

## Introduction

- Oral hormonal contraceptives (OC), otherwise known as the “pill”, provide an effective option for contraception and safe long term family planning as well as managing cycle related physiological symptoms. The pill, when contains progestin only or both estrogen and progestin made it possible for American women to separate sexuality and childbearing.<sup>3</sup> Estrogen and progesterone are hormones that are essential for sexual and reproductive development in women and help regulate a woman’s menstrual cycle.
- Previous research shows that hormones can affect mood and cognition, and the menstrual cycle can also be linked to cognition and mood.<sup>1</sup> Around 82% of women between the ages of 15 and 44 years in the United States take OC’s in their lifetime and oftentimes report emotional side effects.<sup>2</sup>
- Autobiographical memory: the memory of one’s personal history and previous research has shown that emotion is an important cue for recalling an autobiographical memory. Given these findings, it is imperative to discover and understand the effects of OCs on autobiographical recall.
- Measuring ease of recall while considering OC and NC conditions can shed light on how sex hormones may affect memory cognition, which in turn can help future researchers explore these effects in other important executive function areas like decision making or attention.

## Hypotheses

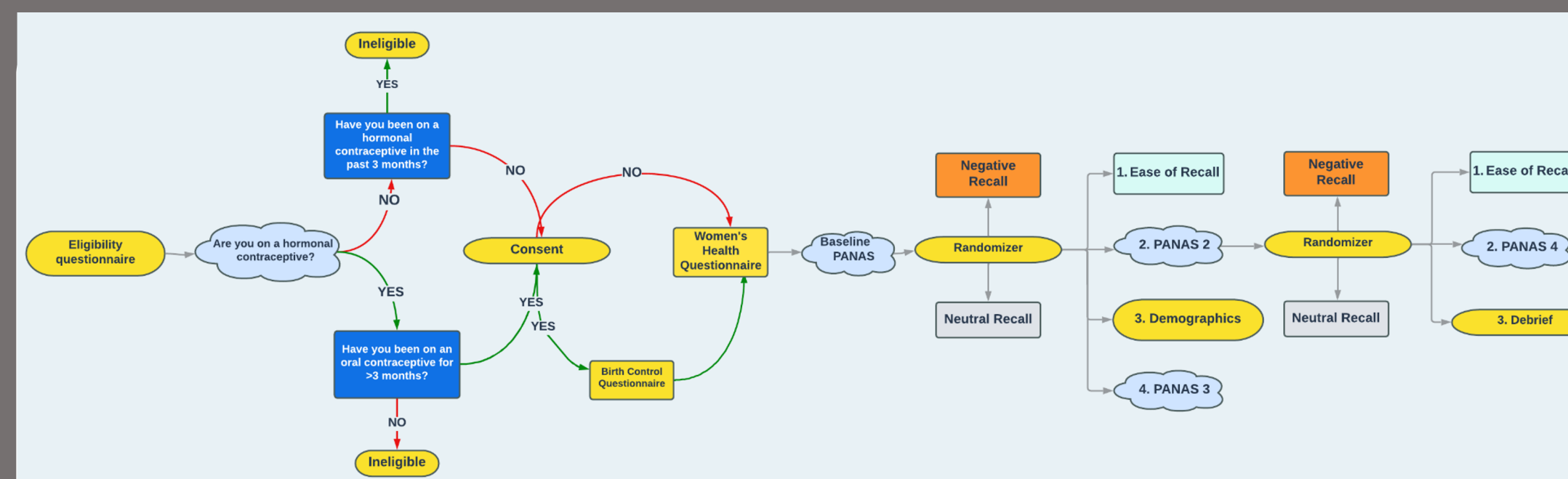
- H1:** Those who are NC and are recalling a stressful personal event will have the highest rating of ease compared to any other condition.
- H2:** Regardless of emotional condition, it is predicted that NC women will have an easier time generating a recalled event compared to those on OC.
- H3:** Regardless of OC status, those who recall a negative event will rate the generation as easier to come up with compared to a neutral event.
- H4:** The most difficult recall will be from the OC group having to recall a neutral event.

## Method

**Participants:** 100 female and non-binary undergraduate students from UCSB (ages 18-25;  $M = 19.3$ ,  $SD = 1.16$ ).

- Inclusion Criteria:** Participants must have been on an oral hormonal contraceptive for at least 3 months or must have been naturally cycling.
- Exclusion criteria:** included anyone that was on sex hormone treatments, pregnant, had endometriosis, menorrhagia, polycystic ovarian syndrome, suffered from a traumatic brain injury, had Attention Deficit Disorder (ADD) or Autism Spectrum Disorder (ASD).
- Positive and Negative Affect Schedule (PANAS)** to evaluate current state emotions using a 5-point scale where 1= “very slightly or not at all” and 5= “extremely”.
- Ease of Recall Scale** assessing how easy it was to recall the event on a scale of 1-6, where 1= “very difficult” and 6 = “very easy.”

## Method (cont.)



You can recall the event in any order that comes to mind and you may report details even if you are not sure about them (guessing is okay but please mention that you are unsure). Please be as detailed as possible by describing the who, what, where, and when.

### Negative Event

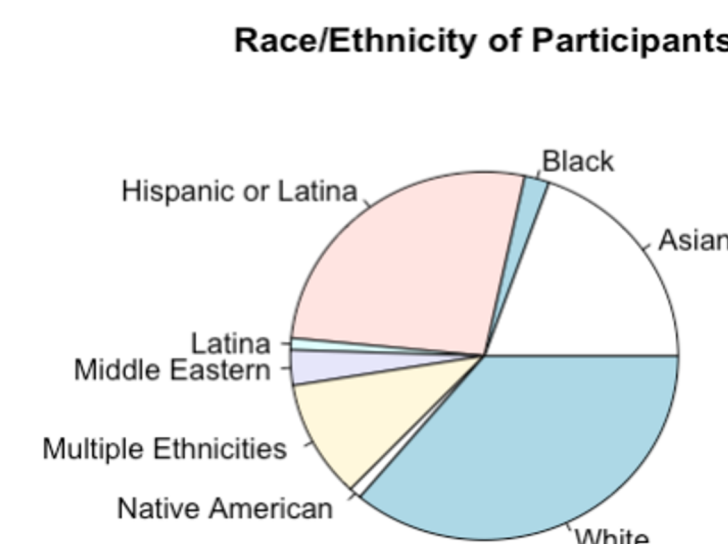
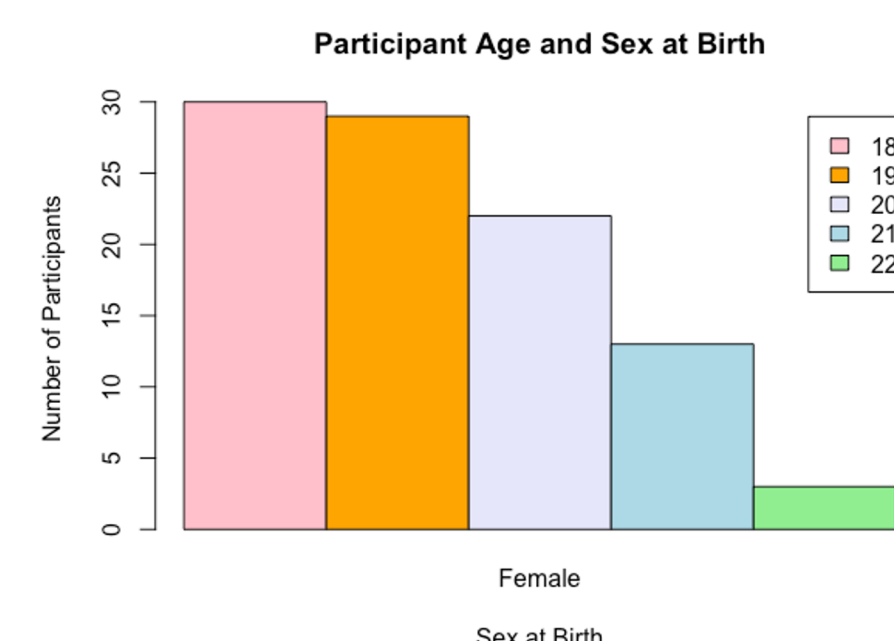
Please take at least 2 minutes to recall a specific moment in time when you felt the most stressed during finals week last quarter (Fall 2021).

### Neutral Event

Please take at least 2 minutes to recall a specific time when you had a meal during finals week last quarter (Fall 2021).

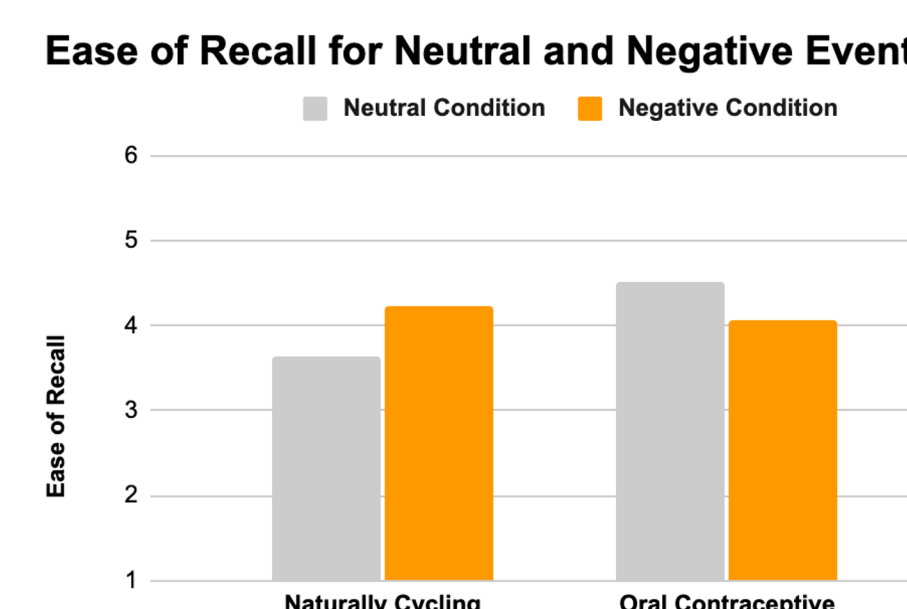
## Results

- Overall, those that were on OC and were recalling a neutral personal event had the highest rating of ease, contrary to our hypothesis.
- The negative condition was easier to recall than the neutral condition for OC. The neutral condition was easier to recall than the negative condition for those on OC. However, there was no statistically significant difference between the values, so we fail to reject the null hypothesis.
- There was no significant difference between the baseline PANAS to the PANAS after the negative and neutral condition.

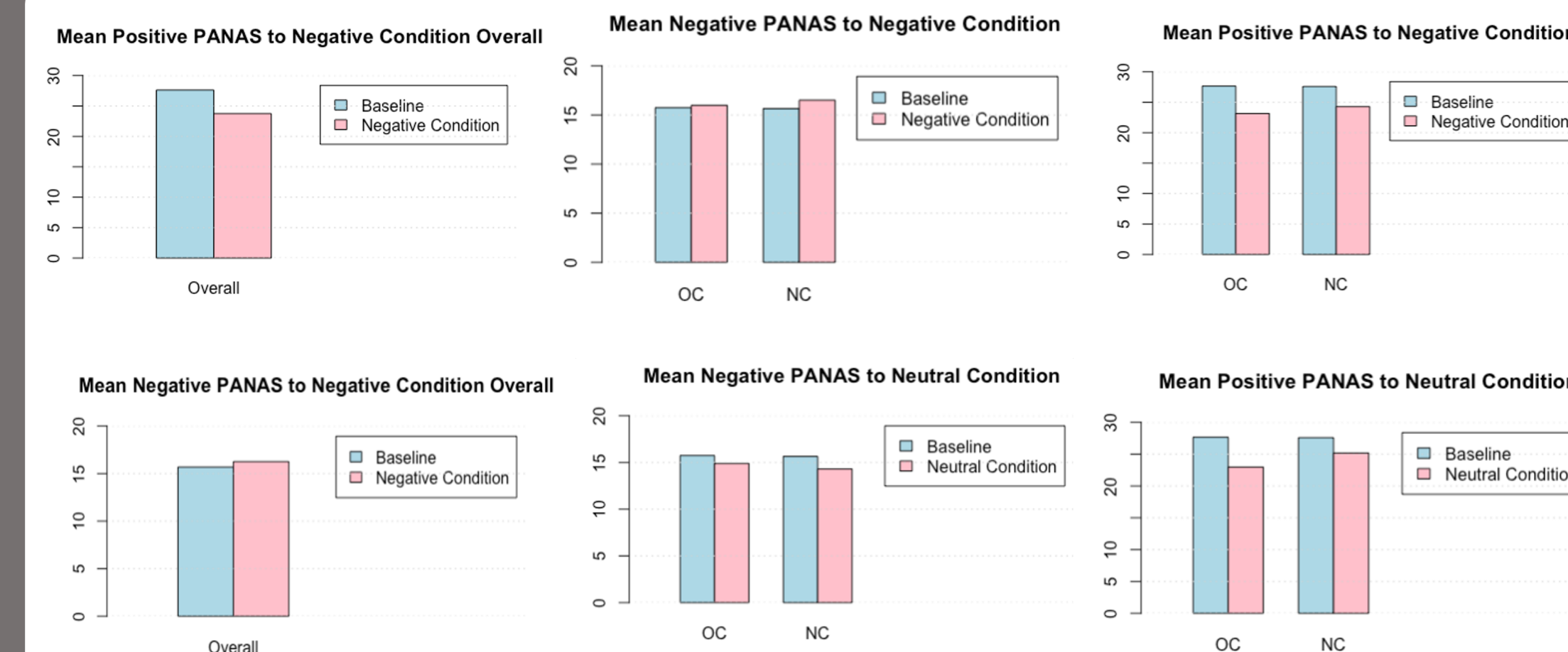


	Neutral Condition	Negative Condition
Naturally Cycling	3.64	4.23
Oral Contraceptive	4.52	4.06

Figure 1: Ease of Recall for Neutral and Negative Condition for NC and OC users



## Results (cont.)



## Discussion

- The results of this study do not indicate a significant difference in the ease of recall of an emotional autobiographical memory when comparing women on a hormonal contraceptive and NC women. Regardless of OC status, the neutral condition was more difficult to recall and overall, the easiest condition to recall were the OC users in the neutral condition.
- In the future, the negative condition should be modified to be more stressful, such as incorporating a stressful stimuli to see an overall increase in the negative affect for PANAS after baseline. Furthermore, there should be a larger sample size to make further conclusions.

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## References

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