False memory formation during Covid-19 quarantine: age, sleep quality and emotional variables. Preliminary results.

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INTRODUCTION

False memories are memories of events that did not happen or are altered in their content. It has been shown that not only small distortions can be introduced into old memories but also entire memories of events that never occurred can be implanted[1]. Age is a crucial factor in the formation of false memories[2]. Currently there is no consensus on which age range is more vulnerable[3]. Since the COVID-19 pandemic, anxiety and depression values are increased and these factors also influence the formation of false memories[4,5,6]. Thus, our aim was to study how age and mood factors, such as anxiety and depression, influence the formation of false memories.

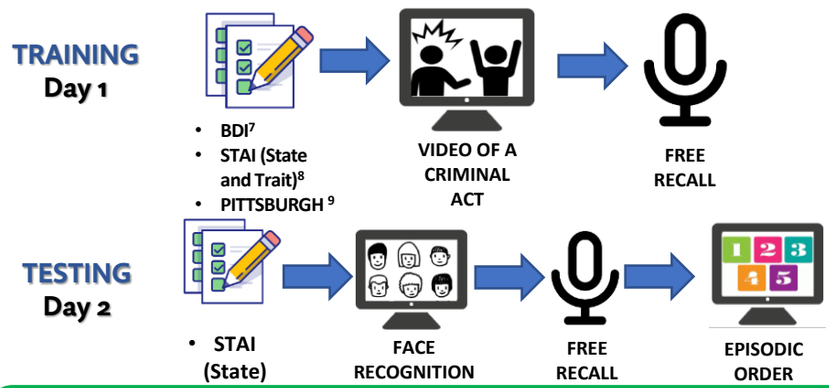
METHODS

Online Experiment Protocol

N=85 (x Males, x Females)
The entire experiment was done using the Google Meet videocall Platform. The video was shown trough a streaming tool.
3 different age ranges were used:

14-20 years n=30 | **30-40 years n=30** | **65-80 years n=25**

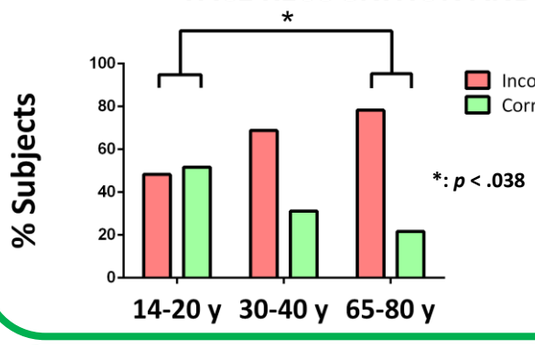
Older adults were tested with a brief neurocognitive screening, including The Signoret Mnesic efficiency battery (BEM 144)[10] and Digits subtest (WAIS IV)[11]



Dependent Variable: Recognition. Recognition can take two values: Good Recognition (1) or Wrong or No Recognition (0).
Independent Variables: Sleep (good sleepers, bad sleepers), state and trait anxiety (low anxiety, high anxiety) and depression (low depression, high depression).

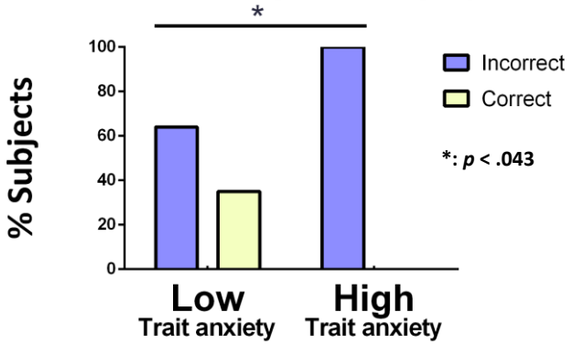
RESULTS

FACE RECOGNITION AND AGE



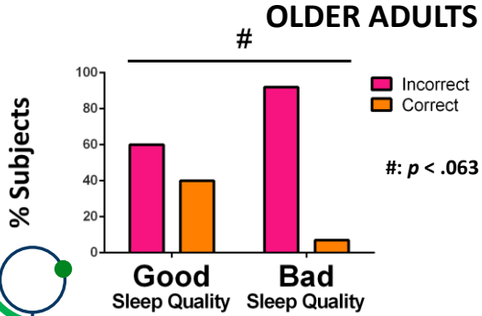
Older Adults had worse face recognition than adolescents.

FACE RECOGNITION AND TRAIT ANXIETY IN OLDER ADULTS



Older adults with higher anxiety trait showed a worse performance than those with lower values.

FACE RECOGNITION AND SLEEP QUALITY IN OLDER ADULTS



Older adults with bad sleep quality had a worse performance than those with good sleep quality.

Further statistical analysis will be done regarding the details of true and false episodic memory content.

DISSCUSION

These results showed that age is a crucial factor in the formation of false memories, older adults presenting worse recognition than adolescents. Moreover, older adults with higher anxiety levels showed worse recognition than the group with lower anxiety levels. It is important to highlight that the overall results showed that all age ranges had a low recognition rate (less than 50%). This could be due to the increase in the mood variables such as anxiety and depression in the population during the quarantine by Covid-19[6]. We have recently observed that these variables impaired codification of aversive episodic memories[12]. Thus, the current situation could be affecting the codification of the story of the crime presented here, as well as the encoding of the perpetrator face.

Taking into account previous results in USA that showed that almost 70% of wrongful convictions were by mistaken eyewitness identifications, some questions arises. How useful these procedures are? Can we trust their results knowing that eyewitness memories can be compromised by the high levels of anxiety produced by the aversive event? Knowing that the COVID-19 increased all type of negative mood factors values and by that could increase the amount of false memories, how can we rely the faith of someone on so faulty procedures?

It is important to remember that the perpetrator was present in the face recognition round and that recognition was held 24 hours after encoding the aversive event. Thus, this preliminary study showed the importance of being cautious when using procedures that are so influenced by the contextual situation.

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