

Research Article

Assessment of level of awareness of dementia and its associated risk factors among elderly population of Pakistan aged 60-90 years:A cross-sectional study.

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Abstract

Background: Dementia is a public health concern globally, with its significant impact on elderly population. Therefore its knowledge is crucial for its early detection, prevention and management to improve quality of life on elderly population. In this study, we assessed the awareness level of dementia and its modifiable risk factors among elderly population of Pakistan.

Methods: This cross-sectional study was conducted among elderly population of age 60-90 years in a tertiary care setting and Convalescent home, for analysis of dementia knowledge and assessment of risk factors, using non-probability convenient sampling technique. A preformed structured questionnaire was used to collect data about knowledge of dementia and its modifiable risk factors compared with socio-demographic factors.

Results: Out of 84 participants that were recruited for the study, mean age was calculated to be 63 years (S.D=10.3). There was higher proportion of female 51(60.7%). The frequency and percentages of population being able to correctly identify risk factors were (obesity 8(9.5%), diabetes 13 (15.5%), depression 58(69%), high blood pressure 28(33.3%), smoking 18 (21.4%), high cholesterol levels 7(8.3%). High education status, having contact or knowing someone with dementia or having dementia themselves are factors found to be strongly associated with knowledge and understanding of dementia and risk factors.

Conclusion: In accordance with objectives and results, study reveals low awareness levels of dementia and its risk factors. Moreover, low education levels are significantly associated with less dementia knowledge and risk factors awareness of elderly population. This study highlights the need for targeted interventions to increase knowledge of dementia and its associated risk factors.

Keywords: Dementia, awareness, knowledge, risk factors.

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Introduction

Dementia is a syndrome that involves a gradual cognitive decline along with neuropsychiatric symptoms of agitation, anxiety and depression¹. Dementia is one of the significant Public health concern particularly in low and middle income countries.² Alzheimer's disease accounts for 60-80% being the most common type of dementia³. As the elderly population increases globally, prevalence and incidence of senile dementia also increases⁴.

Around 60 million people are currently living with dementia worldwide⁵ which is predicted to increase up to 75 million in 2030 and up to 152 million by 2050⁶. Most of the cases (~67%) reported globally are from low and middle income countries⁵. Although dementia has been reported as a young-onset disease, it primarily affects older people with the population of China India and Latin America are predicted to be affected by it the most⁷. With its large population, 17.9% of total comprised of older people with dementia prevalence of 2% - 13%.⁸ In Pakistan, with an increasing elderly population the prevalence of dementia has also been increased. Approximately, Pakistan has 150,000-200,000 patients with dementia and these numbers are expected to rise from 2% to 6% over the next 30 years especially in the age group of above 65 years⁹.

Dementia is not only causing great disability and depend-



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ency among individuals¹⁰, but also there is increased health care costs that accounts for individuals been diagnosed with dementia¹¹. The total cost for dementia is expected to increase from US \$ 960 billion in 2015 to US \$ 2.54 trillion in 2030 and is expected to reach US \$ 9.14 trillion by 2050³. Compared to a healthy elderly population, older people with Mild cognitive impairment, accompanied by impaired memory and learning, are at more risk for developing dementia¹².

Although dementia has no cure or any effective medical treatment, its onset can be delayed by active management of its modifiable risk factors⁶. There are total of 12 potentially modifiable risk factors for dementia as reported by The Lancet Commission on Dementia Prevention, Intervention and Care, 2020 report (less education, hypertension, excessive alcohol consumption[more than 21 units]¹³, smoking, diabetes mellitus, obesity[BMI>30Kg/m²], physical inactivity, depression, low social contact, air pollution, traumatic brain injury and stress)¹⁴.

Despite these factors, age is still the most significant and potential non modifiable risk factor¹⁵. WHO, in its Global Action Plan on Public Health Response to Dementia, stressed on dementia literacy to be a significant action for maximising risk reduction potential.¹⁶ Knowledge of dementia risk factors is generally low in population¹⁶. Previously no cross sectional studies were done to assess the level of awareness of dementia and its risk factors among elderly in Pakistan. The aim of this study is significant reduction in dementia onset by raising awareness through campaigns and by early access to health services by patients and caregivers.

Methods

A cross sectional study design was used. The study is conducted at tertiary care Hospital(Mayo Hospital,Lahore) and Convalescent Home. A convenient sample of 84 adults aged 60- 90 years was taken. Participants were excluded based upon presence of any other chronic disease ,vision or hearing impairment or who were below age of 60years. IRB Approval was obtained from KING Edward Medical University for the study. Informed consent was taken from each participant and information collected was kept confidential. A preformed Questionnaire was used for the study that includes items including socio-demographic factors, knowledge of dementia ,and awareness of its associated risk factors. It includes key factors such as age, gender ,marital status ,as well as questions of dementia knowledge including, “whether they have dementia by themselves”, and, “whether they know anyone with dementia.” This section includes questions about dementia risk factors, according to WHO guidelines, including high blood pressure, smoking ,alcohol use, diabetes, depression, high cholesterol levels, and physical inactivity. Participants were asked to choose any one of these options, “Strongly agree”, “Agree”, “Neutral” “Str-

ongly disagree”, “disagree”. Statistical Analysis was performed with SPSS version 29.0. Mean and standard deviation (SD) calculated for Continuous data (age) and categorical data (gender, marital status, education) were represented as frequency and percentages. Adjusted Odd Ratios(AORs)and 95% Confidence Intervals (CIs) were calculated .

Results

There were total 84 participants. Table 1 shows characteristics of participants. Participants mean age calculated was 63.05 years (SD = 10.3). Among gender status, a higher proportion of participants was of female 51 (60.7%) . Mostly, the education status of participants was low 73 (86.9%). A few proportion,6(7.1%) had high education status. Around 20(24.1%) of respondents had dementia themselves . 8(9.6%) participants reported to know someone else with dementia, and 4(4.8%) participant’s partner or parents had dementia themselves.

Dementia with its associated Risk and Non- risk factors as given in Figure 1. Participants had identified risk factors of dementia. Among the risk factors, major percentage 58(69%) of participants recognised “depression” to be one of its risk factor. Participants that recognised other risk factors, 28(33.3%) for “high blood pressure “, for smoking percentage was 18(21.4%) for diabetes was 13(15.5%), 8(9.5%) for obesity . For Non risk factors, greater percentage around 41 (48.8%) for

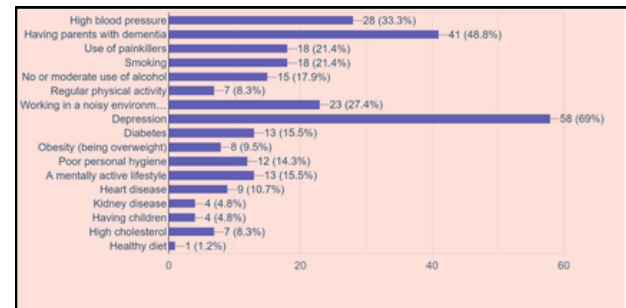


Fig.1: Frequency and percentages of participants (both risk and non- risk factors)

“Having parents with dementia”, 18(21.4%) for “ using painkillers”, 12 (14.3%) for “ poor personal hygiene” identified them as Risk factor.

Correlation Analysis linear regression performed. Table 2 shows 95% CIs whereas Table 3 included AORs values for each dementia risk factors associated to socio-Demographics (age, gender, education) to show association between them. A relatively more education status as compared to low be was more significantly associated to knowledge of dementia risk factors ; depression (AOR = 0.86, 95%CI= 2.32-4.5), diabetes (AOR= 0.58 , 95% CI= 1.20-3.09), high blood pressure (AOR=1.5 ,95%CI= 1.39-2.8), Smoking (AOR= 1.3 ,95%CI= 2.48-3.4), Obesity (AOR=0.44 ,95%CI= 1.1-1.76), high cholesterol levels (AOR = 1.12 , 95% CI=

1.40-3.07) .Other factors (age, gender, marital status) has no influence on dementia risk factors awareness. Moreover, participants with some knowledge of dementia ,Ref. High blood pressure (AOR= 0.57, 95%CI = 1.35-3.9) compared to those who had not, are more statistically

associated with dementia risk factors awareness. Participants who know anyone else with dementia Ref. Diabetes (AOR= 1.05 , 95%CI= 1.05-2.74) more strongly associated with dementia risk factors awareness as compared to those who don't know anyone with dementia.

Table 1: *The Socio-Demographic Characteristics of the Participants (N=84)*

VARIABLES		N=84
VARIABLES		N(%)
Age Groups		
60-70		79.8%
71-80		14.3%
81-89		6.0%
Gender		
Male		33(39.3%)
Female		51(60.7%)
Marital status		
Married		72(86.7%)
Widowed		11(13.3%)
Education Level		
Low		73(86.9%)
Medium		5(6.0%)
High		6(7.1%)
Have dementia by yourself		
Yes		20(24.1%)
No		64(75.9%)
Know anyone with dementia		
No		43(51.8%)
Yes, someone else		8(9.6%)
Yes, my partner or parents		4(4.8%)

Table 2: Knowledge of modifiable risk factors , linear regression analysis

	Depression	Diabetes	High Cholesterol	Overweight	High Blood Pressure	Smoking
CI	95%	95% CI	95% CI	95% CI	95% CI	95% CI
Age	.6-7.7	.53-3.22	.519-3.25	.67-4.4	.38-2.1	.81-8.8
Female sex (ref male)	.45;5.9	.46-5.2	.164-2.09	.58-9.3	.52-5.7	.31-4.1
Education (ref low)	2.32-4.5	1.2-3.9	1.40-3.07	1.1-1.76	1.39-2.8	2.48-3.4
Knowledge about Dementia (ref some)	1.40-6.4	2.5-5.5	.246-4.14	2.19-8.6	3.35-5.9	1.1-5.5
Know anyone with dementia (ref yes)	1.94-2.6	1.0-2.74	1.0-2.79	1.90-2.38	1.70-2.74	2.89-3.4

Table 3: Socio-demographic factors associated with dementia risk factors

	Depression	Diabetes	High Cholesterol	Overweight	High Blood Pressure	Smoking
AOR		AOR	AOR	AOR	AOR	AOR
Age	2.1	1.31	1.29	1.73	1.33	2.6
Female sex (ref male)	1.6	1.56	.58	2.33	.24	1.14
Education (ref low)	.86	.58	1.12	.44	1.5	1.30
Knowledge about Dementia (ref some)	1.62	1.92	.87	4.7	.57	.41
Know anyone with dementia (ref yes)	1.5	1.05	1.68	1.47	1.8	1.49

Discussion

Recent research on modifiable dementia risk factors highlights the importance of prioritizing dementia prevention by mitigating these risks. The effectiveness of these prevention efforts depends on the public's awareness and understanding of dementia. The results of this study indicate that although much research has been done regarding dementia and its causes, there continues to be a substantial disparity between the public's comprehension of dementia and the nuances of its associated risk factors. Our study reveals that most participants had low education levels and that solely is the cause of little knowledge of dementia and its risk factors awareness. These findings underscore the urgent necessity to enhance public awareness of dementia prevention and to tailor educational strategies to accommodate diverse socio-demographic backgrounds.

The majority of the population had some knowledge of dementia. Our study shows that 86.9% of the population belongs to the lower education class and so have little knowledge about dementia. A similar study conducted in Malaysia to assess the knowledge of dementia among the elderly reported that 92.8% had a low level of dementia awareness⁶. The studies show other sociodemographic factors (age, marital status, gender) to be less significantly associated to Dementia risk factors and awareness.

Among the various factors associated with the risk of developing dementia, respondents exhibited a notable emphasis on social and psychological determinants. A major percentage 58(69%) of participants recognized "depression" to be one of its risk factors. A similar study done in China reported that 78.2 % people believed that stress and depression was the major risk factor¹⁰

Fewer people recognized cardiovascular issues such as high blood pressure as a leading risk factor (33.3%) . Previous studies also found that people have less awareness of the role of cardiovascular disease management in the development of dementia¹³. This maybe because people have poor knowledge about cardiovascular issues. This phenomenon could stem from the public's prevailing perception of dementia as solely a mental health disorder, coupled with a general lack of public health education regarding the connection between cardiovascular diseases and dementia. This observation highlights the necessity of developing health education initiatives that endorse the significant relationship between cardiovascular risk factors and dementia.

Lower education level was also identified to be associated with a lower understanding of dementia risk factors. This finding is in agreement with several previous studies^{19,20}. This situation may be attributed to the limited access to dementia prevention information available to this disadvantaged group, indicating a need for increased focus and resources directed towards them. Participants who have interacted with individuals with dementia tend to possess greater awareness of dementia risk factors, lik-

ely because their experiences necessitate a heightened attention to dementia-related knowledge.

Many respondents felt inadequately informed about dementia through public education. Consequently, there is a need for increased efforts by the government, media, medical institutions, and communities to enhance the dissemination of dementia knowledge. Additionally, participants preferred receiving health education through advice from family physicians and guidance from community nurses.

Our study has several limitations and they have had an impact on the interpretation and results. . Despite the growing incidence of dementia our study is constrained by a relatively small sample size (n=84). With this small sample size, there is a greater chance of randomised error. A similar study conducted in China had presented with a sample size of 358, much larger than ours and so more precise¹⁰. Secondly since the data regarding risk factors is from a population with limited medical knowledge, so the self-reported data may be subjected to biases and inaccuracies. . Thirdly our study provides only a snapshot of current knowledge and ethical awareness due to time limitation. The study does not explore how knowledge and awareness may change or evolve over time. Finally, this study relied solely on a quantitative survey to address the research questions. Future research should incorporate in-depth qualitative methods to provide a more comprehensive understanding of the public's attitudes towards dementia prevention and associated factors.

Conclusion

Our study findings reveal low awareness levels of dementia and its risk factors. Moreover, low education levels are significantly associated with less dementia knowledge and risk factors awareness of elderly population. This study highlights the importance of promoting general public awareness programs for dementia to increase knowledge of dementia and its associated risk factors. For this purpose, public campaigns and research should be done. Moreover primary care providers , and community health care workers can play a significant role in promoting and making elderly population aware of dementia and its associated risk factors.

Conflict of interest: Authors declare no conflict of interest.

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Ethical Approval: Ethical approval was obtained from King Edward Medical University, Lahore.

Authors' Contributions:

MT: Conceived the idea, Data Analysis and interpretation, Data entry, manuscript writing and final approval of study.

MAI: Conceived the idea ,Data collection, proof reading and finalising .

MZ: Data collection, review of study and final approval.
 AZ: Study review and proof reading, final approval
 MN: Conceived idea ,study review and approval.
 AR: Conceived the idea, supervised all steps ,intellectual concerns , critical thinking final study approval.
 TD: Reviewed the manuscript.

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