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KNOWLEDGE AND RISK FACTORS OF OSTEOARTHRITIS AMONG ADULTS IN SELECTED RURAL COMMUNITY, NALBARI DISTRICT, ASSAM

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ABSTRACT

Osteoarthritis is a common degenerative joint disorder; it has become a major cause of disability both in developing and developed countries especially in rural areas with limited healthcare access. Knowledge and assessment of risk factors are crucial for early detection, prevention, and effective management of osteoarthritis. **Aim**: The aim of the study was to assess the knowledge and identify the risk factors of osteoarthritis among adults and to examine their association with socio demographic variables and the association between knowledge and risk factors. **Methodology**: A quantitative approach and descriptive survey design was used for the study. A total of 275 adults were selected using multistage sampling technique. Demographic data sheet, A structured knowledge interview schedule and a structured interview schedule on risk factors of osteoarthritis were used. Analysis**:** The collected data were analysed and interpreted by descriptive and inferential. **Results**: The findings of the study showed that majority of the adults have adequate knowledge (63.6%) & Risk factors like dilatory factors, physical activity, illness and family history & BMI were analysed & interpreted. Chi square test was performed to find out the association between Knowledge of Osteoarthritis among rural adults with selected socio-demographic variables, association between risk factors for Osteoarthritis among rural adults with selected socio-demographic variables, association between Knowledge of osteoarthritis among rural adults with risk factors. While computing significant association it was found that there is significant association between Knowledge of the rural adults with their Educational level and life style. There is significant association between Dietary factors of the rural adults with their occupation and lifestyle, physical activity of the rural adults with their occupation, illness and family history of the rural adults with their educational level and BMI of the rural adults with their educational qualifications, family income and life style. There is significant association between Knowledge of the rural adults with the dietary factor of "Do you take deep fried foods", physical activity factor that is "Do you exercise" and lastly with the illness and family history that is "Do you have a history of arthritis in your family". **Conclusion:** On the basis of the findings of the present study, it can be concluded that the study was effective in assessing the knowledge and risk factors and finding the association between the two variables. Keeping in view of the findings of the present study the investigator recommended that similar study can be replicated in larger sample covering more geographical areas to generalize findings.

Keywords: Knowledge, Risk Factors, Osteoarthritis.

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INTRODUCTION

The term osteoarthritis was given by John Spendon. The name Osteoarthritis comes from three Greek words meaning bone, joint, and inflammation. Osteoarthritis (OA) is not a single disease but it is the end result of a variety of disorders which leads to the structural or functional failure of one or more of joints.[1] It is the most common cause of chronic joint pain; it affects millions of people worldwide. Osteoarthritis is more likely to develop as people age. The changes in osteoarthritis usually occur slowly over years, though there are some occasional exceptions. It has become a major cause of disability both in developing and developed countries. According to WHO Osteoarthritis expected to become the fourth leading cause of disability by 2020 and as a major cause of pain and disability among elderly.[2] Survey studies results have shown that although the disease can be dependent on genetic and epigenetic factors, sex, ethnicity and age, it is also significantly associated with obesity and overweight, dietary factors, sedentary life style and injuries, specific occupation, repetitive knee bending or heavy lifting for women estrogen reduction at menopause, genetic factor also play a role in developing the osteoarthritis.[3] More than 50 million adults have some type of arthritis. Common symptoms include swelling, pain, stiffness, decreased range of motion. With proper knowledge and early awareness of risk factors osteoarthritis can be prevented or its progression can be delayed.

OBJECTIVES:

1. To assess the level of knowledge of osteoarthritis among the adults in selected rural community, Nalbari District, Assam.
2. To assess the risk factors of osteoarthritis among the adults in selected rural community, Nalbari District, Assam.
3. To find the association between knowledge of osteoarthritis among the adults of the rural community & selected socio demographic variables.
4. To find the association between risk factors of osteoarthritis among the adults of the rural community & selected socio demographic variable.
5. To find the association between knowledge of osteoarthritis and the risk factors among the adults in selected rural community, Nalbari District Assam.

RESEARCH METHODOLOGY

The study was conducted using a quantitative approach and descriptive survey design. Structured interview schedules were used to collect data from 275 adults in selected rural community, Nalbari district, Assam.

Section-I: Socio-demographic Performa

It consists of items related to socio-demographic variables of the patient. It consists of 9 items of demographic data age, sex, religion, marital status, educational level, occupational status, monthly income, types of toilets, life style. The interviewer has given a tick mark (√) in appropriate choice provided by the respondents.

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Section-II: Structured Knowledge Interview Schedule

The knowledge questionnaire consisted of twenty-one numbers of multiple-choice questions on four areas of Osteoarthritis among adults.

Section-III: Structured interview schedule on Risk Factors of Osteoarthritis

Structured interview schedule was developed by the investigator to assess the risk factors such as: Dietary factors, Physical activity, Illness and family history of diseases, BMI (Obesity).

RESULTS

Table 1: Frequency and percentage distribution of subjects according to socio demographic variables:

DEMOGRAPHIC VARIABLES	FREQUENCY(f)	PERCENTAGE (%)
a. Age in years		
30-39 years	50	18.2
40-49 years	72	26.2
50-59 years	41	14.8
60-70 years	112	40.8
b. Gender		
Male	162	58.9
Female	113	41.1
c. Religion		
Hinduism	256	93.1
Islam	19	6.9
d. Marital Status		
Never Married	72	26.2
Married	140	50.9
Widow	63	22.9
e. Educational Level		
No formal education	27	9.8
Primary school	46	16.7
HSLC	69	25.1
Higher Secondary	53	29.1
Graduate & above	80	19.3
f. Occupation		
Retired	11	4
Daily Wager	25	9.1
Farmer	42	15.3

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Home maker	71	25.8
Private Employee	63	22.9
Govt Employee	63	22.9
g. Monthly income of family		
68,967 – 92,185	18	6.5
30,831 – 46,128	20	7.3
46,095 – 68,961	28	10.2
27,654 - 46,089	54	19.6
9,232 - 27,648	121	44
≤ 9,226	34	12.4
h. Types of toilets		
Indian toilet	207	75.3
European toilet	68	24.7
i. Life style		
Sedentary	41	14.7
Moderate work	167	60.7
Heavy work	67	24.4

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Table 2: Frequency and percentage distribution of level of knowledge of osteoarthritis among the adults

LEVEL OF KNOWLEDGE	FREQUENCY (f)	PERCENTAGE (%)	SCORE RANGE	MEDIAN	MODE	MEAN	SD
Inadequate (0-12)	-	-	11-18	16	16	14.91	2.466
Moderately adequate (13-16)	100	36.4	7				
Adequate (17-21)	175	63.6					

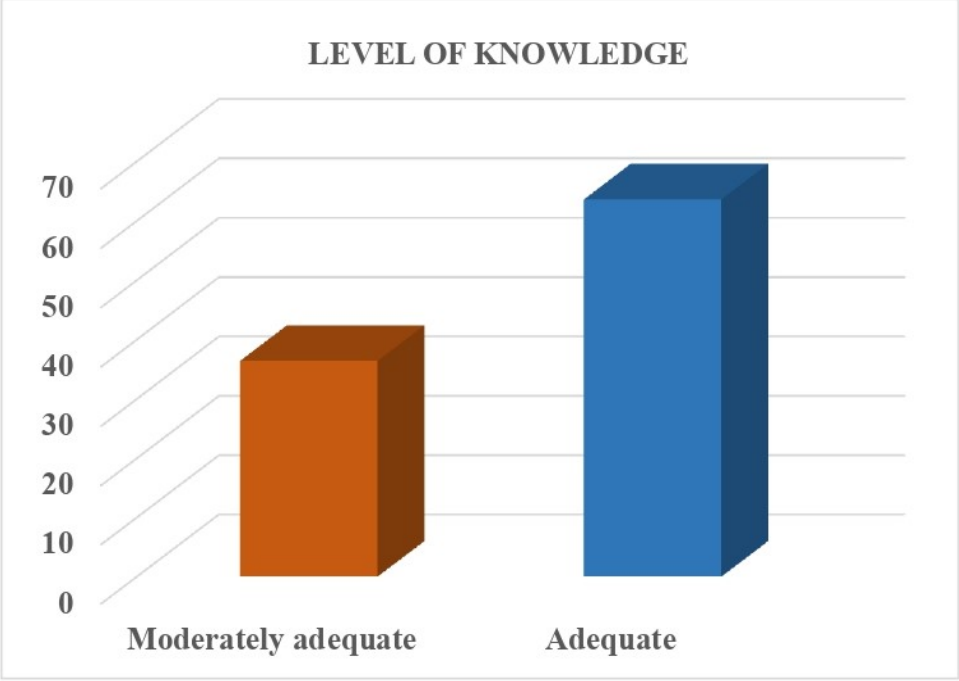

Fig 1: Percentage distribution of knowledge of osteoarthritis among the rural adults.

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Table 3: Frequency and percentage distribution of risk factors among the rural adults:

RISK FACTORS	YES		NO	
	f	%	f	%
DIETERY FACTORS				
Consumption of fried foods	197	71.6	78	28.4
Consumption of red meat, sugar	157	57.1	118	42.9
Extra salt in meal	147	53.5	128	46.5
PHYSICAL ACTIVITY				
Exercise	127	46.2	148	53.8
Difficulty in performing activities of daily life.	96	34.9	179	65.1
Repetitive movement of bending or squatting.	132	48	143	52
ILLNESS & FAMILY HISTORY				
History of Diabetes Mellitus	41	14.9	234	85.1
History of joint surgery	38	13.8	237	86.2
History of Joint stiffness	140	50.9	135	49.1
History of arthritis in family	97	35.3	179	64.7
BMI				
Normal (18.50-24.99)	147	53.5	Normal (18.50-24.99)	147
Overweight (>25.00)	87	31.6	Overweight (>25.00)	87
Class I obesity (30.00-34.99)	32	11.6	Class I obesity (30.00-34.99)	32
Class II obesity (35.00-39.99)	9	3.3	Class II obesity (35.00-39.99)	9

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TABLE 4:

ASSOCIATION BETWEEN KNOWLEDGE OF OSTEOARTHRITIS AMONG THE ADULTS WITH SELECTED SOCIO DEMOGRAPHIC VARIABLES

SL. NO	DEMOGRAPHIC VARIABLES	KNOWLEDGE		χ^2 VALUE	df	P VALUE
		MODERATELY ADEQUATE	ADEQUATE			
1	**Age in years**			0.726	4	0.948^{NS}
	30-39 years	17	33			
	40-49 years	29	43			
	50-59 years	15	26			
	60-70 years	39	73			
2	**Gender**			0.001	1	0.982^{NS}
	Male	59	103			
	Female	41	72			
3	**Religion**			1.068	1	0.301^{NS}
	Hinduism	91	165			
	Islam	9	10			
4	**Marital status**			2.253	2	0.324^{NS}
	Never married	30	42			
	Married	45	95			
	Widow	25	38			
5	**Educational level**			20.24	4	0.001*
	No formal education	11	16			
	Primary school	28	18			
	HSLC	26	43			
	Higher secondary	18	35			
	Graduate and above	17	63			
6	**Occupation**			7.887	5	0.163^{NS}
	Retired	4	7			
	Daily wager	11	14			
	Farmer	13	29			
	Home maker	26	45			
	Private employee	30	33			
	Govt employee	16	47			
7	**Family income per month**			3.908	5	0.563^{NS}
	68967-92185	5	13			
	30831 - 46128	7	13			
	46095 - 68961	13	15			
	27654 - 46089	15	39			
	9232-27648	47	74			

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	≤ 9,226	13	21			
8	**Type of toilet** Indian toilet European toilet	 78 22	 129 46	0.628	1	0.428^{NS}
9	**Life style** Sedentary work Moderate work Heavy work	 8 58 34	 33 109 33	11.21	2	0.003*

The findings in the table 4 shows that the educational level and life style of adults have a significant association with their knowledge at the 0.05 level of significance.

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TABLE 5.1

ASSOCIATION BETWEEN RISK FACTOR (DIETARY FACTORS) OF OSTEOARTHRITIS AMONG THE RURAL ADULTS WITH SELECTED SOCIO DEMOGRAPHIC VARIABLES

n=275

SL. NO	DEMOGRAPHIC VARIABLES	DIETARY FACTORS		χ^2 VALUE	df	P VALUE
		LOW	HIGH			
1	**Age in years**			1.082	4	0.897^{NS}
	30-39 years	9	41			
	40-49 years	15	57			
	50-59 years	8	33			
	60-70 years	17	95			
2	**Gender**			0.077	1	0.782^{NS}
	Male	28	134			
	Female	21	92			
3	**Religion**			0.741	1	0.389^{NS}
	Hinduism	47	209			
	Islam	2	17			
			--			
4	**Marital status**			0220	2	0.896^{NS}
	Never married	13	59			
	Married	26	114			
	Divorced	--	--			
	Widow	10	53			
5	**Educational level**			3.524	4	0.474^{NS}
	No formal education	3	24			
	Primary school	5	41			
	HSLC	14	55			
	Higher secondary	12	41			
	Graduate and above	15	65			
6	**Occupation**			16.54	5	0.005*
	Retired	2	9			
	Daily wager	11	14			
	Farmer	7	35			
	Home maker	11	60			
	Private employee	13	50			
	Govt employee	5	58			
7	**Family income per month**			6.982	5	0.222^{NS}
	68967-92185	1	17			
	30831 - 46128	5	15			

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	46095 - 68961	6	22			
	27654 - 46089	6	48			
	9232 - 27648	27	94			
	≤ 9,226	4	30			
8	**Type of toilet**					
	Indian toilet	39	169	0.166	1	0.683^{NS}
	European toilet	11	57			
9	**Life style**					
	Sedentary work	5	36	16.49	2	0.002*
	Moderate work	21	146			
	Heavy work	23	44			

***p<0.05 level of Significance NS-Non significant**

The findings in the table 5.1 shows that the occupational level and life style of the adults have a significant association with their dietary factors at 0.05 level of significance.

TABLE 5.2
ASSOCIATION BETWEEN RISK FACTOR (PHYSICAL ACTIVITY) OF OSTEOARTHRITIS AMONG THE RURAL ADULTS WITH SELECTED SOCIO DEMOGRAPHIC VARIABLES

n=275

SL. NO	DEMOGRAPHIC VARIABLES	PHYSICAL ACTIVITY		χ^2 VALUE	df	P VALUE
		LOW	HIGH			
1	**Age in years**					
	30-39 years	4	46			
	40-49 years	13	59	12.59	4	0.013^{NS}
	50-59 years	4	37			
	60-70years	26	86			
2	**Gender**					
	Male	26	136	0.302	1	0.583^{NS}
	Female	21	92			
3	**Religion**					
	Hinduism	42	214	1.226	1	0.268^{NS}
	Islam	5	14			
4	**Marital status**					
	Never married	11	61			
	Married	26	114	0.450	2	0.799^{NS}
	Widow	10	53			

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5	**Educational level**					
	No formal education	4	23	4.775	4	0.311^{NS}
	Primary school	12	34			
	HSLC	12	57			
	Higher secondary	10	43			
	Graduate and above	9	71			
6	**Occupation**			13.05	5	0.022*
	Retired	1	10			
	Daily wager	10	15			
	Farmer	9	33			
	Home maker	11	60			
	Private employee	10	53			
	Govt employee	6	57			
7	**Family income per month**			1.899	5	0.863^{NS}
	68967-92125	3	15			
	30831 - 46128	2	18			
	46095 - 68961	5	23			
	27654 - 46089	12	42			
	9232 - 27648	19	102			
	≤ 9,226	6	28			
8	**Type of toilet**			2.643	2	0.104^{NS}
	Indian toilet	31	176			
	European toilet	16	52			
9	**Life style**			1.899	2	0.387^{NS}
	Sedentary work	4	37			
	Moderate work	30	137			
	Heavy work	13	54			

***p<0.05 level of Significance** **NS-Non significant**

The findings in the table 5.2 shows that the occupational level of adults has a significant association with their physical activity at 0.05 level of significance.

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TABLE 5.3

ASSOCIATION BETWEEN RISK FACTOR (ILLNESS AND FAMILY HISTORY) OF OSTEOARTHRITIS AMONG THE RURAL ADULTS WITH SELECTED SOCIO DEMOGRAPHIC VARIABLES

n=275

SL. NO	DEMOGRAPHIC VARIABLES	ILLNESS AND FAMILY HISTORY		χ^2 VALUE	Df	P VALUE
		LOW	HIGH			
1	**Age in years**			1.129	4	0.890^{NS}
	30-39 years	15	35			
	40-49 years	21	51			
	50-59 years	12	29			
	60-70 years	38	74			
2	**Gender**			0.008	1	0.929^{NS}
	Male	51	111			
	Female	35	78			
3	**Religion**			1.114	1	0.291^{NS}
	Hinduism	78	178			
	Islam	8	11			
4	**Marital status**			1.460	2	0.482^{NS}
	Never married	25	47			
	Married	45	95			
	Widow	16	47			
5	**Educational level**			21.67	4	0.001*
	No formal education	8	19			
	Primary school	29	17			
	HSLC	20	49			
	Higher secondary	17	36			
	Graduate and above	12	68			
6	**Occupation**			5.800	5	0.326^{NS}
	Retired	6	5			
	Daily wager	8	17			
	Farmer	17	25			
	Home maker	20	51			
	Private employee	16	47			
	Govt employee	19	55			
7	**Family income per month**			2.980	5	0.703^{NS}
	68967-92185	3	15			
	30831 - 46128	8	12			

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	46095 - 68961	8	20			
	27654 - 46089	18	36			
	9232 - 27648	37	84			
	≤ 9,226	12	22			
8	**Type of toilet**					
	Indian toilet	64	143	0.049	1	0.825^{NS}
	European toilet	22	46			
9	**Life style**					
	Sedentary work	14	27			
	Moderate work	47	120	2.056	2	0.358^{NS}
	Heavy work	25	42			

***p<0.05 level of Significance** **NS-Non significant**

The findings in the table 5.3 shows that the educational level of the adults has a significant association with their illness and family history at 0.05 level of significance.

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TABLE 5.4
ASSOCIATION BETWEEN RISK FACTOR (BMI) OF OSTEOARTHRITIS AMONG THE RURAL ADULTS WITH SELECTED SOCIO DEMOGRAPHIC VARIABLES

n=275

SL. NO	DEMOGRAPHIC VARIABLES	BMI				χ^2 VALUE	df	P VALUE
		NORMAL	OVER WEIGHT	CLASS I	CLASS II			
1	**Age in years**					7.017	12	0.856^{NS}
	30-39 years	27	16	6	1			
	40-49 years	37	24	7	4			
	50-59 years	24	13	3	1			
	60-70 years	58	34	16	3			
2	**Gender**					4.806	3	0.187^{NS}
	Male	86	47	21	8			
	Female	61	40	11	12			
3	**Religion**					0.735	3	0.865^{NS}
	Hinduism	137	82	29	8			
	Islam	10	5	3	1			
4	**Marital status**					2.210	6	0.899^{NS}
	Never married	38	24	7	3			
	Married	76	44	15	5			
	Widow	33	19	10	1			
5	**Educational level**					123.50	12	0.001*
	No formal education	11	4	12	0			
	primary school	43	0	2	1			
	HSLC	18	49	2	0			
	Higher secondary	36	13	2	2			
	Graduate and above	39	21	14	6			
6	**Occupation**					17.25	15	0.304^{NS}
	Retired	6	5	0	0			
	Daily wager	13	6	5	1			
	Farmer	21	9	9	3			
	Home maker	38	22	10	1			
	Private employee	35	21	4	3			
	Govt employee	34	24	4	1			
7	**Family income per month**	8	3	1	6	57.77	15	0.001*
	68967-92185	19	1	0	0			

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	30831 - 46128	18	8	2	0			
	46095 - 68961	21	8	25	0			
	27654-46089	57	58	4	2			
	9232 - 27648	24	9	0	1			
	≤ 9,226							
8	**Type of toilet**							
	Indian toilet	109	70	21	7	2.988	3	0.393^{NS}
	European toilet	38	17	11	2			
9	**Life style**							
	Sedentary work	24	15	2	0	16.28	6	0.012*
	Moderate work	78	54	28	7			
	Heavy work	45	18	2	2			

***p<0.05 level of Significance** **NS-Non significant**

The findings in the table 5.4 shows that the educational level, family income and life style of the adults have a significant association with their BMI at 0.05 level of significance.

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TABLE 6

ASSOCIATION BETWEEN KNOWLEDGE AND RISK FACTORS OF OSTEOARTHRITIS AMONG THE RURAL ADULTS

n=275

SL. NO	RISK FACTORS	KNOWLEDGE		χ^2 VALUE	df	P VALUE
		MODERATELY ADEQUATE	ADEQUATE			
	DIETARY FACTORS					
1	**Consumption of fried food**			4.194	1	0.040*
	Yes	79	118			
	No	21	57			
2	**Consumption of red meat, sugar**			0.076	1	0.782^{NS}
	Yes	56	101			
	No	44	74			
3	**Extra salt in meal**			0.134	1	0.715^{NS}
	Yes	52	95			
	No	48	80			
	PHYSICAL ACTIVITY					
4	**Exercise**			5.330	1	0.020*
	Yes	37	90			
	No	63	85			
5	**Difficulty in performing activities of daily life**			0.001	1	0.981^{NS}
	Yes	35	61			
	No	65	114			
6	**Repetitive movement of knee bending or squatting.**			1.574	1	0.210^{NS}
	Yes	43	89			
	No	57	89			
	ILLNESS & FAMILY HISTORY					

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7	**History of Diabetes Mellitus**					
	Yes	14	27	0.102	1	0.749^{NS}
	No	86	148			
8	**History of joint surgery**					
	Yes	9	29	3.063	1	0.080^{NS}
	No	91	146			
9	**History of joint stiffness**					
	Yes	50	90	0.052	1	0.820^{NS}
	No	50	85			
10	**History of arthritis in family**					
	Yes	24	73	8.746	1	0.003*
	No	76	102			
11	**BMI**					
	Normal	61	86			
	Overweight	28	59			
	Class I Obesity	9	23	4.047	3	0.258^{NS}
	Class II obesity	2	7			

***p<0.05 level of Significance NS-Non significant**

The findings in the table 6 shows that knowledge of the adults have a significant association with their dietary factor that is "Do you generally take deep fried foods", physical activity factor "Do you exercise", Illness and family history factor that is "Do you have a history 0f arthritis in your family" at 0.05 level of significance.

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DISCUSSION

The present study shows that the majority i.e 63.6% of the rural adults are having adequate knowledge and 36.4% of the rural adults are having moderately adequate knowledge and none in inadequate and there is significant association between educational level and life style of adults with their knowledge. There is significant association between Dietary factors of the adults with their occupation and lifestyle, physical activity of the adults with their occupation, illness and family history of the adults with their educational level and BMI of the adults with their educational qualifications, family income and life style and there is significant association between Knowledge of the rural adults with their dietary factor of "Do you take deep fried foods", physical activity factor that is "Do you exercise" and lastly the illness and family history that is "Do you have a history of arthritis in your family". Based on the study findings it is recommended that similar study can be replicated on larger sample covering more geographical areas to generalize findings.

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