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Research Paper

A Study on Correlation Between Memory and Gender

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ABSTRACT

The relationship between memory and gender has been a topic of interest for researchers for several decades. While there is no clear consensus on the exact nature of this relationship, studies have suggested that there are some differences between males and females in terms of how they remember information. One of the main differences that has been identified is that females tend to have better verbal memory than males. This means that they are better at remembering information. There are also some studies that suggest that hormonal differences between males and females may play a role in memory differences. It's said that gender differences in memory play an important role in recalling short term memory. A study conducted to find out recall process memory using auditory stimuli concluded that females scored more compared to males. This research focuses on gender differences in recalling short term memory using visual stimuli. A video was shown and after a day they were given 15 questionnaires and were asked to answer respectively. It was found that male tend to recall the initial part and females tend to remember the later part.

Keywords: *Memory, Gender, Short Term Memory*

Psychology is referred to as the science of mental behavior and the human mind, as well as the professional application of such knowledge for the benefit of society (Henriques, 2011). Psychology plays an important role in memory and its recalling. A common human activity that has significant social and psychological relevance is talking about shared past experiences (John, 2010). The application of learning across time is a common definition of memory. How is memory processed? How do we remember more? How can we better recall the tasks of the future? Memory also includes things like how accurate memories are, how they might shift over time, how this affects eyewitness evidence, and more. This all are been helped by the process of encoding, storing and retrieval (Stowell, 2013). The different types of memory are Short term memory/Working memory, episodic memory, semantic memory, collective memory, and autobiographical memory. The capacity to work with and retain knowledge in the short term is known as short-term memory. Knowing how to recall certain life events is known as episodic memory. You can save more or less permanent knowledge in your semantic memory. Group

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members' shared memories are referred to as collective memories. When we talk about autobiographical memory, we mean the ability to recall both current events and events from one's whole life (Zacks et al., 2000). Encoding, storage, and retrieval are the three steps in the memory process. The early learning of information is called encoding. The ability to access the information when you need it is referred to as retrieval, while storage is the act of storing the information over time (Saylor, 1994). Memories play an important role in a human's life as it affects one's behavior and helps you to remember important events of your life. The various factors affecting memory include ability to retain, good health, age of the learner, maturity, will to remember, intelligence, interest, over learning, speed of learning and meaningfulness of the material. These various factors have likely possibilities to cause clinical disorders related to memory (Zacks et al., 2000). As per WHO gender is the socially constructed traits of girls, boys, women, and men. This encompasses interactions with other people as well as the standards, mannerisms, and roles that come with being a woman, man, boy, or girl. Gender is a social construct that differs from society to society and is subject to change throughout time. It's said that gender differences in memory play an important role in recalling short term memory. This research focuses on gender differences in recalling short term memory using visual stimuli.

REVIEW OF LITERATURE

Male and females have different memories of stereotyped objects by gender. Some researchers have found that women perform better on verbal memory tasks and men on spatial memory tasks. Gender schema theory suggests that gender stereotypes have a significant impact on memory. Females have better abilities than males in object identification and some spatial abilities (Baer et al., 2006).

A research on processing speed disparities between men and women as well as the cognitive variables thought to influence processing speed was done. It was shown that while males are quicker on finger tapping and response time tests, females are faster on processing speed tasks involving digits and alphabets as well as rapid naming activities. Women perform better than men in both reading and writing. Nevertheless, there were no discernible gender differences in general intelligence, verbal or nonverbal fluidity, the more specialized abilities tested by particular subtests of typical IQ tests, short-term memory, or inspection time. It is concluded that gender disparities in processing speed tasks may be significantly impacted by gender differences in reading and writing fluency. It was suggested that females perform better in reading and writing skills due to their engagement in language related activities at school and at home. Male perform better in reaction time and finger tapping tests due to other factors (Baer et al., 2006).

In this study, women were found to be more vulnerable to false information than men. The discovery that the two sexes appeared to be influenced by false information for various reasons was more intriguing. Males who were adept in visual imagery were less susceptible to being duped by false information. Women who accepted information from outside sources and professed to have good memories were more susceptible to being misled. According to this investigation, males may be misled due to a memory distortion, but females may be misled due to response bias issues. Clearly, further research is required to confirm or deny the idea that when males and females are exposed to false information, distinct mechanisms are at play. Studies on overall eyewitness accuracy provide the strongest support for the idea that neither sex has a better memory than the other, but that they do differ in terms of what is remembered. There are numerous studies that included both men and women as subjects in the eyewitness literature. The results have been

ambiguous in terms of who performs better. According to several research, women perform better than men. Males perform better than females, according to other studies. Some still show that men and women are equally accurate (Schweppe, 2006).

Gender differences in cognitive strategies reflect differences in the functional organization of the brain. In general, neuropsychological observations suggest that anterior lesions cause greater disability in women than in men. On the other hand, left-sided vascular lesions or lesions confined to the left temporal lobe have been reported to result in more severe memory impairment in males than females. In the recognition memory task, a key finding was that the ERP elicited by the first presentation of the item (that is, the new item) was higher than that elicited by the second presentation of the same item (that is, the old stimulus) (Schweppe, 2006).

The study's findings show strong evidence for the existence of a general memory component, cognitive measures, and four distinct memory factors on the TOMAL: the complex memory factor, the sequential recall factor, the backwards recall factor, and the spatial memory factor. According to the research, both genders exhibit equivalent levels of the general memory component and four particular memory factors. Just two of the subtests—Word Selective Reminding and Object Recall—showed a statistically significant difference between the mean performance of males and girls. Verbal tasks include word recall and object recall. There is a shared foundation to memory across genders despite variances in the brain structure of cognitive activities by gender (Pauls et al., 2013).

A study conducted on gender differences in recalling memory suggested that neither sex can be said to have a better memory. Instead this depends on their physiological capabilities, their interest, their expectations and other factors. They concluded that some information were well recalled by females and whereas some were well recalled by male (Pauls et al., 2013).

This study used visual stimuli that prevented verbal encoding to examine age-related changes in visual short-term memory. The role of visual short-term memory was studied in Experiment 1 in relation to age and the duration of the stimulus presentation period. In Experiment 2, the impact of age, gender, and the duration of stimulus presentation on visual short-term memory performance was investigated. The settings with the shortest stimulus presentation length showed the weakest memory performance and the greatest performance gap between the age groups. When the stimulus presentation period extended, the performance gap between the age groups shrank but did not eliminate entirely. Regardless of the presentation time in the young group, gender did not significantly affect d', although there was a significant gender-based difference. In the younger group, gender had no discernible impact on d' regardless of the presentation length, while in the older group, a gender-based difference was discernible for stimulus presentation periods of 500ms and 1,000ms. According to this study, a number of factors interact to cause the deterioration in visual short-term memory seen in the older group (Kunimi, 2016).

Working memory in gender differences accounts for variation of writing development. Though less research has been done in this field. Some of its published facts are that younger children, aged between 4-5 years, found that gender differences in writing are not related to their working memory. Cognitive skills in gender differences depend on tasks like reading, mathematics, and writing. It was found that Boys relied more on phonological reading. Thus, it's said that the way these skills support the writing process in gender

differences can be due to the presence of WM skills as well. A study on gender difference in relationship WM in children concluded that boy's individual differences in STM abilities were more significant determinants of their ability to transcribing letters than the girls and the memory abilities supporting writing fluency varied between the sexes while those supporting writing quality did not (Duarte Alonso et al., 2018).

Scope of Study

This study helps in analyzing various problems faced by different individuals of different age groups and sex relating to short term memory. The extent to which these problems can affect individuals in their day-to-day activities reduces their sense of well-being. As lack of memory leads to various types of dementia: Alzheimer disease Vascular dementia Fronto-temporal dementia This study helps in determining various psychological aspects that will have significant effect on different biological sex and the role of memory function.

METHODOLOGY

To study the relationship between memory and gender among different age groups and to determine the range of short-term memory between different genders. Various auditory, visual and semantic demonstrations would be used to analyze and understand the correlation between biological sex and memory.

Objective

To study how individuals of different age groups and gender differ with their memory pattern and to determine the extent of short-term memory by these individuals.

Hypothesis

The hypothesis suggests that there will be a significant difference in memory performance between genders, with females exhibiting better memory recall than males.

Variables

- Attributes: Gender
- Dependent variables: Memory

Sample

Overall, a total of 50 participants were taken for the sample size, among them both male and female belonged to the age group of 17-20 years and male and female of age 21-25 years.

Tools

The data will be collected by conducting a memory test that asses the aspect of memory performance such as short-term memory. Then based on the questionnaire in the form of google forms the analysis is done. The questionnaire will consist of 15 sets of questions. The individual needs to answer all the questions.

DATA ANALYSIS AND DISCUSSION

The data was collected using a questionnaire. The questionnaire consisted of 15 questions and a population of 50 subjects were considered for the study. The questionnaire was analyzed based on age and gender. Where both males and females of the age group of 17-20 years and 21-25 years were considered for the study. The questionnaire was answered by both the age groups of male and female gender. The questionnaire was answered by 50 participants, where out of 50 subjects 24 of them belong to the age group of 17-20 and 26 of them belong to the age group of 21-25. Out of 50 subjects 23 of them were females and 27

of them were males. The data was analyzed by comparing the data of 25 females and 25 males. Then it was compared individually for each question.

1. In question 1, out of 25 females 10 of them recalled the video and answered the question correctly and out of 25 males 11 of them could answer the question correctly.
2. In question 2, out of 25 females 19 of them recalled the video and answered the question correctly and out of 25 males all of them could answer the question correctly which indicates that males could recollect the video in an efficient way when compared with females.
3. In question 3, out of 25 females 20 of them recalled the video and answered the question correctly and out of 25 males 23 of them could answer the question correctly.
4. In question 4, out of 25 females 22 of them recalled the video and answered the question correctly and out of 25 males 12 of them could answer the question correctly.
5. In question 5, out of 25 females 9 of them recalled the video and answered the question correctly and out of 25 males 14 of them could answer the question correctly.
6. In question 6, out of 25 females and males 15 of them from each gender could recollect the video and answer the question correctly.
7. In question 7, out of 25 females 19 of them recalled the video and answered the question correctly and out of 25 males 15 of them could answer the question correctly which shows that the males could recollect the video and answer the questions efficiently when compared to females.
8. In question 8, out of 25 females 16 of them recalled the video and answered the question correctly and out of 25 males 14 of them could answer the question correctly which shows that the males could recollect the video and answer the questions efficiently when compared to females.
9. In question 9, out of 25 females 18 of them recalled the video and answered the question correctly and out of 25 males 16 of them could answer the question correctly.
10. In question 10, out of 25 females 18 of them recalled the video and answered the question correctly and out of 25 males 18 of them could answer the question correctly, which shows that the males could recollect the video and answer the question efficiently when compared to females.
11. In question 11, out of 25 females 19 of them recalled the video and answered the question correctly and out of 25 males 20 of them could answer the question correctly, which shows that the males could recollect the video and answer the question efficiently when compared to females
12. In question 12, out of 25 females 10 of them recalled the video and answered the question correctly and out of 25 males 10 of them could answer the question correctly, which shows that the males could recollect the video and answer the question efficiently as females.
13. In question 13, out of 25 females 11 of them recalled the video and answered the question correctly and out of 25 males 6 of them could answer the question correctly.
14. In question 14, out of 25 females 17 of them recalled the video and answered the question correctly and out of 25 males 18 of them could answer the question correctly, which shows that the males could recollect the video and answer the question efficiently when compared to females.

15. In question 15, out of 25 females 17 of them recalled the video and answered the question correctly and out of 25 males 17 of them could answer the question correctly, which shows that the males could recollect the video and answer the question efficiently as females.

There are numerous factors like stress, depression, mental fatigue and various psychological elements which can have a vital impact on an individuals' memory with relation to their age, The following analysis revealed that both males and females do not differ significantly in recalling a particular instance which they observed in a short time duration, the factors leading to this could be due to equal exposure of males and females in the society, standard of education attained, better mental health and healthier environment in familial space and academic setup as well.

Limitations

The analysis that has been performed is fully based on the questionnaire that was prepared and there might be more than these questions which can play a pivotal role in understanding the correlation between memory and gender and its view. The study has responses only from the age group ranging from 17-25 as a result the opinion of this cannot be generalized on how well both the genders recall and how the recalling memory is being affected.

CONCLUSION

The general opinion on correlation between memory and gender plays a vital role in surviving through the environment. This study helped in understanding how different genders' has different ranges of recalling capacity and how one gender recalls different circumstances better than the other based on one genders' common interest towards a particular subject. It was found that similar age groups shared a similar level of recalling capacity. It can be seen that a particular gender did pay more attention as male individuals could recall the initial part of the video with more precision than female individuals whereas the female individuals could recall the later part of the video in a much better manner than male individuals. The opinion and the response similarities were greatly dependent on questions asked and it was also found that subjects which interests more to a particular gender could be recalled with greater precision and the individuals tend to have similar responses. The findings of the study indicated that,

- Males individuals tend to recall the initial part of the video whereas females tend to recall the later part of the video however the precision of recalling was dependent on individuals interest.
- It was found out that individuals of similar age groups could recall a particular subject of their interest with similar precision.

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Conflict of Interest

The author(s) declared no conflict of interest.

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