.4
First year vocational class	105	25.0
Second year vocational class	103	24.6
<b>Received money each month (Baht)</b>		
< 1,000	6	1.4
1,001–3,000	156	37.2
3,001–6,000	201	48.0
> 6,001	31	7.4
No data	25	6.0
<b>The adequacy of income</b>		
Enough and saving money	238	56.8
Enough but no saving money	158	37.7
Not enough	23	5.5
<b>Academic performance</b>		
< 2.50	107	25.5
2.50-3.50	186	44.4
> 3.50	87	20.8
No data	39	9.3

Table1. Number and percent of general characteristics of vocational students in Bangkok  
(n = 419) (Cont.)

General characteristics	Number	Percentage
<b>Family's status</b>		
Parents live together	261	62.3
Parental separation	86	20.5
Divorced parents	43	10.3
Father died	23	5.5
Mother died	4	1.0
Both parent died	2	0.4
<b>Housing</b>		
Living with both parents	183	43.7
Living with either their father or mother	127	30.3
Living with sibling	39	9.3
Living with relative	37	8.8
Living with boyfriend/girlfriend	13	3.1
Living with alone	9	2.2
Living with friend	5	1.2
Other	6	1.4



Table2. The relationship between personal factors and multiple risk behaviors among vocational students in Bangkok analyze by Chi-Square.

Personal factors	Multiple Risk Behaviors		Crude OR	95%CI	$\chi^2$	p-value
	Yes	No				
<b>Gender</b>						
Male	147 (60.7)	95 (39.3)	2.800	1.874 – 4.184	25.866	<0.001
Female	63 (35.6)	114 (64.4)				
<b>Class</b>						
Vocational level	110 (52.9)	98 (47.1)	1.246	0.849 – 1.828	1.263	0.283
Class level	100 (47.4)	111 (52.6)				
<b>Family's status</b>						
Parental separation	83 (52.5)	75 (47.5)	1.168	0.786 – 1.734	0.590	0.481
Parents live together	127 (48.7)	134 (51.3)				
<b>Housing</b>						
Not Living with both parents	129 (54.7)	107 (45.3)	1.518	1.030 – 2.238	4.458	<b>0.039</b>
Living with both parents	81 (44.3)	102 (55.7)				
<b>Age (Years )</b>						
19 – 22	101 (56.4)	78 (43.6)	1.556	1.054 – 2.298	4.970	<b>0.016</b>
16 – 18	109 (45.4)	131 (54.6)				
<b>Received money each month (Baht)</b>						
≥ 3,001	123 (53.0)	109 (47.0)	1.376	0.920 -2.058	2.415	0.073
1 – 3,000	73 (45.1)	89 (54.9)				
<b>Academic performance</b>						
≤ 3.00	125 (58.4)	89 (41.6)	2.128	1.408 – 3.216	13.010	<0.001
> 3.01	66 (39.8)	100 (60.2)				

Table3. Factors associated with multiple risk behaviors among vocational students in Bangkok analyze by Chi-Square..

Factors	Multiple Risk Behaviors		Crude OR	95%CI	$\chi^2$	p-value
	Yes	No				
<b>Attitude towards multiple risk behaviors</b>						
Positive attitude	152(60.3)	100(39.7)	2.857	1.903 – 4.289	26.303	<0.001
Negative attitude	58 (34.7)	109(65.3)				
<b>Subjective norms</b>						
Low	58 (61.1)	37 (38.9)	1.774	1.112 – 2.828	5.874	0.010
High	152(46.9)	172(53.1)				
<b>Perceived behaviors control</b>						
Low behaviors control	131(60.4)	86 (39.6)	2.372	1.602–3.511	18.914	<0.001
High Perceived	79 (39.1)	123(60.9)				
<b>Intention of acting multiple risk behaviors</b>						
High intention	28 (71.8)	11 (28.2)	2.785	1.347-5.755	8.173	0.003
Low intention	181(47.8)	198(52.2)				

Table 4. The predictive factors that affect multiple risk behaviors among vocational students in Bangkok analyze by stepwise multiple logistic regression.

predictive factors	Beta	p-value	Adj. OR	95% CI	
				Lower	Upper
Positive attitude towards multiple risk behaviors	0.69	0.003	1.99	1.26	3.16
Male	0.64	0.005	1.09	1.22	2.98
Low Perceived behaviors control	0.64	0.004	1.09	1.22	2.97
Academic performance $\leq$ 3.00	0.51	0.023	1.67	1.07	2.60
Constant	-3.58				

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# EFFECTS OF A NURSE-LED PROGRAM ON FALL PREVENTION BEHAVIORS FOR OLDER ADULTS IN A COMMUNITY IN BANGKOK\*

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## ABSTRACT

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Falling is a major cause for the need for the elderly to receive care. This quasi-experimental research aimed to study the effects of a nurse-led program on fall prevention behaviors of the elderly living in a community in Bangkok. Sixty-one elderly adults living in Ladprao sub-district, aged 70-79 years old were selected. These subjects were capable of performing daily routines of the elderly by themselves, and had normal cognitive function; 28 subjects were assigned to the experimental group and the other 33 subjects were in the comparison group. The experimental group received a program applying Orem's Self-Care deficit theory that comprised of self-care development activities to prevent falling, demonstration and practice exercises to increase balance, home visits by health volunteer, and education of family members in fall prevention. Data related to fall prevention behaviors were collected by interview questionnaires at the pre-test and post-test. The data were then analyzed using independent-sample t-test and paired t-test.

The results showed that, after the nurse-led program, the experimental group had statistically significant higher scores in fall prevention behaviors than before the intervention and also higher scores than the comparison group ( $p$ -value  $< .05$ ). Results support the use of a nurse-led program to promote fall prevention behaviors among elderly in the community. The key component of the program, self-care training, was found to empower older adults to better take care of themselves to prevent falling and reduce dependency, which in turn improved elderly quality of life.

Keywords: Nurse-led program, fall, prevention, elderly, self-care behavior, Orem's Self-Care deficit theory

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**Table 1** Baseline demographics, health status, and home safety environmental between experimental and comparison groups.

Variables	Experimental(n=28)		comparison (n=33)		Statistics	p-value
	Number	%	Number	%		
<b>Demographics</b>						
<b>Sex</b>					1.624	0.264 <sup>a</sup>
Male	6	21.4	12	36.4		
Female	22	84.6	21	63.6		
<b>Age (Years)</b>					-0.182	0.855 <sup>b</sup>
70-75	18	64.3	21	63.6		
76-80	10	35.7	12	36.4		
Min-Max	70-79		70-79			
Mean(SD)	73.61(2.97)		73.76(3.42)			
<b>Marital status</b>					1.050	0.592 <sup>c</sup>
Single	2	7.1	5	15.2		
Marry	11	39.3	13	39.3		
Widowed, Divorced /Separated	15	53.6	15	45.5		
<b>Education</b>					3.586	0.465 <sup>c</sup>
No education	3	10.7	2	6.1		
Primary-high school	23	82.1	23	69.7		
Bachelor	2	7.1	8	24.2		
<b>Current job</b>					2.629	0.452 <sup>c</sup>
employed	3	10.7	7	21.2		
Unemployed	25	89.3	26	78.8		
<b>Monthly income</b>					-0.927	0.358 <sup>b</sup>
<2000	9	32.1	12	36.4		

Variables	Experimental(n=28)		comparison (n=33)		Statistics	p-value
	Number	%	Number	%		
2000-6000	14	50.0	10	30.3		
>6000	5	17.9	11	33.3		
Min-Max	700-20000		600-50000			
Mean(SD)	5075 (5724.91)		6969.7(9958.68)			

<sup>a</sup> = p-value from Chi-square, <sup>b</sup>=p-value from Independent t-test, <sup>c</sup>=p-value from Fisher's ExactTest

**Table 1** Baseline demographics, health status, and home safety environmental between experimental and comparison groups (Cont.).

Variables	Experimental (n=28)		comparison (n=33)		Statistics	p- value
	Number	%	Number	%		
<b>Source of income*</b>						
From their own work	4	14.3	8	24.2	0.950	0.519 <sup>c</sup>
Form out source	26	92.9	32	97.0	0.548	0.589 <sup>c</sup>
<b>Sufficient income</b>					6.011	0.210 <sup>a</sup>
Enough	19	67.9	21	63.6		
Insufficient	9	32.1	12	36.4		
<b>Health status</b>						
<b>BMI</b>					1.301	0.20 <sup>b</sup>
Underweight (<18.5)	2	7.1	2	6.1		
Normal (18.5-24.99)	12	42.9	23	69.7		
Obese	14	50.0	8	24.2		
Min-Max	14.06-39.54		13.28-21.25			
Mean(SD)	24.75(5.39)		23.21(3.39)			
<b>Underlying disease</b>					1.700	0.317 <sup>c</sup>
No	7	25.0	4	12.1		
Yes	21	75.0	29	87.9		



<b>High risk medication used in the past month</b>					2.075	0.231 <sup>c</sup>
No	5	17.9	2	6.1		
Yes	23	82.1	31	93.9		
<b>Home safety environment</b>						
<b>Dry bathroom floor</b>					1.368	0.176 <sup>b</sup>
No	3	10.7	8	24.2		
Yes	25	89.3	25	75.8		
<b>Clear indoor walkway</b>					1.208	0.232 <sup>b</sup>
No	1	3.6	4	12.1		
Yes	27	96.4	29	87.9		

<sup>a</sup> = p-value from Chi-square, <sup>b</sup>=p-value from Independent t-test, <sup>c</sup>=p-value from Fisher's Exact Test

\* More than one answer

**Table 1** Baseline demographics, health status, and home safety environmental between experimental and comparison groups (Cont.).

Variable	Experimental(n=28)		comparison (n=33)		Statistics	p-value
	Number	%	Number	%		
<b>Tidy power cords</b>					1.208	0.232 <sup>b</sup>
No	1	3.6	4	12.1		
Yes	27	96.4	29	87.9		
<b>Proper lighting in the home</b>					-0.116	0.908 <sup>b</sup>
No	1	3.6	1	3		
Yes	27	96.4	32	97		
<b>Pets in the home</b>					0.055	1.000 <sup>a</sup>
No	17	60.7	21	63.6		
Yes	11	39.3	12	36.4		
<b>Risk of falling**</b>					0.957	0.490 <sup>c</sup>
No	6	21.4	4	12.1		
Yes	22	78.6	29	87.9		

<sup>a</sup> = p-value from Chi-square, <sup>b</sup>=p-value from Independent t-test, <sup>c</sup>=p-value from Fisher's Exact Test

\*\* Measured by Thai-FRAT

**Table 2** Comparing fall prevention behaviors before and after intervention in experimental and comparison groups.

Variable	Pre-test		Post-test		t-test	P-value
	$\bar{X}$	SD	$\bar{X}$	SD		
<b>Fall prevention behaviors</b>						
Experimental	56.61	8.05	63.07	6.91	-3.995	<0.01
comparison	53.85	8.10	53.61	7.40	0.133	0.895

**Table 3** Comparing fall prevention behaviors between experiment and control groups.

Fall prevention behaviors	Experimental(n=28)		Control(n=33)		t-test	P-value
	$\bar{X}$	SD	$\bar{X}$	SD		
Pre-test	56.61	8.05	53.85	8.10	1.33	0.189
Post-test	63.07	6.91	53.61	7.40	5.13	<0.01

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EFFECT OF APPLYING MOTIVATION PROTECTION THEORY TO CONTACT LENS  
KERATITIS PREVENTION PROGRAM AMONG VOCATIONAL STUDENTS IN THE BANGKOK  
METROPOLITAN AREA

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ABSTRACT

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At present, Keratitis is a common problem among teenagers. This is due to the incorrect use of contact lenses, which leads to complications that can ultimately result in vision loss. The objective of this quasi-experimental study was to examine the effect of applying motivation protection theory to contact lens keratitis prevention behaviors among first year vocational students in the Bangkok metropolitan area. The experimental group (n=30) received a contact lens keratitis prevention program that was based on motivation protection theory. The control group (n=30) received a guide to eye care and self-care instructions on the proper use of contact lenses, for study, over 5 weeks. Pre-test, post-test and follow-up data were collected by questionnaire. The data were analyzed using the repeated measures ANOVA and independent t-test. The results revealed that, the experimental group after the intervention had significantly better mean scores of perceived severity of keratitis, perceived susceptibility to keratitis, response efficacy expectations for prevention of keratitis, self-efficacy expectations for prevention of keratitis, and behaviors for the prevention of keratitis than at pre-test and better than those of the control group ( $p < .05$ ). The results of this study suggest that the application of motivation protection theory in preventing contact lens related keratitis can modify the behavior of contact lens users. Teaching, demonstration, role model and communication, and increasing awareness of contact lens users can reduce health problems and prevent disability. This will ultimately help vocational students, who are teenagers, have good quality of life.

**Keywords:** Contact lens, Keratitis, Motivation protection theory

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**Table 1:** Number and percentage of the experimental group and the comparison group classified by the level of perceived severity of keratitis, perceived susceptibility to keratitis, response efficacy expectations for prevention of keratitis, self-efficacy expectations for prevention of keratitis, and behaviors for prevention of keratitis during the pre-experiment, post-experiment, and follow-up period

Variables	Experimental group (n=30)			comparison group (n=30)		
	High	Moderate	Low	High	Moderate	Low
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
<b>Perceived severity</b>						
Pre-experiment	4( 13.33)	11(36.67)	15(50.00)	3(10.00)	9(30.00)	18(60.00)
Post-experiment	30(100)	0(0.00)	0(0.00)	3(10.00)	11(36.67)	16(53.33)
Follow-up	30(100)	0(0.00)	0(0.00)	3(10.00)	10(33.33)	17(56.67)
<b>Perceived susceptibility</b>						
Pre-experiment	5 (16.67)	10 (33.33)	15(50.00)	7 (23.34)	13 (43.33)	10(33.33)
Post-experiment	30 (100)	0 (0.00)	0 (0.00)	6 (20.00)	15 (50.00)	9 (30.00)
Follow-up	30 (100)	0 (0.00)	0 (0.00)	3 (10.00)	15 (50.00)	12(40.00)
<b>Response efficacy expectations for prevention of keratitis</b>						
Pre-experiment	6 (20.00)	14(46.67)	10(33.33)	3 (10.00)	12 (40.00)	15(50.00)
Post-experiment	30 (100)	0 (0.00)	0 (0.00)	4 (13.34)	10 (33.33)	16(53.33)
Follow-up	30 (100)	0 (0.00)	0 (0.00)	3 (10.00)	10 (33.33)	17(56.67)
<b>Self-efficacy expectations for prevention of keratitis</b>						
Pre-experiment	4 (13.34)	10 (33.33)	16(53.33)	4 (13.34)	12 (40.00)	14(46.66)
Post-experiment	30 (100)	0 (0.00)	0 (0.00)	5 (16.67)	10 (33.33)	15(50.00)
Follow-up	30 (100)	0 (0.00)	0 (0.00)	3 (10.00)	10 (33.33)	17(56.67)
<b>Behaviors for prevention of keratitis</b>						
Pre-experiment	7(23.33)	9(30.00)	14(46.67)	7(23.33)	10(33.33)	13(43.34)
Post-experiment	30(100)	0(0.00)	0(0.00)	5(16.67)	12(40.00)	13(43.33)
Follow-up	30(100)	0(0.00)	0(0.00)	6(20.00)	11(36.67)	13(43.33)

**Table2:** Comparison of average score within the experimental group and the comparison group in pre-test, post-test and follow-up periods

Variables	Experimental gr. (n=30)				Comparisons gr. (n=30)			
	$\bar{x}$	S.D.	t	p	$\bar{x}$	S.D.	t	P
<b>Perceived severity</b>								
Pre-experiment	17.10	1.02			12.57	2.01		
Post-experiment	22.10	1.03	-18.8	< .001	12.90	1.47	0.76	.45
Pre-experiment	17.10	1.02			12.57	2.01		
Follow-up	23.63	0.85	-26.8	< .001	11.73	1.94	-1.60	.12
Post-experiment	22.10	1.03			12.90	1.47		
Follow-up	23.63	0.85	-6.29	< .001	11.73	1.94	0.86	.38
	F=549.25, df=2, p < .001				F=2.09, df=2, p= .13			
<b>Perceived susceptibility</b>								
Pre-experiment	25.63	3.40			24.30	3.50		
Post-experiment	45.17	2.42	-28.4	< .001	24.07	2.47	0.05	.96
Pre-experiment	25.63	3.40			24.30	3.50		
Follow-up	48.30	1.29	-36.5	< .001	23.10	2.83	1.24	.22
Post-experiment	45.17	2.42			24.07	2.47		
Follow-up	48.30	1.29	-6.25	< .001	23.10	2.83	1.40	.16
	F=891.21, df=2, p < .001				F=1.22, df=2, p= .30			
<b>Response efficacy expectations for prevention of keratitis</b>								
Pre-experiment	27.87	2.82			25.93	2.67		
Post-experiment	42.80	2.10	-21.3	< .001	27.07	3.63	1.47	.15
Pre-experiment	27.87	2.82			25.93	2.67		
Follow-up	45.70	1.39	-30.0	< .001	26.33	2.18	0.86	.39
Post-experiment	42.80	2.10			27.07	3.63		
Follow-up	45.70	1.39	-6.28	< .001	26.33	2.18	0.96	.34
	F=535.45, df=2, p < .001				F=1.38, df=2, p= .25			

**Table2:** Comparison of average score within the experimental group and the comparison group in pre-test, post-test and follow-up periods (continuous)

Variables	Experimental gr. (n=30)				Comparisons gr. (n=30)			
	$\bar{x}$	S.D.	t	p	$\bar{x}$	S.D.	t	P
<b>Self-efficacy expectations for prevention of keratitis</b>								
Pre-experiment	21.10	1.95			17.23	1.87		
Post-experiment	27.00	1.59	-17.8	< .001	16.73	2.34	-0.82	.41
Pre-experiment	21.10	1.95			17.23	1.87		
Follow-up	28.17	1.46	-18.0	< .001	17.07	3.26	-0.21	.83
Post-experiment	27.00	1.59			16.73	2.34		
Follow-up	28.17	1.46	-2.94	.005	17.07	3.26	0.27	.78
	F=245.83 df=2, p < .001				F=0.28, df=2, p= .75			
<b>Behaviors for prevention of keratitis</b>								
Pre-experiment	18.70	3.09			18.77	2.88		
Post-experiment	34.40	2.07	-25.7	< .001	17.80	3.07	-1.14	.26
Pre-experiment	18.70	3.09			18.77	2.88		
Follow-up	36.17	1.91	-30.6	< .001	17.83	3.79	-1.06	.29
Post-experiment	34.40	2.07			17.80	3.07		
Follow-up	36.17	1.91	-3.42	.001	17.83	3.79	0.22	.82
	F=625.81, df=2, p < .001				F=0.56, df=2, p= .57			

**Table 3** Comparison of mean score between the experimental group and the comparison group pre-test, post-test and follow-up

Variables	Experimental		Comparison		t	df	p
	Group (n=30)		Group (n=30)				
	$\bar{x}$	SD	$\bar{x}$	SD			
<b>Perceived severity</b>							
Pre-experiment	17.10	1.02	16.97	1.18	0.46	58	.64
Post-experiment	22.10	1.02	16.93	1.87	13.23	58	< .001
Follow-up	23.63	0.85	16.56	1.35	24.17	58	< .001
<b>Perceived susceptibility</b>							
Pre-experiment	25.63	3.40	24.37	3.06	1.51	58	.13
Post-experiment	45.17	2.42	24.07	2.47	33.36	58	< .001
Follow-up	48.30	1.29	23.10	2.83	44.34	58	< .001
<b>Response efficacy expectations for prevention of keratitis</b>							
Pre-experiment	27.87	2.82	27.00	2.50	1.25	58	.21
Post-experiment	42.80	2.10	26.90	3.61	20.81	58	< .001
Follow-up	45.70	1.39	26.17	2.08	42.65	58	< .001
<b>Self-efficacy expectations for prevention of keratitis</b>							
Pre-experiment	21.10	1.95	20.50	1.43	1.35	58	.18
Post-experiment	27.00	1.59	20.60	1.42	16.35	58	< .001
Follow-up	28.17	1.46	20.53	1.40	20.58	58	< .001
<b>Behaviors for prevention of keratitis</b>							
Pre-experiment	18.70	3.09	18.77	2.88	-0.08	58	.93
Post-experiment	34.40	2.07	18.03	2.96	24.75	58	< .001
Follow-up	36.17	1.91	17.83	3.79	23.61	58	< .001

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# BEHAVIOR AMONG ADOLESCENT MALES IN THE ROYAL THAI ARMY

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## Abstract

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Risky sexual behaviors, including having sexual intercourse at young age, having multiple sexual partners, or not using a condom during the intercourse, all increased high risk of sexually transmitted diseases. This study aimed to examine factors associated with risky sexual behaviors and Sexually transmitted diseases among adolescent males in The Royal Thai Army. The conceptual framework was derived from the problem behavior theory highlighting on personal factors, personality factors, environmental perceptions, socialization factors and drug abuse. 235 adolescent males on duty in The Royal Thai Army completed self-administered questionnaires, as well as, gave information about their drug use and sexually transmitted diseases (via Methamphetamine urine test, Blood test and Physical Examination). Data analysis was performed using descriptive statistics, Chi-square test, Fisher's exact test, Mann-Whitney U Test, and Binary logistic regression.

The results showed that the participants with high and low risk of sexual behavior were accounted for 79.6 % and 20.4 %, respectively. The prevalence rate of sexually transmitted diseases based on the blood test result was 1.3 %. The prevalence rate of urine methamphetamine was 29.8 %. The factors that were significantly and positively associated with risky sexual behaviors were marital status, alcohol used, attitude of personality factor, attitude of perceived environment and socialization factor, family, and drug abuse history ( $p < 0.05$ ). Regarding the sexual risk behavior aspect among the participants, no differences were found among those who used or did not use drugs ( $p = 0.356$ ). Moreover, it was found that the marital status, alcohol used, attitude of personality factor and drug abuse history could enhance the ability to predict risky sexual behaviors by 18.0 %.

Alcohol use and drug abuse should be prevented. In addition, there should be a guidance to prevent individuals from sexual behavior and sexually transmitted diseases.

**KEY WORDS:** RISKY SEXUAL BEHAVIOR; ADOLESCENT MALES; THE ROYAL THAI ARMY, DRUG ABUSE

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**Table 1.** Risky sexual behavior among adolescent males in the Royal Thai Army

Sexual Behavior	(n)	(%)
<b>Sexuality</b>		
Yes	224	95.3
No	11	4.7
<b>Had sex in the past year</b>		
Yes	201	89.7
No	23	10.3
<b>Age at first sex</b>		
< 15 years	61	27.2
≥ 15 years or above	163	72.8
<b>Type of sexual Partner</b>		
Wife or Girlfriend	220	98.2
Casual Partner	73	32.6
Women Sex worker	48	21.4
Male	9	4.0
<b>Number of sexual partners (n=224)</b>		
Long lifetime		
1	72	32.1
≥ 2	152	67.9
<b>Past six months</b>		
Non had sex		
1	102	45.5
≥ 2	34	15.2
<b>Past three months</b>		
None		
1	80	35.7
≥ 2	22	9.8
<b>Condom use</b>		
<b>Wife or Girlfriend</b>		
Never	54	24.5
Sometimes	129	58.6
Always	37	16.5

**Table 1.** Risky sexual behavior among adolescent males in the Royal Thai Army (Cont.)

<b>Sexual Behavior</b>	<b>(n)</b>	<b>(%)</b>
<b>Casual Partner</b>		
Never	1	1.4
Sometimes	25	34.2
Always	47	64.4
<b>Female sex worker</b>		
Never	1	2.1
Sometimes	2	14.6
Always	40	83.3
<b>Male</b>		
Never	2	22.2
Sometimes	3	33.3
Always	4	44.4
<b>Ever drunk alcohol before sex</b>		
Yes	181	80.8
No	43	19.2
<b>Ever use Illicit drug before sex</b>		
Yes	117	52.2
No	107	47.8
<b>Buy condom</b>		
Yes	176	78.6
No	48	21.4

**Table 2** Association between demographic data, characteristic, attitude of personality, attitude of environmental perception (family, friend and socialization), drug abuse and risky sexual behavior among adolescent males in the Royal Thai Army

Variable	Risky sexual behavior		$\chi^2$	p-value
	High risk n(%)	Moderate to Low risk n(%)		
<b>Age</b>				
≤ 21 years	111 (79.3)	29 (20.7)	0.018	0.894
≥ 22 years and over	76 (80.8)	19 (20.0)		
<b>Previous level of education</b>				
Primary school (Grade 1-6)	47 (73.4)	17 (26.2)	2.342	0.310
Secondary school (Grade 7-12)	116 (81.1)	27 (18.9)		
Certificate/ Bachelor's degree and over	24 (85.7)	4 (14.3)		
<b>Marital Status</b>				
Single	124 (75.6)	40 (24.4)	5.250	0.022
Married/ Separate/ Widowed	63 (88.7)	8 (11.3)		
<b>Occupation</b>				
None	118 (80.3)	29 (19.7)	1.852	0.396
Non formal occupation	40 (78.4)	11 (21.6)		
Formal occupation	29 (78.4)	8 (21.6)		
<b>Income</b>				
None	42 (80.8)	10 (19.2)	5.778	0.056
≤10,000 bath	64 (71.9)	25 (28.1)		
≥ 10,001 bath above	81 (86.2)	13 (24.5)		
<b>Part of residence</b>				
Central region	64 (84.8)	12 (15.2)	2.331	0.127
Eastern region	99 (76.7)	30 (23.3)		
Northeastern region	21 (77.8)	6 (12.5)		
<b>Ordination</b>				
Yes	37 (82.2)	8 (17.8)	0.240	0.624
No	150 (78.9)	40 (21.1)		

**Table 2** Association between demographic data, characteristic, attitude of personality, attitude of environmental perception (family, friend and socialization), drug abuse and risky sexual behavior among adolescent males in the Royal Thai Army (Cont.)

Variable	Risky sexual behavior		$\chi^2$	p-value
	High risk n(%)	Moderate to Low risk n(%)		
<b>Live with</b>				
Parent/ wife/ Cousin	145 (77.5)	42 (22.5)	2.331	0.127
Girlfriend/ Friend/Other (alone)	42 (87.5)	6 (12.5)		
<b>Smoking</b>				
Yes	165 (80.9)	39 (19.1)	1.628	0.202
No	22 (71.0)	9 (29.0)		
<b>Alcohol</b>				
Yes	180 (81.8)	40 (18.2)	10.675	0.004 <sup>†</sup>
No	7 (46.7)	8 (53.3)		
<b>History of illness</b>				
Yes	67 (82.7)	14 (17.3)	0.751	0.386
No	120 (77.9)	34 (22.1)		
<b>Attitude level of personality</b>				
Low to Moderate	113 (85.6)	19 (14.4)	6.741	0.009
High	74 (71.8)	29 (28.2)		
<b>Attitude level of environmental perception</b>				
<b>Family</b>				
Low to Moderate	139 (83.2)	28 (16.8)	4.754	0.029
High	48 (70.6)	20 (29.4)		
<b>Friend</b>				
Low to Moderate	42 (79.2)	28 (16.8)	0.005	0.946
High	145 (79.7)	37 (20.3)		
<b>Socialization</b>				
Low to Moderate	77 (81.9)	17 (18.1)	0.528	0.467
High	110 (78.0)	31 (22.0)		

**Table 2** Association between demographic data, characteristic, attitude of personality, attitude of environmental perception (family, friend and socialization), drug abuse and risky sexual behavior among adolescent males in the Royal Thai Army (Cont.)

Variable	Risky sexual behavior		$\chi^2$	p-value
	High risk n(%)	Moderate to Low risk n(%)		
<b>History of drug abuse</b>				
Yes	143 (84.1)	27 (15.9)	7.805	0.005
No	44 (67.7)	21 (32.3)		
<b>Urine Methamphetamine</b>				
Positive	56 (80.0)	14 (20.0)	0.011	0.916
Negative	131 (68.0)	34 (20.6)		

$\chi^2$  = ค่าสถิติทดสอบไคสแควร์<sup>†</sup> Fisher's exact test

**Table 3** Distribution of risky sexual behavior between using drug abuse by urine methamphetamine test

Using Drug Abuse	(n)	Mean Rank	p-value
<b>Urine Methamphetamine Test</b>			
Positive	70	124.21	0.356
Negative	165	115.37	



Table 4 Factor for predicting risky sexual behavior (binary logistic regression)

Factors	OR <sub>adj</sub>	P-value	95% CI for	
			Lower	Upper
<b>Status</b>				
Single	1.00			
Married/ Separated/ Widowed	2.36	0.048	1.006	5.533
<b>Alcohol</b>				
No	1.00			
Yes	1.72	0.005	1.702	18.376
<b>Attitude of personality</b>				
High	1.00			
Low to Moderate	2.20	0.036	1.053	4.628
<b>Attitude of environmental perception :Family</b>				
High	1.00			
Low to Moderate	1.69	0.171	0.797	3.585
<b>History of Drug abuse</b>				
No	1.00			
Yes	2.26	0.025	1.108	4.610
Nagelkerke R Square 0.018				

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# RELATIONSHIP BETWEEN JOB STRESS AND JOB SATISFACTION IN NURSING INSTRUCTOR IN MINISTRY OF PUBLIC HEALTH

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## ABSTRACT

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Producing nursing graduates invariably required a sufficient proportion of nursing instructors to ensure the delivery of capable nursing graduates critical for responding to the needs of health service system. This research study aimed to explore the relationship between job stress and job satisfaction in nursing instructors of Praboromarajchanok Institute for Health Workforce Development, Ministry of Public Health, based on the concept of JOB DEMAND-CONTROL MODEL. The samples in this study were 311 nursing instructors, who were selected by Multi-Stage Sampling. Data were collected through the use of Job Stress Questionnaire (JCQ) and Job Satisfaction Questionnaire (JSS). The data obtained were then analyzed by statistical methods, including percentage, mean, and standard deviation. This study also employed Chi-Square test and Pearson's product moment correlation coefficient.

This research study found that the majority of nursing instructors were female (94.5%), and the age group frequently found was 31-40 years old (50.5%). Most of the samples were married (55.3%) and had the Master's Degree (89.7%), with 1-10 years of teaching experience (52.5%). The samples had job stress at a moderate level (69.5%), the stress in terms of control and decision-making power at a moderate level (62.1%), and the stress in terms of social support at a moderate level (75.2%). Factors associated with job satisfaction were workload ( $r = -0.152$ ,  $p < 0.01$ ), control and decision-making power ( $r = 0.301$ ,  $p < 0.01$ ), and social support ( $r = 0.592$ ,  $p < 0.01$ ).

Stress in terms of workload, control and decision-making power, and social support affected the career of nursing instructors in a way that they were required to be enthusiastic, work proactively and improve their performance on a continuous basis, and equip themselves with management skills. It was, therefore, essential that the executives consider adjusting or planning for the balanced workload, support nursing instructors in developing their knowledge and skills, provide welfare and assistance corresponding to the needs, and assure the environment conducive to effective work. These elements could significantly help improve job satisfaction in nursing instructors.

**Keywords:** Job stress, job satisfaction, nursing instructor

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**Table 1** Correlation between personal factors, job stress and job satisfaction among nursing educators under the approval of Praboromarajchanok Institute, Ministry of Public Health

Variables	Job satisfaction	
	Chi – square / Pearson Correlation	p-value
Gender	5.56 <sup>a</sup>	0.062
Age	-0.185 <sup>b</sup>	0.065
Marital status	60.83 <sup>a</sup>	0.165
Educational level	11.80 <sup>a</sup>	0.019*
Teaching experience	-0.161 <sup>b</sup>	0.109
Job stress		
- Job demand	-0.152 <sup>b</sup>	0.007**
- Job control and decision latitude	0.301 <sup>b</sup>	0.000**
- Social support	0.592 <sup>b</sup>	0.000**

#### หมายเหตุ

a = (Chi-square test)

b = (Pearson's Product Moment Correlation Coefficient)

\* =  $p < 0.05$

\*\* =  $p < 0.01$

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# Factors Related to Transformational Leadership Roles in Health Promotion of Chief Nurse Officer District\*

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## ABSTRACT

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This research aimed to examine factors related to the transformational leadership roles in health promotion of the chief nurse officer district (CNO-D). By means of using stratified-cluster sampling, the sample consisted of 195 people. Data collection was conducted by the use of mailed self-administered questionnaires. The response rate was 80.5%. Data were analyzed using a SPSS software program to find the frequency, percentage, mean, and standard deviation. Relationships were analyzed using Pearson correlation as well as stepwise multiple regression analysis. A p value <0.05 was considered statistically significant.

The study found that the CNO-D had high transformational leadership roles in overall health promotion, which accounted for 73.9%. It was found that encouraging, enabling others to act, demonstration and challenging process were all high (86.6%, 84.1%, 75.8% and 63.0%, respectively). The inspiration to share vision was found in a moderate level, (48.4%). The statistically significant factors related to transformational leadership roles in health promotion of the CNO-D were education level, additional leadership training, additional training in health promotion, motivational factors, hygiene factors, health promotion policies, and work resources ( $p < 0.05$ ). The predictor factors of the CNO-D the transformational leadership role in health promotion were motivational factors related to working performance and factors regarding health promotion policy, in which, they could predict a change in leadership role in health promotion of the CNO-D by 54.2%.

The results recommended that a motivational program of working performance and policy advocacy should be developed to promote a change in the leadership role regarding health promotion.

**Keywords:** Transformational leadership role, Health promotion, Chief nurse officer district

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**Table 1** Number and percent personal characteristics of chief nurse officer district (n= 157)

Personal characteristics	n	%
<b>Sex</b>		
male	15	9.6
female	142	90.4
<b>Age (Year)</b>		
32 - 46	19	12.0
47 - 53	69	44.0
54 - 60	69	44.0
Mean = 52.1 S.D. = 4.5 Max = 60 Min = 32		
<b>Marital status</b>		
Married	104	66.3
Single	33	21.0
Divorced	19	12.1
Separated	1	0.6
<b>Education Level</b>		
Bachelor degree	99	63.1
Master degree	57	36.3
Doctoral degree	1	0.6
<b>Work Experience</b>		
1 - 11	64	40.6
12 - 22	62	39.9
23 - 35	31	19.5
Mean = 14.38 S.D. = 8.764 Max = 35 Min = 1		
<b>Income (Bath/month)</b>		
20,000 - 30,000	3	1.9
30,001 - 40,000	20	12.7
40,001 - 50,000	100	63.7
50,001 ขึ้นไป	34	21.7

**Table 1** Number and percent Personal characteristics of chief nurse officer district (n= 157)  
(Cont.)

Personal characteristics	n	%
<b>Experience with Health Promotion Program</b>		
No	25	15.9
Yes	132	84.1
<b>Additional training for nursing management</b>		
No	60	38.2
Yes	97	61.8
<b>Additional training for leadership</b>		
No	45	28.7
Yes	112	71.3
<b>Additional training for Health Promotion</b>		
No	46	29.3
Yes	111	70.7

**Table 2** factors related to the transformational leadership roles in health promotion of the chief nurse officer district (n=157)

Factors	Pearson correlation	p-value
<b>personal characteristic</b>		
Age	-0.090	0.261
Education Level	0.181	<b>0.023</b>
Work Experience	-0.033	0.683
Additional training for nursing management	0.117	0.144
Additional training for leadership	0.174	<b>0.030</b>
Additional training for Health Promotion	0.296	<b>&lt;0.001</b>
<b>Motivation factor in the work</b>		
Motivational factor	0.704	<b>&lt;0.001</b>
Hygiene factor	0.373	<b>&lt;0.001</b>
<b>Support factor from the organization</b>		
Health promotion policies	0.562	<b>&lt;0.001</b>
Work resources	0.219	<b>0.006</b>

**Table 3** The predictive factors that affect the transformational leadership roles in health promotion of chief nurse officer district analyze by stepwise multiple regression analysis (n=157)

Variables	R	R <sup>2</sup>	Adj R <sup>2</sup>	R <sup>2</sup> Change	b	B	t	sig
<b>Model 1</b>								
Constant					.877	.704	3.473	.001
Motivational factor	.704	.496	.493	.496	.998		12.349	.000
<b>Model 2</b>								
Constant					.689		2.803	.006
Motivational factor					.798	.566	8.733	.000
Health promotion policies	.736	.542	.536	.046	.253	.255	3.941	.000

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