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**The Effects of Hormonal Contraceptive Use on Perceptions of Social Stress in
Women**

An Honors Thesis submitted in partial fulfillment of the requirements for Honors Studies
in Biology

By

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Spring 2022

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Abstract

Hormonal contraceptives are widely used due to their efficiency in preventing pregnancy. Although women are often informed of physical effects of hormonal contraceptives, there is little emphasis on mental effects, such as increased rates of depression and changes in social perception. The current study examined perceptions of social stress among women before beginning hormonal contraceptives, and two months after using hormonal contraceptives. I hypothesized that women would experience increased social stress after beginning hormonal contraceptives, compared to a control group of women who were also assessed twice. Results did not support this hypothesis; there was no difference in interpersonal stress scores between Time 1 and Time 2 in either group of women. Notably, the sample size was very small and further research is needed to examine the mental effects of hormonal contraceptives to help women become better informed about their reproductive decisions.

The Effects of Hormonal Contraceptive Use on Perceptions of Social Stress in Women

Hormonal contraceptives give women control over their cycles and fertility by influencing hormone levels to prevent ovulation and pregnancy. There are multiple forms of hormonal contraceptives, such as the pill, implant, intrauterine device, shot, vaginal ring, and the patch, which range from 91-99% effective in preventing pregnancy (Parenthood, 2021). Hormonal contraceptives work through various mechanisms by releasing synthetic forms of progesterone or estrogen. These synthetic hormones work to suppress fertility by inhibiting ovaries from releasing eggs, thickening cervical mucus, or thinning the lining of the uterus (Contraception, 2017).

The use of hormonal contraceptives continues to increase due to their efficiency in pregnancy prevention and many other secondary benefits, such as reducing symptoms of premenstrual syndrome. However, it is important to recognize the adverse psychological and physiological effects of hormonal contraceptives as well. The possible mental health effects of hormonal contraceptives are rarely talked about, although past research indicates that hormonal contraceptive use can affect mood and stress (Lewis et al., 2019). Likewise, additional research indicates that hormonal contraceptives may also impact other realms of social perception (Klaus & Cortés, 2015). With that being said, there continues to be an evident lack in research concerning this topic. Because ongoing or unaddressed stress can have numerous physical and mental consequences (Yaribeygi et al., 2017), it is important to examine how hormonal contraceptive use can affect perceptions of stress, specifically social stress. The current research examined changes in perceptions of social stress among women after starting hormonal contraceptive use.

Oral Contraceptives

Within the different forms of hormonal contraceptives, the birth control pill is the contraceptive most commonly used among women. Oral contraceptives either contain only progestin (a synthetic hormone mimicking progesterone) or a combination of estrogen and progestin. Combined oral contraceptive dosages typically range from 15µg (low-dose) to 50µg (high-dose) of estrogen and 0.15µg to 3µg of progestin (International Agency for Research on Cancer, 2012). Combined oral contraceptives work by releasing estrogen and progestin to inhibit the release of follicle stimulating hormone and luteinizing hormone (LH) throughout a cycle. The negative feedback from progestin and the lack of positive feedback from estrogen inhibit the surge in LH that typically occurs for naturally cycling women (Rivera et al., 1999). As a result, there is no follicle release, and no ovulation occurs. The hormone releasing intrauterine device (IUD) is another form of hormonal contraceptives that is gaining popularity among women due to its efficiency and practicality. In contrast to oral contraceptives, the IUD is inserted into the uterus and can remain there for up to 3-6 years. The IUD works by releasing progestin overtime which suppresses ovulation and prevents pregnancy at a high level of efficiency (Rivera et al., 1999). The typical dosage of levonorgestrel (one type of progestin) released from IUDs overtime ranges from 19.5mg- 52mg (Michigan Medicine, 2019). Although each hormonal contraceptive acts through a variety of mechanisms, each is efficient in inhibiting pregnancy through the use of synthetic hormones that result in significant changes to the hormone balance of a typical menstrual cycle.

The use of hormonal contraceptives has become widely accepted and encouraged among American culture due to the many benefits hormonal contraceptives provide. Not

only are hormonal contraceptives a highly reliable method of preventing pregnancy, but they also provide many other secondary benefits to women. Some of these benefits include reduced symptoms of dysmenorrhea, endometriosis, and premenstrual syndrome (Hogue et al., 2011). Additionally, studies show that adolescents and young adults tend to begin hormonal contraceptives to lessen acne, menstrual pain, and menstrual bleeding that occurs in naturally cycling women (Davtyan, 2000). Overall, women typically begin hormonal contraceptives due to its efficiency in preventing pregnancy and decreasing effects of menstrual symptoms.

These benefits of hormonal contraceptives are well promoted throughout society, yet the negative side effects and limitations are often downplayed. Women are usually well informed on the physical side effects of hormonal contraceptives through pamphlets, websites, and health physicians. Some physical side effects that vary across different forms include weight gain, headaches, sore breasts, irregular periods, acne, and nausea (Contraception, 2017). Although women are made well aware of the physical side effects that may occur, mental health effects are rarely talked about. For example, pamphlets for various forms of hormonal contraceptives, such as the Mirena IUD, go into extensive depth on the physical effects and risks, but not one mental health effect is mentioned (Mirena, 2020). This is counter to empirical evidence documenting such effects (Skovlund et al., 2016).

This lack of information is unacceptable given the evidence demonstrating links between hormonal contraceptive use and mental health effects. Indeed, women who have used hormonal contraceptives in the past report that one of the most common reasons they discontinued use was because they perceived changes in their moods (e.g., Westhoff

et al., 2007). For instance, one study compared fourteen combined oral contraceptive users and fourteen naturally cycling women over a period of one treatment cycle (i.e., 1 pill per day for 21 days) (Klaus & Cortés, 2015). Throughout the trial, oral contraceptive users had higher daily symptom ratings of depressed mood, mood swings, and fatigue than did naturally cycling women. With evidence demonstrating shifts in overall mood, there should be no surprise that there is an increased risk of mental effects when using hormonal contraceptives. (Hertel et al., 2017). Additionally, a study conducted by Skovlund and colleagues (2016) in Denmark, analyzed the link between hormonal contraceptive use and depression specifically. Results showed that all forms of hormonal contraceptives positively correlated with diagnosis of depression and prescription of antidepressants within the first 2-4 months of use. These results can be attributed to the physiological effect of hormonal contraceptives given the addition of external progestin can negatively affect mood by increasing levels of monoamine oxidase, which subsequently decreases levels of serotonin (Skovlund et al., 2016). Depression is a clinical diagnosis, but women might likewise be having difficulties dealing with daily stress. Given the effects that hormonal contraceptives can have on mood, there is evidence that suggests hormonal contraceptives could also lead to increased feelings of stress among women.

When discussing stress, it is important to recognize the variability and inevitability of stressful experiences among people. Stress is a normal part of life and is, realistically, unavoidable. Stress can be triggered by an endless number of environmental factors and is felt by our bodies both physically and mentally. Stressors can be defined as real or perceived challenges in an environment and the body's reaction to those

challenges (Allen et al., 2014). Stressors can be acute, sequential, episodic, chronic, or anticipated and each individual reacts and deals with these feelings in a variety of ways. Physiologically, stress can be recognized in the response of the hypothalamic-pituitary-adrenal axis (HPA axis). Stress triggers a release of adrenocorticotrophic hormone (ACTH) from the pituitary gland which then activates secretion of cortisol from the adrenal gland. This biological mechanism can indicate stress levels through measurements of cortisol and ACTH levels (Allen et al., 2014).

Understanding how people can cope with stress is crucial for helping people maintain better overall physical and mental health. Ongoing or unaddressed stress can manifest into a variety of more serious health problems and risks. Physical health problems that can develop include high blood pressure, heart disease, obesity, and diabetes (Yaribeygi et al., 2017). People are more likely to experience fluctuations in mood or become withdrawn when dealing with stress, which gives rise to mental disorders such as depression or anxiety.

One of the most common forms of stress is social stress, which is usually perceived as more intense or critical among individuals feeling it, when compared to other forms of stress such as, physical or spiritual stress (Wood & Bhatnagar, 2015). Social stress is a result of strain in relationships with others or any social environment. Adolescent girls and young women reported more intense and higher feelings of social stress when compared to boys and young men (Wood & Bhatnagar, 2015). Social stress among adolescents and young adults could be a result of stress within school, home life, or friend groups (Wood & Bhatnagar, 2015). Social stress is apparent in everyday life and could be affected by changes in environment, social situations, or even hormones.

Therefore, it is crucial that factors that could possibly contribute to increased social stress are analyzed, given the inherent inevitability of it among women and the significant consequences that ongoing stress can have on one's physical and mental health.

There is some evidence that demonstrates hormonal contraceptive use has an effect on the body's physiological stress response. Studies show that women using oral contraceptives experience an increase in cortisol levels (Burke, 1969). An increase in cortisol levels subsequently leads to an increase in stress response, resulting in an increased heart rate and blood pressure. Likewise, another study conducted by Lewis and colleagues (2019), found that women taking oral contraceptives had a higher baseline salivary cortisol level when compared to naturally cycling women. This study found further evidence that oral contraceptives users presented a blunted cortisol response due to altered HPA axis regulation. This increase in cortisol response and blunted cortisol regulation could lead to an increased perception of social stress and mood disorders like depression (Lewis et al., 2019).

Evidence from other realms of social perception is suggestive of an association between hormonal contraceptive use and increased perception of social stress. One study found that oral contraceptives impact partner choices and subsequent relationship satisfaction, health of offspring, and long-term perception of their partner (Roberts et al., 2008). This study was conducted by comparing naturally cycling women and oral contraceptive users' mate preference based on major histocompatibility complexes (MHC genes). It was concluded that naturally cycling women preferred the odor of men that had complementary MHC genes to avoid inbreeding. In contrast, women using oral contraceptives preferred men whose MHC gene was more similar to their own, which can

lead to decreased relationship satisfaction and altered perception of one's partner (Roberts et al., 2008). Similarly, an additional study tested the hypothesis that inconsistent use of hormonal contraceptives (i.e., starting or stopping hormonal contraceptive use during different times within a long-term relationship) could affect women's relationships based on evidence that hormonal contraceptives altered sex hormones and certain brain processes linked to relationships. Results of this study found that inconsistent use of hormonal contraceptives correlates to decreased sexual satisfaction, lowering overall relationship satisfaction among hormonal contraceptive users (French & Meltzer, 2020). The results of this study imply that hormonal contraceptive users might perceive relationships differently than non-users, which could also affect how women perceive social stress in relationships. Based on previous research and the effect on other realms of social perception, it can be hypothesized that hormonal contraceptives and shifting hormones profiles could also affect women's perceptions of social stress.

Current Research

Women are often well informed of the physical effects of hormonal contraceptives, but there is little, if any, emphasis on the mental effects. However, hormonal contraceptives have been linked to increased rates of depression and changes in social perception among women. Based on the literature, I hypothesized that changes in hormones due to hormonal contraceptives could also have an effect on perception of social stress. The objective of this research was to focus on social stress and compare women's perceptions of social stress prior to and two months after beginning hormonal contraceptives. Women were reevaluated within this time range based on a study done in

Denmark that found women were at greatest risk for diagnosis of depression and use of antidepressants after 2-3 months of hormonal contraceptive use (Skovlund et al., 2016). Based on this study and previous literature, I hypothesized that women who begin using hormonal contraceptives will exhibit an increase in social stress after two months of hormonal contraceptive use. Social stress levels were compared before, and two months after women began using an IUD, combined oral contraceptives (i.e., the pill), or no hormonal contraceptives.

Method

Participants

Women who were at least 18 years old and were about to begin using hormonal contraceptives (IUD or pill) or were naturally cycling were invited to participate in the research study. It is important to note that women could not participate in the study if they were in the processes of switching forms of contraceptives. Women were recruited primarily when scheduling an appointment to begin oral contraceptives or IUD insertion through the Pat Walker Health Center. Participants were given information about the study at their visit to the Pat Walker Health Center. Women who were about to begin using hormonal contraceptives (pill or IUD) were compared to a control group of naturally cycling women for the study who were also assessed twice, two months apart, to strengthen internal validity of the study. Naturally cycling participants were recruited from a previous study in which women indicated their contraceptive use and that they wanted to be recruited for future research.

Seventeen women ($M_{age} = 22.12$, $SD = 5.87$, age-range 18-37 years) were recruited to participate in the study, however, at this time only fourteen women successfully

completed both parts of the study (Oral Contraceptive Group: 7, Naturally Cycling Group: 6, IUD Group: 1). The final sample used in statistical analyses included six naturally cycling women and seven oral contraceptive users. The participant within the IUD group was omitted from statistical analysis due to an inadequate sample size. Participants rated their views on politics ($M_{politics} = 4.65$, $SD = 2.37$) and religion ($M_{religion} = 5.12$, $SD = 3.12$) on a scale of 1-10, with 1 being very liberal and not religious at all, and 10 being very conservative and very religious. These results indicated that most participants scored near the midpoint of the scale for both political and religious views. Participants reported their race as American Indian/Alaskan Native (5.9%), Black or African American (11.8%), White/Caucasian/European American (76.5%), or more than one race (5.9%). Participants also self-reported their sexuality as only heterosexual (58.8%), mostly heterosexual (23.5%), bisexual (5.9%), only lesbian/gay (5.9%), and asexual (5.9%). The sample was fairly evenly split on relationship status, 47.1% of participants indicated being in a relationship and 52.9% indicated being single. Most participants reported being undergraduate students (17.6% indicated not being in college).

Procedure

Participants first completed an interest form to determine their eligibility in the study. The interest form assessed their age, current hormonal contraceptive use (if any), type of hormonal contraceptive they plan to begin, and the date they plan to begin their hormonal contraceptive plan. Eligible participants were emailed the link for completion of an informed consent form and the first survey, assessing social stress levels before beginning hormonal contraceptives. Women completed the first survey no earlier than a

week prior to the date they indicated to begin their hormonal contraceptive plan. Following completion of the first survey, participants completed an identical second survey two months after beginning hormonal contraceptives. To insure accuracy and consistency throughout the study, naturally cycling women also completed the survey twice, two months apart. All participants received a \$20 Amazon gift card for completing the first survey and a \$25 Amazon gift card for completing the second survey. We chose to pay slightly more for the second survey in order to maintain engagement and minimize attrition. At the end of both surveys, participants were debriefed.

Materials

Participants' level of stress at each time point was measured using an interpersonal stress scale that I created to assess perceptions of social stress. The questionnaire was modeled based on the perceived stress test scale that assesses the degree to which life situations are appraised as stressful, unpredictable, uncontrollable, and overloading over the previous month (Nagma et al., 2015). The questions were altered to relate specifically to social stress within a time range that required participants to recall how often they have experienced social stress within the last week on a scale of 1-7 (1 being never and 7 being very often). Participants responded to the following 12 items for Surveys 1 and 2: "In the last week, how often have you felt insecure or anxious in a social environment?"; "In the last week, how often have you felt worried about the status of your relationship with someone in your life (i.e., friend, family member, significant other being upset/angry with you)?"; "In the last week, how often have you felt worried about not fitting in or being isolated from a certain group of people?"; "In the last week, how often have you felt worried about what someone else might think of

you?"; "In the last week, how often have you attempted to escape/avoid a potentially uncomfortable or stressful social situation?"; "In the last week, how often have you felt worried about not being able to complete tasks on time (i.e., academic assignments, work tasks, extracurricular tasks)?"; "In the last week, how often have you felt extremely worried about a grade you received in a class?"; "In the last week, how often have you felt inadequate in your abilities to succeed academically?"; "In the last week, how often have you felt like you could not meet the expectations other people have for you (i.e., teachers, family members, friends, significant other)?"; "In the last week, how often have you felt pressured by someone or a group of people?"; "In the last week, how often have you felt your obligations were piling up so high that you could not overcome/complete them?"; "How often have you sought for distraction or excitement as a way of reducing feelings of stress (i.e., engaging in risky behaviors)?" To analyze participants' responses to the questionnaire, the average score across all 12 items was calculated. Cronbach's Alpha indicated that the interpersonal stress scale had good internal consistency ($\alpha = .86$ to .90).

Hormonal contraceptive users also answered questions in Survey 2 relating to side effects they have experienced since beginning hormonal contraceptives to assess overall satisfaction and attitude after two months of their hormonal contraceptive plan. The side effects analyzed included: acne, unwanted body hair growth, head hair breaking or shedding, spotting/bleeding between periods, mood swings, nausea, headaches, and pain/discomfort during sex. Participants rated the degree to which certain things got better or worse after beginning hormonal contraceptives on a scale from -3 (has gotten much worse) to +3 (has gotten much better). Participants also self-reported other side

effects such as whether or not they experienced weight gain, have been diagnosed with any new mental health conditions, or if they have considered seeing a mental health physician to discuss changes in mental health or mood.

Results

I used a 2 (within-woman: Time 1 and Time 2) x 2 (between-woman: Naturally Cycling and Oral Contraceptive Users) mixed ANOVA to test the within group hypothesis that women who begin using hormonal contraceptives would experience an increased level of social stress between Time 1 (before starting a hormonal contraceptive plan) and Time 2 (two months after hormonal contraceptive use) compared to naturally cycling women. Results indicated that the prediction was not supported. There was not a significant difference in interpersonal stress scores between Time 1 and Time 2, $F(1, 11) < 0.001$, $p = 0.983$. Furthermore, the difference between Time 1 and Time 2 was not different between the two groups of women (Naturally Cycling vs. Oral Contraceptive Users), $F(1, 11) = 0.25$, $p = 0.624$.

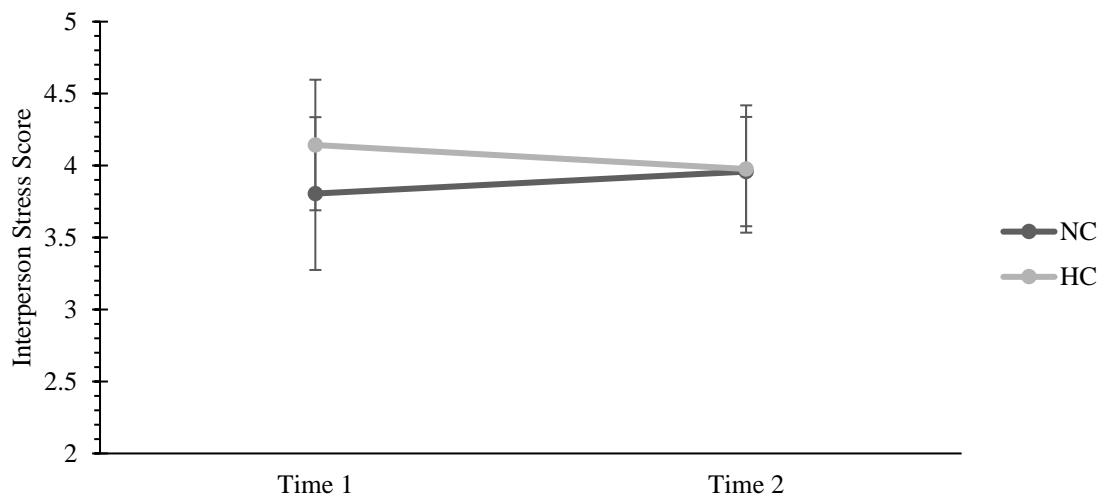


Figure 1. Interpersonal Stress Scores of Hormonal Contraceptive Group (HC) and Naturally Cycling Group (NC) between Time 1 and Time 2.

In further analyses, I examined whether women experienced any of the common symptoms of hormonal contraceptives such as acne, spotting or bleeding between periods, nausea, mood swings, and pain or discomfort during sexual activity. Although not statistically significant, there was a trend for women who started hormonal contraceptives to report having worse mood swings after using hormonal contraceptives for two months ($M = 4.75$, $SD = 1.28$). I used a one-sample t -test to compare the mean for change in mood swings to the scale midpoint (4) which represented no change; the test showed a non-significant trend, $t(7) = 1.67$, $p = .142$. There were no trends for the other side effects, p 's $> .227$. Fifty percent of the hormonal contraceptive users also reported wanting to go see a mental health practitioner, indicating possible increases in anxiety and depression. Participants that answered yes to this question had the option to elaborate on how they have been feeling and some of their responses included: "stress," "I have been feeling depressed and anxious, but I do not associate these emotions with my birth control," and "I want to see a therapist because I feel like a lot of what I used to be afraid of is being amplified in my head." These personal descriptions even more so exemplify the significance of this data to the mental well-being of the large population of hormonal contraceptive users.

Discussion

The goal of this study was to address the critical gap of knowledge within the women's health field regarding the possible mental health effects of hormonal contraceptives, specifically women's perceptions of social stress. This research study used a within-subject design to examine whether women experienced increases in social stress after beginning hormonal contraceptive use. Women who began using hormonal

contraceptives completed the survey before beginning hormonal contraceptives and two months after using hormonal contraceptives; in the present sample all women began using oral contraceptives. A control group of naturally cycling women also completed the survey twice, two months apart. Based on past literature, I predicted that women who began using hormonal contraceptives would experience an increase in social stress after two months of use. Consistently, I hypothesized that this increase among hormonal contraceptive users would be significantly greater in comparison to the control group of naturally cycling women whose social stress would remain relatively constant over two months. Results failed to support this hypothesis. There was no significant increase in social stress among hormonal contraceptive users or naturally cycling women. I did find that 50% of hormonal contraceptive users reported interest in seeing a mental health professional, but I did not assess these feelings in both Time 1 and 2 or between groups of NC and HC women.

Past research has found some evidence that suggests beginning use of oral contraceptives may affect perceptions of social realms, but little research has examined the effect of social stress specifically and it remains relatively unclear to both public and scientific knowledge. With that being said, previous studies have found evidence that changes in overall mood is a significant reason for women discontinuing hormonal contraceptives (Westhoff et al., 2007). Additionally, past research has also found evidence that hormonal contraceptive users experience an increase in cortisol levels and subsequent blunted cortisol response, increasing risk of mood disorders such as depression or anxiety (Lewis et al., 2019). This evidence gave rise to the prediction that women using hormonal contraceptives will experience an increased level of social stress

after beginning hormonal contraceptives. Although past studies have shown evidence of social perceptions and mental health being affected after hormonal contraceptive use, a significant increase in social stress among hormonal contraceptive users was not detected. Results indicated that hormonal contraceptives do not have a negative effect on social stress after two months of use. These results may differ from previous research due to the small number of participants that completed the study during the time of research. Additionally, women that began using an IUD were not analyzed due to lack of participants and data could not be compared to previous research.

Study limitations can be partially attributed to the small pool of eligible participants that successfully completed both parts of the study. Hormonal contraceptive participants were primarily recruited through the Pat Walker Health Center at the University of Arkansas which led to a much smaller number of eligible women made aware of the study than anticipated. Only one participant who began using an IUD completed both parts of the study. As a result, the IUD group was omitted from statistical analysis due to inadequate participant pool. The lack of participants within each group made it difficult to complete statistical analysis on all groups and collect significant data. Future studies should aim to recruit a larger number of participants by expanding recruitment strategies to several resources to increase the statistical significance of the data. This could also increase the external validity of the study by expanding participant reach to a broader scope of women, rather than primarily college students. Lastly, increased participant number could give rise to future experiments being able to further categorize oral contraceptive users based on the specific pill formulations (e.g., which of the four generations of progestins are used, dosage of hormones) rather than considering

all oral contraceptive users as one only group. For example, each generation of progestins has different structural properties such as pregnanes, estranes, or gonanes which are derived from either testosterone or progesterone further exhibiting inherent differences that could be analyzed (Edwards & Can, 2022). These differences may matter for how hormonal contraceptives affect women's perceived social stress.

Additional limitations included the relatively low control in the timing that participants completed Survey 2. Although each participant received the survey exactly two months from the date they began their hormonal contraceptive plan, not all participants completed the survey within a timely manner of receiving the survey link. It is important that future studies aim to increase control of timing between Survey 1 and 2. Participant response time could be improved by offering a bonus incentive if the survey is completed within a certain time frame or by providing reminders prior to the date they are scheduled to complete survey 2. Future studies could also explore variations in approaches of testing such as administering more than two surveys overtime to control for threats to internal validity.

Further limitations could be attributed to lack of control in which phase of the menstrual cycle naturally cycling participants were in when they completed each survey. Past research suggests that emotional processing and social perceptions such as facial recognition vary among each phase of the menstrual cycle (Sundström & Gingnell, 2014). Therefore, future studies should control the timing that naturally cycling women complete each survey based on their indicated menstrual cycle schedule. Specifically, all naturally cycling participants should complete both surveys within the same menstrual cycle phase to decrease variability among the control group.

Lastly, the study may also be limited due to the possibility that the questionnaire used was not the most effective test in analyzing perceptions of social stress. Given the variability in how each person perceives stress, the questionnaire could have failed to capture this large scope among individuals. Additionally, the time at which each participant completed the questionnaire could have also been subjected to individual differences based on current life circumstances. Future studies could control for these differences by administering a test that mimics a socially stressful situation followed by a questionnaire analyzing their perceptions of the simulation. The questionnaire also focused on participant's perceptions of social stress, specifically how frequent they felt it within the last week, which could have minimized the degree to which each participant related to the questions. Future studies could expand the time range that is specified in the questions to more than one.

This study aimed to analyze the effect of hormonal contraceptive use on perceptions of social stress in women. Past research provides evidence that hormonal contraceptives can lead to psychological effects, but perceptions of social stress among hormonal contraceptive users have not been thoroughly explored until now. Results indicated that hormonal contraceptives do not have a significant effect on perceptions of social stress. But, interesting findings were still discovered within the participants' reports of wanting to see a mental health professional and indicating feeling anxious or depressed. These self-reports exhibit the significance of this research to both the clinical mental health and psychological well-being of our population of women, given the wide use of hormonal contraceptives in the United States. This study focused specifically on perceptions of social stress, but future studies must explore the impact that hormonal

contraceptives could have on other mental health effects to continue to reduce the critical gap in scientific knowledge, and women's own knowledge, regarding the psychological effects of hormonal contraceptives.

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Appendix

Interpersonal Stress Scale Items

1. “In the last week, how often have you felt insecure or anxious in a social environment?”
2. “In the last week, how often have you felt worried about the status of your relationship with someone in your life (i.e., friend, family member, significant other being upset/angry with you)?”
3. “In the last week, how often have you felt worried about not fitting in or being isolated from a certain group of people?”
4. “In the last week, how often have you felt worried about what someone else might think of you?”
5. “In the last week, how often have you attempted to escape/avoid a potentially uncomfortable or stressful social situation?”
6. “In the last week, how often have you felt worried about not being able to complete tasks on time (i.e., academic assignments, work tasks, extracurricular tasks)?”
7. “In the last week, how often have you felt extremely worried about a grade you received in a class?”
8. “In the last week, how often have you felt inadequate in your abilities to succeed academically?”
9. “In the last week, how often have you felt like you could not meet the expectations other people have for you (i.e., teachers, family members, friends, significant other)?”

10. "In the last week, how often have you felt pressured by someone or a group of people?"
11. "In the last week, how often have you felt your obligations were piling up so high that you could not overcome/complete them?"
12. "How often have you sought for distraction or excitement as a way of reducing feelings of stress (i.e., engaging in risky behaviors)?"