

Knowledge and Attitude on Dementia among Adults in Tertiary Care Hospital, Gangtok Sikkim- A Descriptive Study

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Abstract

Background: Dementia is an escalating public health concern, and early identification largely depends on the awareness and attitudes of the middle-aged population. Although the prevalence of dementia is increasing in India, there is limited region-specific data, particularly from areas such as Sikkim.

Materials and Methods: The study was conducted among middle aged population 44-60 years in urban setting of tertiary care hospital at Gangtok, Sikkim. The study duration was about 6 months. The data were collected using a predesigned semi-structured knowledge questionnaire and attitude was measured by 5-point Likert scale consisting of 198 Sample. The collected data was analyzed using descriptive and inferential statistics.

Results: The study revealed that 108(54.6%) of participants had average knowledge, 65(32.8%) had good knowledge, and 25(12.6%) had poor knowledge about dementia. A substantial majority 188 (94.9%) exhibited a favorable attitude towards dementia care. A moderate positive correlation was identified between knowledge and attitude ($r = 0.462$, $p = 0.001$). Knowledge was significantly associated with demographic variables such as marital status and educational qualification (p

< 0.05), whereas no significant association was observed between attitude and any demographic variable.

Conclusion: Although most participants showed a positive attitude, their knowledge levels varied, indicating considerable gaps. These findings underscore the necessity of targeted awareness initiatives to enhance dementia literacy among the middle-aged population in the Urban settings.

Keywords: Knowledge, attitude, dementia, adults, tertiary care hospital, descriptive study

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I. INTRODUCTION

Dementia is one of the most common diseases that progresses over time where one's behavioral and cognitive abilities are immobilized. Dementia is a syndrome that can be caused by several diseases which over time destroy nerve cells and damage the brain, typically leading to deterioration in cognitive function (i.e. the ability to process thought) beyond what might be expected from the usual consequences of biological ageing. While consciousness is not affected, the impairment of cognitive function is commonly accompanied, and occasionally preceded, by changes in mood, emotional content, behavior, or motivation. Dementia is a chronic neurodegenerative disease and a leading cause of disability and dependency among older people. It can devastate the lives of affected individual, their care givers and family. It is estimated that around 50 million people were living with dementia globally in 2018, and this number is expected to triple to 152 million by 2050 because of the aging population. Therefore, dementia has become a globally prioritized health issues and a global action plan was adopted by WHO. Increasing public knowledge of dementia is beneficial for detecting the first sign of dementia and to improve the quality of life and dignity of people with dementia, their caregiver and families. The prevalence of dementia has increased dramatically with the global population aging. According to ministry of statistic and program implementation India, the older adult population is rapidly increasing with 138 million elderly in 2021. It is estimated that by 2031 the population of elderly will increase by 56 million. Dementia is caused by different diseases or injuries that directly or indirectly damage the brain. Other form include vascular dementia, dementia with Lewy bodies (abnormal deposit of protein inside the nerve

cell), and the group of disease that contributes to frontal temporal dementia (degeneration of the frontal lobe of the brain) dementia may also develop after stroke or in the context of certain infections such as HIV, as a result of harmful use of alcohol, repetitive physical injuries to the brain (known as chronic traumatic encephalopathy) or nutritional deficiencies. The boundaries between different forms of dementia are indistinct and mixed forms often co-exist.^[1]

OBJECTIVE:

1. To find out the level of knowledge towards dementia among middle aged attending.
2. To assess the attitude towards dementia among middle aged attending.
3. To determine the correlation between knowledge and attitude towards dementia.
4. To find the association between knowledge with selected demographics.
5. To find the association between attitude with selected demographics.

II. Methodology

Study design and study setting

The study was conducted and analyzed using descriptive analysis and inferential statistics. This study was conducted among the middle-aged adults of tertiary care Central Referral Hospital, Gangtok, Sikkim. The study was conducted from January 2025 to March 2025.

Study Population

The study population was selected on middle aged 44-60 years from the urban setting, central referral hospital, Gangtok, Sikkim

Sample size and Sampling technique

The sample size was calculated using total enumeration method $N=198$. Since the tertiary care hospital during the time of data collection there were subject of 210, inclusion criteria and exclusion criteria has been looked into the sample i.e middle-aged individuals (44–60 years) visiting OPD, Willing to participate, Present at time of data collection and excluded the adults who has serious/unstable conditions during the outpatient visit. We have collected the data from 198 sample from Central referral hospital outpatient department.

Tool Study tool

According to our study based on the objectives were assessed using the pre-designed semi-structured and 5-points likert scales for measuring the attitude. Before administering the tool we have pre-tested the tools and validated by 7 experts with the calculation of CVI=0.85 and reliability was checked for internal consistency by using cronbach's alpha and spearman correlation coefficient which was came to 0.78

The first questionnaire consisting of socio-demographic such as age in years, gender, religion, marital status, educational qualification, type of employment, occupational status, monthly income and accommodation.

The tool of knowledge domain was measured including the questions of multiple choice question which is 20 questions which the respondents will be choosing the right answer from the four options. The correct answer carries one mark and wrong answer carries 0 marking. The scoring system were categorized into poor knowledge, average knowledge and good knowledge respectively. the knowledge questions

domains includes the understanding of dementia, what are the root causes of dementia, human risk factors of dementia, the sign and symptoms observed from the dementia patients, warning signs of dementia and its behavioral changes in the dementia patients and also how to identify the client in the early stage including the treatment of dementia and care and management of patient with dementia.

According to our study the attitude were assessed by 5 point likert scale with the consistent of self expression and attitude toward dementia patient including the scale with the scoring system of strongly agree =5 marks, agree=4 marks, uncertain=3marks, disagree=2marks, strongly disagree =1marks. The maximum score was 100 and the minimum score is 20. This attitude scale were categorized into favorable attitude= $\geq 80\%$ (80-100) and unfavorable attitude= $< 80\%$ were below 80 marks.

Data collection

The questionnaire was administered through face-to-face interviews in the outpatient department by the investigators after obtaining the informed consent the participant voluntarily participated in this

study . The data was collected from 198 samples from midde aged (44-60 years) population at central referral hospital gangtok Sikkim. The questionnaire from which the participant was collected by using the purposive sampling technique. While administering the predesigned semi –structured questionnaire we waited till the questions were answered followed by the attitude 5- point likert scale and checked for completed tools for any missing responses .The data was carried and assigned code participants in its tool and the data were kept secure and confidential.

Statistical analysis

Collected data was analyzed and imported to Microsoft excel and analyzed using statistical package for social science (SPSS),version 31.0.Descriptive analysis was categorized according to the demographic variable which were described with frequency and percentage and continuous variables were analyzed and described using mean with standard deviation and median . According to the objective the statistical analysis was done done which is inferential statistics. The association of variables was analyzed using Pearson correlation coefficient with statistically were judged significant at a p values <0.05 level of significance.

Ethical clearance and informed consent

Ethics committee approval was obtained from the institution ethics committee of Sikkim Manipal Institute of Medical Sciences , Sikkim Manipal University[SMIMS/IEC/2025-12] before the start of the study. Informed sheet and written consent form was acquired from the participants before the study by explaining the purpose , objectives and beneficiaries of the study .

III. Results

The data presented the table 1 shows that most of the samples 66(33.3%) belongs to the age group of 44-47,101(51%) were female ,105(53%) were Hindu by religion , majority 163 (82.3%) were married middle aged group ,most 84(42.4%) have secondary education qualification . Regarding type of employment, 41 (20.7%) were unemployed, 56 (28.3%) were self-employed,63(31.8%) were private employee ,and 38 (19.2%) were govt. employees . For occupational status, 51 (25.8%) were professional, 56 (28.3%) were business, 44 (22.2%) were skilled workers, 25 (12.6%) were semi-skilled workers, and 22 (11.1%) were farmers. For family monthly income, 3 had less than 10,000, 65 (32.8%) had 10,001–20,000, 55 (27.8%) had 20,001–30,000, and 43 (21.7%) had above 30,000. Regarding living accommodation, 8 (4%) lived alone, 10 (5.1%) lived with friends, 174 (87.9%) lived with family, and 6 (3%) lived with relatives.

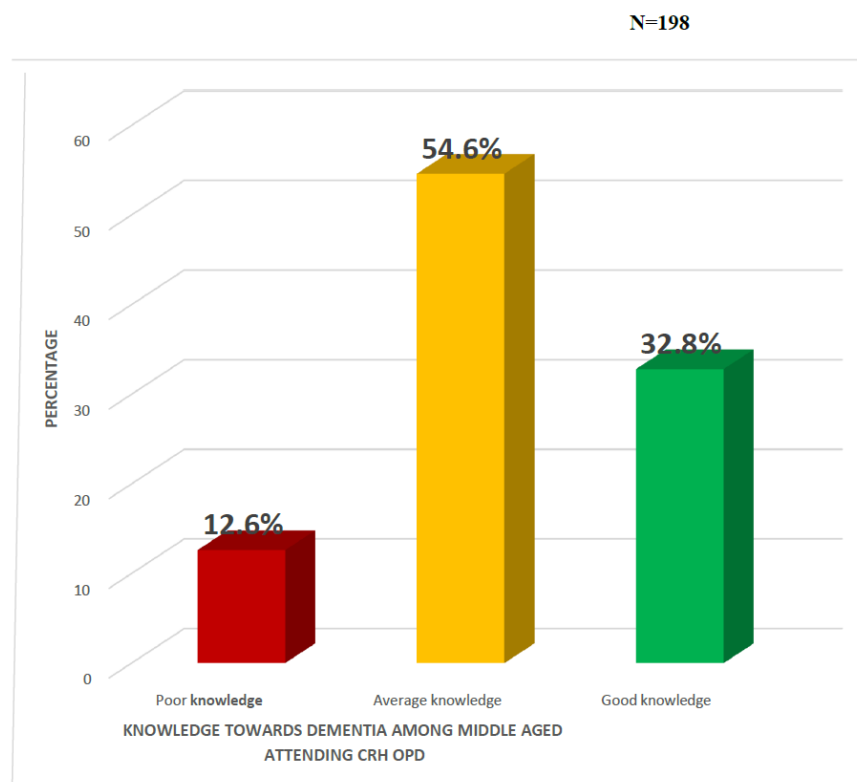
Table 1: Frequency and Percentage Distribution of Demographic characteristics (n=198)

S.	Demographic Variables	Frequency	Percentage
No			
1	Age in years		
	a. 44-47	66	33.3
	b. 48-51	58	29.3
	c. 52-55	33	16.7
	d. 56-60	41	20.7
2	Gender		
	a. Male	97	49
	b. Female	101	51
3	Religion		
	a. Hindu	105	53

	b. Christian	31	15.7
	c. Muslim	6	3
	d. Buddhist	56	28.4
4	Marital status		
	a. Married	163	82.3
	b. Unmarried	35	17.7
5	Educational qualification		
	a. No formal education	31	15.7
	b. Primary education	54	27.3
	c. Secondary education	84	42.4
	d. Graduate	29	14.6
	e. Post Graduate and above	0	0
6	Type of employment		
	a. Unemployed	41	20.7
	b. Self-employed	56	28.3
	c. Private employee	63	31.8
	d. Govt. employee	38	19.2
7	Occupational status		
	a. Professional	51	25.8
	b. Business	56	28.3
	c. Skilled workers	44	22.2
	d. Semi-skilled workers	25	12.6
	e. Farmers	22	11.1
8	Family monthly income		
	a. Less than 10,000	3	17.7
	b. 10,001 – 20,000	65	32.8
	c. 20,001 - 30,000	55	27.8
	d. Above 30,000	43	21.7

9	Living accommodation		
a.	Alone	8	4
b.	Living with friends	10	5.1
c.	Living with family	174	87.9
d.	Living with relatives	6	3

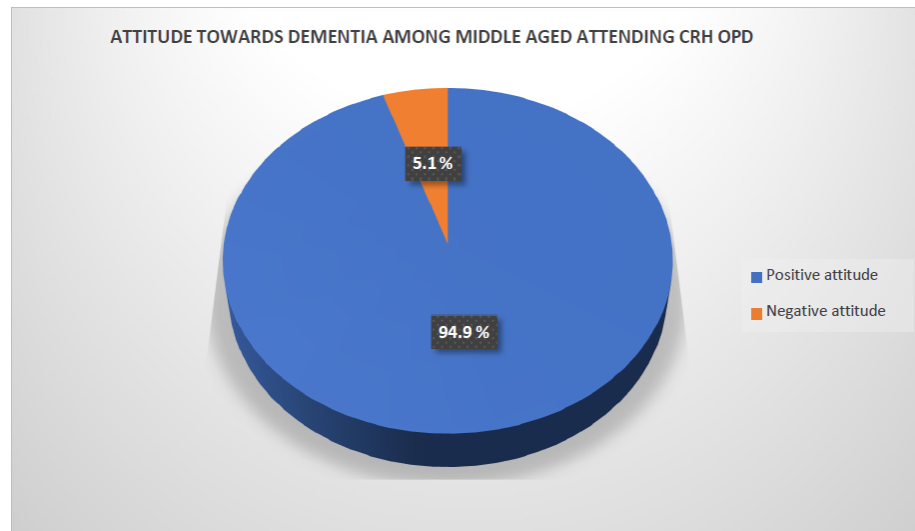
Fig 1: Distribution of level of knowledge towards dementia among middle aged attending CRH OPD



The data presented in figure no.1 shows that out of 198 samples 25 (12.6 %) had poor knowledge, whereas 108(54.6%) had average knowledge and 65(32.8%) had Good Knowledge towards dementia among middle aged population attending Tertiary Care Hospital, (Central referral hospital),Gangtok, Sikkim.

Fig 2: Distribution of attitude towards dementia among middle aged attending Tertiary Care Hospital, (Central referral hospital),Gangtok, Sikkim.

Fig 2 shows the attitude towards dementia that we look into further actual understanding and awareness , acceptance in society and empathy towards dementia clients and also willingness to engage and manage the fair ,stigma or any avoidance towards dementia. The attitude scale includes the medical conditions and supportive community involving denial discrimination or excessive ignorance.



The data presented in fig.2 shows that out of 198 samples 188(94.9%) had a positive attitude towards the care and concern about the dementia whereas 10(5.1%) had a negative attitude towards dementia.

Mean, median and SD of level of attitude towards dementia among middle aged attending Tertiary Care Hospital, (Central referral hospital),Gangtok, Sikkim.

N=198

Level of attitude	f	%	Score range	Median	Mean	SD
Negative attitude	10	5.1	41-99	69	68.58	9.99
Positive attitude	188	94.9	58			

Table 2: Correlation between knowledge and attitude towards dementia among middle aged attending Tertiary Care Hospital,(Central referral hospital), Gangtok, Sikkim.

N=198

Correlation	Mean	SD	r value	p value
knowledge	12.12	4.07	0.462	0.001*
Attitude	8.58	9.99		

Table 2 illustrates the correlation between knowledge and attitude towards dementia among middle aged attending CRH OPD was tested by using Karl Pearson formula.

Result showed that ($r=0.462$, $p=0.001$) indicate moderate positive correlation and was statistically significant. Hence the null hypothesis (H_0) is rejected since, the r value is 0.462 which is lesser than 1.

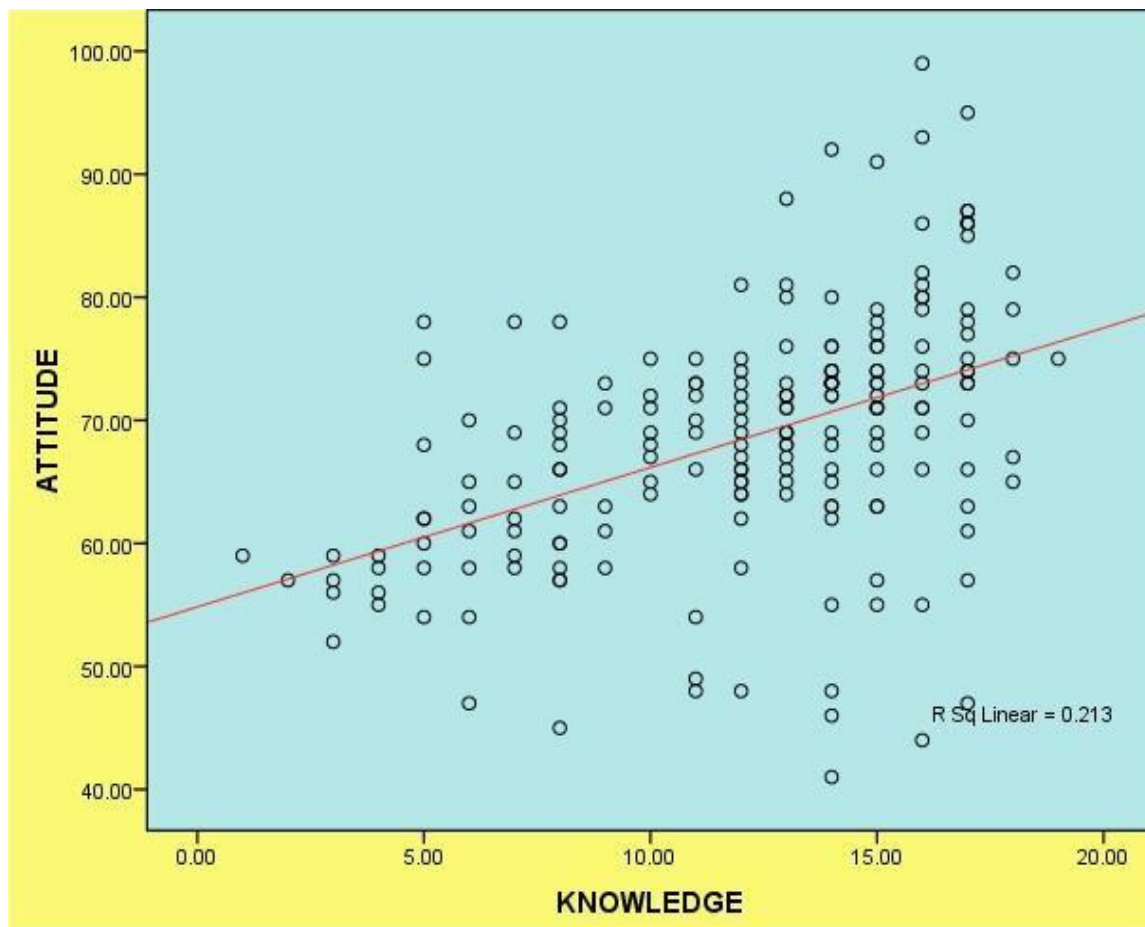


Fig 3: Correlation between knowledge and attitude towards dementia among middle aged attending Tertiary Care Hospital, (Central referral hospital), Gangtok, Sikkim.

Table 3. Association between knowledge towards dementia among middle aged attending tertiary care setting with demographic variables. **N=198**

Sl.no	Demographic	Knowledge			χ^2	df	p value
		Poor	Average	Good			
1.	Age in years:				3.88	6	0.692NS
	a. 44-47	5	38	23			
	b. 48-51	8	30	28			
	c. 52-55	5	16	12			
	d. 56-60	24	10				
2.	Gender:				1.453	2	0.484NS
	a. Male	10	52	35			
	b. Female	15	56	30			
3.	Religion:				8.981	6	0.175NS
	a. Hindu	11	63	31			
	b. Christian	4	18	9			
	c. Muslim	0	5	1			
	d. Buddhist	10	22	24			

4. Marital status:				12.71	2	0.002*
a. Married	21	80	62			
b. Unmarried	4	28	3			
5. Educational qualification:				12.72	6	0.048*
a. No formal education	4	24	3			
b. Primary education	7	31	36			
c. Secondary education	11	37	36			
d. Graduate	3	16	10			
e. Post graduate and above	--	--	00			
6. Type of employment:				13.78	6	0.092NS
a. Unemployed	9	20	12			
b. Self-employed	5	37	14			
c. Private employee	9	35	19			
d. Govt. employee	12	16	20			
7. Occupational status:				12.97	8	0.235NS
a. Professional	8	23	20			
b. Business	1	38	17			
c. Skilled workers	4	31	9			
d. Semi-skilled worker	4	11	10			
e. Farmers	8	5	9			
8. Family monthly income:				8.311	6	0.216NS
a. Less than 10,000	7	19	9			
b. 10,000 – 20,000	8	37	20			
c. 20,000 – 30,000	7	33	15			
d. Above 30,000	3	19	21			
9. Living accommodation:				1.946	6	0.925NS
a. Alone	2	4	2			
b. Living with friends	2	4	2			
c. Living with family	20	96	58			
d. Living with relatives	1	3	2			

p value < 0.05 level of significance NS-Non-Significant

Table 3 depicts the association between knowledge towards dementia among middle aged attending CRH OPD with demographic variables which was tested by using chi square test . Result showed that marital status and educational qualification were found significant association at $p < 0.05$ but demographic variables such as age, gender, religion, type of employment, occupational status, monthly income, and living accommodation were found to be non-significant at $p < 0.05$ with knowledge towards dementia among middle

aged attending CRH OPD. Hence, the null hypothesis (H_{02}) is rejected and it is only accepted for marital status and educational qualification.

Table 4. Association between attitude towards dementia among middle aged attending tertiary care setting with demographic variables. N=198

Sl.no	Demographic variables	Attitude		X2	df	p value
		Positive	Negative			
1.	Age in years:			1.743	3	0.627NS
	a. 44-47	3	63			
	b. 48-51	3	55			
	c. 52-55	3	30			
	d. 56-60	1	40			
3	Gender:			0.341	1	0.559NS
	a. Male	4	93			
	b. Female	6	95			
4	Religion:			3.867	3	0.276NS
	a. Hindu	5	100			
	b. Christian	0	31			
	c. Muslim	1	5			
	d. Buddhist	4	52			
5	Marital status:			0.427	1	0.514NS
	a. Married	9	154			
	b. Unmarried	1	34			
6	Educational qualification:			2.207	3	0.531NS
	a. No formal education	31	15.7			
	Primary education					
	Secondary education	54	27.3			
	b. Graduate	84	42.4			
	c. Post graduate and	29	14.6			
	above	0	0			
	e.					
	f.					
7	Type of employment:			6.084	3	0.108NS
	a. Unemployed	41	20.7			
	b. Self-employed	56	28.3			
	c. Private employee	63	31.8			
	d. Govt. employee	38	19.2			

8	Occupational status:		3.276	4	0.513NS
	a. Professional	51	25.8		
	b. Business	56	28.3		
	c. Skilled workers	44	22.2		
	d. Semi-skilled worker	25	12.6		
	e. Farmers	22	11.1		
9	Family monthly income:		0.549	3	0.908NS
	a. Less than 10,000	3	17.7		
	b. 10,000 – 20,000	65	32.8		
	c. 20,000 – 30,000	55	27.8		
	d. Above 30,000	43	21.7		
10	Living accommodation:		1.261	3	0.738NS
	a. Alone	8	4		
	b. Living with friends	10	5.1		
	c. Living with family	174	87.9		
	Living with relatives	6	3		

***p value < 0.05 level of significance**

NS-Non-Significant

Table 4 depicts the association between attitude towards dementia among middle aged attending CRH OPD with demographic variables which was tested by using chi square test. Result showed that demographic variables such as age, gender, religion, marital status, educational qualification, type of employment, occupational status, monthly income, and living accommodation were found to be nonsignificant at $p < 0.05$ with attitude towards dementia among middle aged attending CRH OPD. Hence, null hypothesis (H_{03}) is accepted.

Mudgal and Shukla (2024): Titled "Attitude and Risk Perception of Dementia in Older and Middle-Aged Adults: A Qualitative Study" published in the International Journal of Indian Psychology. This study explores how middle-aged and older populations perceive dementia risks and demonstrates that while risk perception or structured knowledge can vary, community members typically maintain a cooperative and receptive mindset toward handling conditions associated with aging.

World Alzheimer Report (Prince et al., 2016): Titled "Improving healthcare for people living with dementia: Coverage, Quality and costs now and in the future". This comprehensive international report emphasizes that while public awareness and formal diagnosis rates remain widely restricted (reflecting average or limited knowledge gaps in populations), broader societal readiness and positive attitudes toward care and support structures are essential components highlighted on a global scale.

The result of our study were related to those above two study with knowledge and attitude .this study provide the same result in attitude .

IV. Strength and Recommendation

Our study has made a strong progress how the middle aged adult population understand regarding the dementia the knowledge and understanding was been evaluated across the various dimension including risk factors, sign and symptoms ,how to identify behavioral changes, effects , their habits , treatment, intervention and management.

Also our study look into further actual understanding and awareness , acceptance in society and empathy towards dementia clients and also willingness to engage and manage the fair ,stigma or any avoidance towards dementia. The attitude scale includes the medical conditions and supportive community involving denial discrimination or excessive ignorance.

The result of our study can be used as a next step for further longitudinal study where an impact can be

assessed over a longer period of time to dementia client also the qualitative studies into dementia offering the dementia clients, its challenges, encounter in family care giver. We recommend the actual altruism in common types of dementia groups that can be studied individually to identify the certain barriers in understanding the changes.

Limitations

In our recent study we evaluated subjectively the overall awareness and understanding of dementia among middle aged population .The present study is limited to tertiary care setting .This study has assessed the subjective data and further the study is limited to certain period of time due to time constrains . Our study the main sample was the middle aged population not the population with dementia.

V. Conclusion

The present study assessed the knowledge and attitude towards dementia among middle-aged individuals attending at Central Referral Hospital, Gangtok. The findings revealed that although most participants held a positive attitude towards dementia, their level of knowledge was mostly average, with a smaller portion showing good or poor understanding. This highlights a knowledge gap that needs to be addressed through education and awareness programs. A moderate positive correlation was observed between knowledge and attitude, suggesting that as individuals become more informed about dementia, they are more likely to develop supportive and proactive attitudes. Additionally, marital status and educational qualification were significantly associated with knowledge levels, indicating that social and educational factors influence awareness. However, no demographic variable showed a significant link with attitude. Overall, the study emphasizes the importance of targeted educational efforts to enhance knowledge about dementia, which can help promote early recognition, reduce stigma, and improve care giving practices within this age group.

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Nil

Conflicts of interest

There are no conflicts of interest.

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