KNOWLEDGE, AWARENESS AND ATTITUDE TOWARDS IMPROVING MEMORY

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ABSTRACT:

Memory is the remembrance of information in the past time for the purpose of influencing action in future. Memory retaining capacity may vary from one person to another. It is mainly controlled by the brain which is encoded and stored in it. There are many techniques that have been found to improve memory including cognitive training, psycho, pharmacology, diet, stress management and exercise. Each technique has the ability to influence memory in a different way. The aim of this study is to determine the factors that influence memory and cognition. An online survey with a self structured questionnaire to analyse the measures done to improve memory and problems causing memory loss. Results analysed using SPSS software version 2.0. Chi square test was done to analyse the association between various parameters. Among 100 participants, 76% responded that improving memory is important. 95% responded knowing the reasons for decreased memory. 67% responded that ageing reduces memory. So this survey is evident that the majority of the population were aware about the memory, causes and steps to boost the memory. This study may also help them to maintain good memory power and the people to be aware of improving memory as well as find the causes for memory loss and avoid them.

Keywords: Learning; memory; methods, awareness

BACKGROUND:

Memory is the remembrance of information in the past time for the purpose of influencing action in future. Memory retaining capacity may vary from one person to another. It is mainly controlled by the brain which is encoded and stored in it. There are many techniques that have been found to improve memory including cognitive training, psycho, pharmacology, diet, stress management and exercise. Each technique has the ability to influence memory in a different way.[1] Neuroplasticity is the mechanism by which the brain encodes experience, learns new behaviour and relearn lost behaviours, if the brain has damaged [2, 3]. Chronic and acute stress have adverse effects on the memory processing system. It is important to find mechanisms in which one can reduce the amount of stress in their lives when seeking to improve memory[4]. When compared to acute stress, chronic stress has a greater impact on the brain, especially in the memory processing system. During stress conditions, adrenaline is released which has an impact on short-term and working memory processes.[5,6] One of the methods to improve memory is attention which is one of the major components of memory. Receiving information to move from short-term memory into long-term memory, it needs to actively attend to the information. Physical exercise has a direct impact on brain health, regular exercise reduces the risk of cognitive decline with age and protects the brain against degeneration.[8] Deep breathing helps in good blood flow to the brain which carries more oxygen which helps in improving memory. Doing meditation helps in improving memory, increased sugar intake plays a major role in memory loss [9] and increased caffeine intake which also boost the memory.

Memory in the short-term and eating dark chocolate improves a person's memory because the cocoa flavonoids, which are the active component which chocolate helps in boosting brain function.[10] Concept Maps are diagrams that link word concepts in a fluid manner to central key concepts.They center around a main topic or idea, with lines protruding from the center with related information. Other concepts and ideas are then written at the end of each of the lines with new, related information. These related ideas are usually one or two words in length, giving only the essence of what is needed for memory retrieval.[12] Related ideas can also be drawn at the ends of the lines. This may be especially useful, given the drawing effect (people remember images better than words). The drawing effect is another way to improve memory. Studies found that images are better remembered than words, something that is now known as the picture-superiority effect.[13] Furthermore, another study found that when people are studying vocabulary, they remember more when they draw the definition, in comparison to writing it.[14] This is thought to be because drawing uses 3 different types of memory- elaborative, motor, and pictorial.[15] The benefit of using pictures to enhance memory is even seen at an older age, including in dementia patients.[16,17,18] A memory is a generic name for a type of physical memory aid designed to be worn on the wrist or ankle to help the user remember something they might otherwise forget [19,20,21]. The aim of this study is to determine the knowledge of factors involved in improving memory.

MATERIALS AND METHOD:

A cross sectional survey was conducted to evaluate awareness level of factors influencing memory. The study population has a sample size of 100. The participants did the survey voluntarily and no incentives were given to them. The study was conducted in the month of May, 2020. Ethical approval and informed consent from the participants were obtained. The questions were prepared after extensive review of existing literature. The questionnaire was reviewed and amendments were made to improve clarity of pertinent questions and eliminate ambiguous responses. The survey instrument was a structured questionnaire with both open and close ended questions. It consists of a brief introduction regarding research objectives. 8 questions were circulated to the participants via google forms. Only completely filled online forms were included in the study. The filled responses were verified by two reviewers and the collected data was entered on the same day. The data analysed statistically using SPSS version 2.0. Descriptive statistics was performed to calculate frequencies of categorical variables by using chi square test.

3.RESULT AND DISCUSSION:

The present study showed that total respondents were 100 which gives a positive method to improve memory, there are factors affecting memory and ways to prevent memory loss, progress study we know that more than 80% were aware of improving memory. Among 100 participants, 76% responded that improving memory is important and 24% respondent no (figure 1). 95% responded that know the reasons for decreased memory and 5% responded no (figure 2). 56% agreed that good blood flow increases memory and 44% disagreed (figure 3). 70.7% responded that they were aware of the steps to improve memory and 29.3% responded no (figure 4). 72% responded that head trauma reduces memory power and 28% respondent no (figure 5). 31% responded that vitamin B12 is good for memory and 69% responded that it is not good for memory (figure 6). 67% responded that depression causes forgetfulness and 33% respondent no (figure 7). 52% responded that serotonin and dopamine have an impact on memory and 48% responded no (figure 8). 67% responded that ageing reduces memory and 33% responded that ageing does not reduce memory (figure 9). In figure 10, doctors who treat memory problems psychiatrist, numerologist, both for which 39% responded for both 29% person responded for numerologist and 32% responded for psychiatrist. The figure 11 represents the association between gender and the importance of improving memory in an individual, it was found to be non significant. The figure

12 represents the association between gender and reasons for decreased memory, it was found to be non significant. The figure 13 represents the association between gender and good blood flow to the brain and can improve memory, it was found to be non significant. The figure 14 represents the association between gender and steps to improve memory, it was found to be non significant.

Most of them in this survey responded that improving memory is very important which was similar to the previous study, nearly 76% of the population felt improving memory is important to an individual. Another study which explains that good blood flow to the brain can improve memory and deep breath which takes more oxygen to the brain can also improve memory which is also homogenous to this study result. Previous literature [2] dealt in which head trauma can decrease memory power and vitamins essential for improving memory and improving methods which was similar to this study.

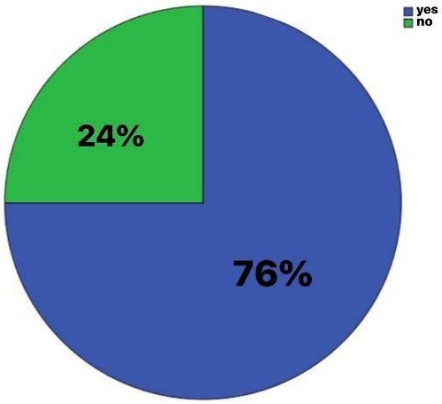

FIGURE 1: Pie chart depicts that improving memory is important for an individual. Majority of the participants responded 76% agreed that improving memory is important (blue) and 24% disagreed that it is not important (green).

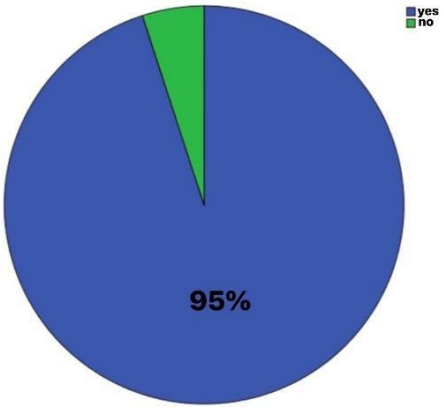

FIGURE 2: Pie chart depicts reasons for decreased memory. 95% responded that they know the reason for memory loss (blue) and negative response 5% responded no (green).

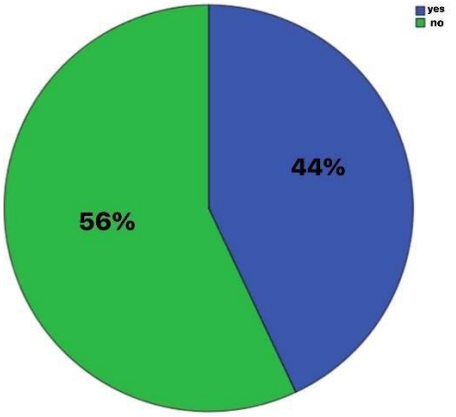

FIGURE3: Pie chart depicts good blood flow to the brain and can improve memory. 44% agreed that good blood flow to the brain increases memory (blue) and 56% disagreed (green).

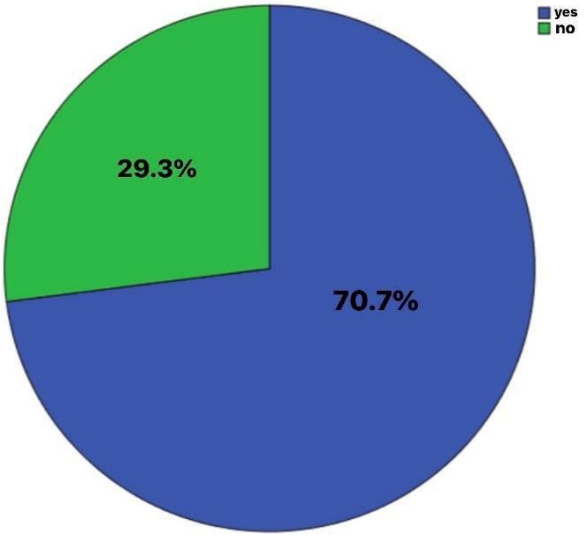

FIGURE 4: Pie chart depicts steps to improve memory. 70.7% were aware of the steps to improve memory (blue) and 29.3% were not aware (green)

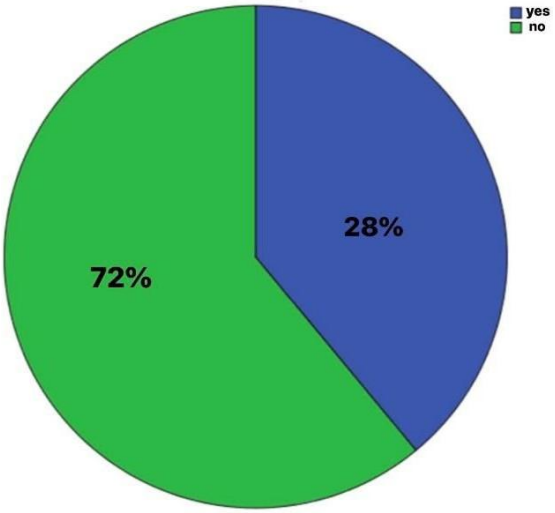

FIGURE 5: Pie chart depicts that head trauma reduces memory. 28% agreed that head trauma reduces memory power (blue) and 72% disagreed (green).

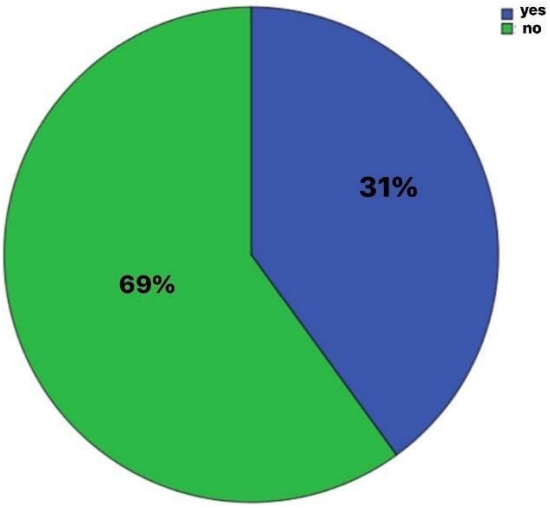

FIGURE 6: Pie chart depicts that vitamin B12 is good for memory. 31% responded yes that vitamin B12 is good for memory (blue), 69% responded no (green).

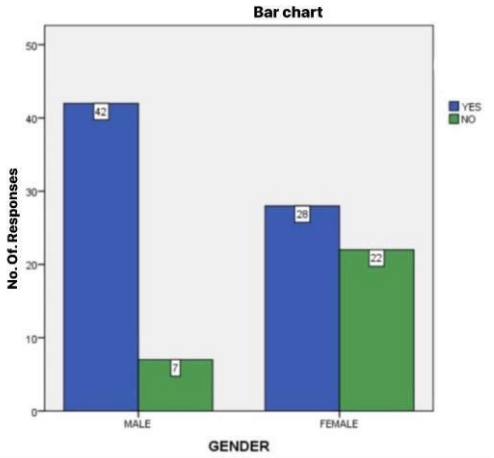

FIGURE 7: Bar graph representing association between gender and improving memory is important for an individual. X axis represents gender of the participant and Y axis represents number of participants who were aware (blue) and not aware (green). Males were more aware of improving memory is essential. Chi square test was done and the association was found to be statistically significant. Pearson Chi Square analysis:5.263, P value was 0.022 (<0.05), hence significant.

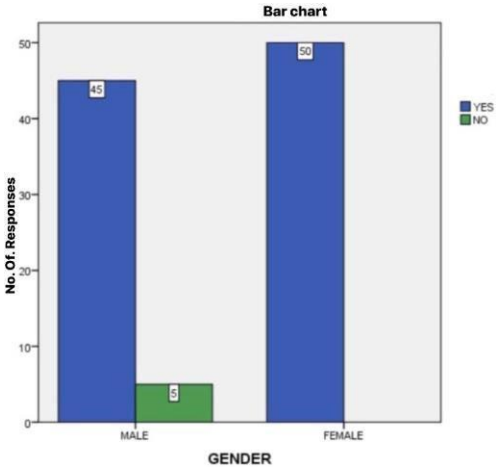

FIGURE 8: Bar graph representing association between gender and reasons for decreased memory. X axis represents gender of the participant and Y axis represents number of participants who were aware(blue) and not aware(green). Females were more aware of reasons behind the decreased memory. Chi square test was done and the association was found to be statistically significant. Pearson Chi Square analysis:5.844, P value: 0.016(<0.05), hence significant.

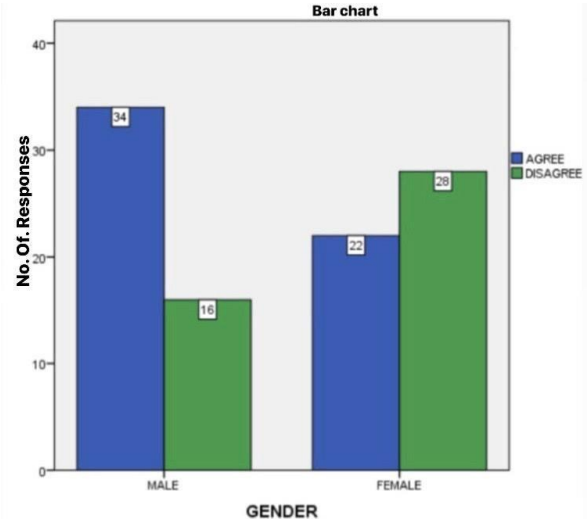

FIGURE 9: Bar graph representing association between gender and good blood flow to the brain can improve memory. X axis represents gender of the participant and Y axis represents number of participants who were aware (blue) and not aware (green). Females felt good blood flow to the brain can improve memory, hence males were more aware that good blood flow to the brain can improve memory. Chi square test was done and the association was found to be statistically significant. Pearson Chi Square analysis:10.550, p value: 0.001(<0.05), hence significant.

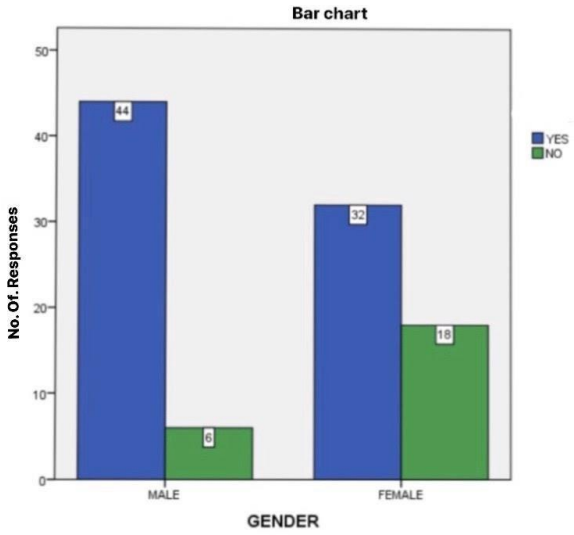

FIGURE 10: Bar graph representing association between gender and steps to improve memory. X axis represents gender of the participant and Y axis represents number of participants who were aware(blue) and not aware(green). Males were more aware of steps involved in improving memory. Chi square test was done and the association was found to be statistically significant. Pearson Chi Square analysis:38.889, p value: 0.000(<0.05), hence significant.

CONCLUSION:

Memory basically depends on synaptic connection between neurons. In the modern world, there are many ways humans are exposed to stress which affect neuronal growth that in turn affect the memory. So this survey is evident that the majority of the population were aware about the memory, causes and steps to boost the memory. This study may also help them to maintain good memory power.

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Conflict of interest: All authors declare no conflict of interest in the study.

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