

Effects of Premenstrual Syndrome on Mood and Judgment

By

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Abstract

The present study investigated attributions that subjects would make premenstrually. Fifty-one women with a mean age of 18.5 years were selected for the study following their completion of the Menstrual Distress Questionnaire. These subjects were randomly assigned to informed groups and non-informed groups. The informed group was told the study concerned premenstrual syndrome. Subjects completed a frustration task in the lab and then made a series of personally relevant and irrelevant judgments. They also completed a mood assessment. Finally, subjects answered direct questions about the attributional basis of their judgments. Results showed that life satisfaction ratings of subjects who had attributed their mood to the current phase of their menstrual cycle were lower than those who did not make that attribution. Also, the results showed that women were in more negative moods when tested during their premenstrual phase than when tested at other times. This was true regardless of whether they were informed about the purpose of the study.

Introduction

For many years, investigators have been concerned with a cluster of phenomena that seem to occur in the few days prior to some women's menstrual periods. This cluster has been termed "premenstrual syndrome" (PMS). Due to many inconsistencies in the research, controversy continues over whether or not there really is a premenstrual syndrome. Although the percentages of women suffering from the disorder have ranged from as low as 25% to as high as 90%, the most frequently quoted percentage is 40% of all women between the ages of 14 and 50 (Lauersen, 1983). However, this figure 's based on a disputed definition. Researchers have defined the syndrome in various ways leading to ambiguity in the findings. Also, the symptoms involved have caused controversy. With as many as 150 symptoms being cited (Moos, 1985), it is hard to pinpoint one syndrome. Despite this, attempts have been made to develop a reliable assessment form to aid in diagnosis (Halbreich & Endicott, 1982; Moos, 1985; Steiner, Haskett, & Carroll, 1980).

In the literature the term "premenstrual" has covered a span from 6 to 14 days before the onset of menstruation. For the purposes of this paper, "premenstrual" will refer to the period seven days prior to menstruation. The "intermenstrual" phase is the time following menstruation and lasts until the premenstrual phase starts. The term, "perimenstrual" phase, is used when referring to the premenstrual and menstrual phases combined.

As is the case with most disorders, a definition is important for proper diagnosis and treatment. Rublnow and Roy-Byrne (1984) defined

PMS as "the cyclic occurrence of symptoms that are of sufficient severity to interfere with some aspects of life and which appear with a consistent and predictable relationship to menses" (p.163). This definition emphasizes the severity of the symptoms and the timing of the symptoms. However, this definition may not be accurate because of the heterogeneity in symptoms. As many as 150 symptoms have been cited as part of the premenstrual syndrome (Moos, 1985). The same woman does not always experience the same set of symptoms each month. Also, the symptoms vary from woman to woman (Gallant & Hamilton, 1988). Although much of the research is based on similar ambiguous definitions, one must meet several criteria to be diagnosed with the disorder according to the DSM-III-R (Diagnostic Statistic Manual of Mental Disorders - revised third edition, American Psychiatric Association, 1987). In the manual, PMS is given the label, "Late Luteal Phase Dysphoric Disorder" (LLDP). Criteria for diagnosis include: 1) reporting at least five to ten mood, behavioral, or somatic symptoms occurring for most menstrual cycles; 2) the symptoms must occur during the last week of the luteal phase and end within a few days after the onset of menstruation; 3) symptoms must be severe enough to interfere with work, social activities, and relationships with others; 4) it must be confirmed through daily self-ratings for two symptomatic cycles (American Psychiatric Association, 1987). In summary, the essence of the varied definitions is that a premenstrual syndrome should consist of a set of symptoms with sufficient severity to interfere with the sufferer's life. Also, it must occur in the week preceding the onset of menstruation.

As stated earlier, as many as 150 symptoms have been reported from

PMS sufferers (Moos, 1985). Commonly reported symptoms include irritability, tension, fatigue, dysphoria, impaired motor coordination, headaches, nausea, and edema (Rubinow & Roy-Byrne, 1984). In addition to commonly cited symptoms, other symptoms have been reported. These include allergy attacks, epileptic seizures, and schizophrenic episodes (Callant & Hamilton, 1988).

Dysmenorrhea is commonly confused with premenstrual syndrome due to the similarity in symptoms. Dysmenorrhea sufferers experience physical discomfort and pain in conjunction with the onset of menstruation. Symptoms include irritability, nausea, and lower back pain (Ruble & Brooks-Gunn, 1982). The difference between the two involves the onset of menstruation. Dysmenorrhea occurs with menstruation at the same time that premenstrual symptoms should be subsiding. Much of the controversy surrounding actual premenstrual syndrome sufferers arises because a distinction is sometimes not made between the two phenomena.

Although the occurrence of cyclic symptoms has been studied since 1931, it was not until 1968 that some kind of assessment form was developed. It was then that Moos (1985) devised his Menstrual Distress Questionnaire(MDQ). The measure consisted of 47 reported symptoms which were subsequently divided into eight groups using factor analysis. The eight groups were pain, water retention, concentration, negative affect, behavioral change, arousal, autonomic reactions, and control. The revised scale is made up of two different forms. One form asks subjects to rate their symptoms in three phases of their most recent menstrual cycle: 1) during menstrual flow; 2) four days before flow; 3) during the remainder

of the cycle. The other form is used for daily assessments in that it asks subjects to rate how they feel on the day of filling out the questionnaire. This form asks women if they are menstruating on that day. In his recent manual, Moos (1985) provides internal consistency values for his measure indicating its reliability. His failure to do this in earlier writings provoked criticism (Parlee, 1974).

Through the years, the MDQ has received much criticism (Kanouse & Hanson, 1982; Metcalf & Hudson, 1985; Parlee, 1974; Rubinow & Roy-Byrne, 1984). In the midst of this criticism, others attempted to develop new measures to investigate PMS. To do this, Steiner, Haskett, and Carroll (1980) modified the MDQ and added psychiatric symptom rating scales. Abraham (cited in Rubinow & Roy-Byrne, 1984) also devised a 19-item scale, but he failed to use standardized psychometric procedures. Finally, Halbreich and Endicott (1982) developed the Premenstrual Assessment Form. Of all the measures, this seems to be the most promising. However, most research still utilizes the MDQ as the measure for PMS. This may be because the symptoms listed on the survey are the symptoms most women associate with PMS, it is shorter than the Premenstrual Assessment Form, and it is most widely known.

Regardless of the questionnaire being used, it is important to use the measure correctly and to be aware of the biases which may affect self-reports. Due to many factors, retrospective assessments do not accurately reflect symptoms experienced. For example, it has been demonstrated that women may base their answers on stereotypic beliefs exaggerating symptom severity (Parlee, 1974). Ruble (1977) found that

women who were told they were premenstrual reported higher levels of water retention, pain, negative affect, and change in eating habits than those who were told they were intermenstrual. This points to an influence of demand characteristics. Finally, retrospective reports are much less reliable than concurrent reports (Aubuchon & Calhoun, 1985; Metcalf & Hudson, 1985; Rubinow, Roy-Byrne, Hoban, Grover, Stambler, & Post, 1985).

Although many biological theories have been proposed, the focus in the present study is on the psychological aspects of premenstrual syndrome. Whereas the biological theories examined the hormonal effects on psychological processes,

A psychological perspective, on the other hand, focuses on the psychological concomitants of the physiological changes, and leaves open the possibility of complex social processes mediating the relationship between physiological and psychological changes. (Parlee, 1982: P.78)

Parlee (1982) and others (Koeske & Koeske, 1973; Rodin, 1976) have contributed to the psychological hypotheses.

Parlee (1982) noted an interesting piece of information she found concerning Dalton's work (cited in Parlee, 1974). Dalton was examining the relationship between performance on a nationally administered examination and the phase of the menstrual cycle of the students at the time of the test. The data showed that "students taking the examination

were more likely to be in the premenstrual and menstrual phases than in the remainder of the cycle" (Parlee, 1982, p.80). This is the same relationship Dalton found between crime and cycle phase in previous research. However, in this situation the women had no control over the timing of the examination. Therefore, it is impossible that physiological changes produced premenstrual tension which predisposed the woman to take the examination. She had no control over it. Rather it appears that the stress of the upcoming test affected the timing of the onset of menstruation. Thus, the correlation between cycle phase and taking the examination could be the result of a third factor, stress. Stress affected both the onset of menstruation and performance on the test (Parlee, 1982). In fact, Dalton had analyzed the individual menstrual records of the women and found "38 of the 91 students had alterations in the usual length of their menstrual cycles" (cited in Parlee, 1982, p.81). This may provide an alternate explanation for the correlations between behavior and the onset of menstruation. The usual interpretation is a biological one, namely that the physiological changes of the menstrual cycle produce a psychological tension which predisposes women to perform the acts correlated with the premenstrual and menstrual phases (Parlee, 1982). Rather, the data appear to suggest that stress is the culprit causing the correlation between behavior and cycle phase.

To validate her findings, Parlee (1982) referred to work that had been done in an attribution theory framework. Before discussing the

particular research, it is important to gain an understanding of attribution theory in general.

Attribution Theory

"Attribution theory begins with man's motivation to understand the cause and effect relations that underlie and give stable meaning to the shifting surface of events" (Jones, Kanouse, Kelley, Nisbett, Valins, & Weiner, 1971, p. xi). Thus, attribution is the process by which one establishes causes for one's own behavior or the behavior of others. According to attribution theory, people will attribute negative moods internally if there is no external source to which they could otherwise attribute their negative moods (Kelley, 1971). The moods seem inappropriate because there seems to be no cause for them. Then the person feels it is his/her personality which is to blame. An experiment by Schwarz and Clore (1983) illustrates this phenomena. They induced good and bad moods in subjects. Then, subjects were asked to judge their overall well-being. Earlier, the subjects had been in a room about which they were told one of three things: 1) the room would make them feel tense or nervous; 2) the room would make them feel happy or elated; 3) they were given no information about the room. Subjects who were put in a bad mood and knew the room would make them tense or nervous had some external source to which they could attribute their bad feelings. Their judgments of well-being were not as low as those who did not have the room on which to blame their feelings. Instead, they interpreted their

momentary negative feelings as a reaction to considering their life as a whole. This was reflected in their lowered judgment of life satisfaction.

Zanna and Cooper (1976) discussed cognitive dissonance and the attribution process. They concluded, "when it is possible to mislabel dissonance-produced arousal, people do seem to prefer misattributing their arousal over changing their attitudes as a means of resolving their dissonance" (p.211). This may explain the high percentages of women complaining of irritability and increased anger in the premenstruum. Women are socialized to be strong and not let their defenses down if they want to make it in a "man's world". Thus, a woman is put in a state of dissonance when she feels like crying but holds it in to keep her facade of strength. When she is premenstrual, she does not have to change her attitude about being a "strong" woman. Instead, she can attribute her negative feelings and behavior to the fact that she is premenstrual. Once a month, women have something on which they can blame angry outbursts (Parlee, 1982). Even though they may experience the same feelings intermenstrually, it is during the premenstrual and menstrual phases which they have something to which to attribute them.

In fact, Slade and Jenner (1980) discovered that women who were classified as "very egalitarian" report more symptoms. This may be due to the explanation just offered. These women "may suffer conflict between biological and social roles" (p. 112). An explanation for their findings could be that the women are attributing their negative feelings to the menstrual

cycle rather than changing their attitudes about traditional female roles.

A study by Rodin (1976) implicates the usefulness of attribution theory in explaining some of the inconsistent findings in menstrual studies. Golub (1976) discussed the suggestion that women are handicapped intellectually by menstruation, in her study on the effects of premenstrual anxiety and depression on cognitive functioning. She quoted a description of a situation where a young woman is taking her Graduate Record Examination. The woman is said to be at a disadvantage if she is taking the exam during the premenstruum. Golub tested this idea and found no effects of the premenstruum on cognitive functioning. According to Rodin (1976), these findings may be due to the process of reattribution. She predicted that a woman, who was presented with "task-relevant" pressure and arousal and thought that menstruation made her tense and nervous, would attribute the arousal to the menstrual cycle and would perform better than a woman not given a source of reattribution. The results confirmed her hypothesis.

A more useful application of the attribution paradigm in research on premenstrual syndrome can be seen in the study by Koeske and Koeske (1975). In this experiment, they predicted subjects would attribute negative moods to the menstrual cycle if they were premenstrual, but not if they were postmenstrual. They also expected subjects to attribute negative feelings internally if their mood was inappropriate to the situation. This is similar to the Schwarz and Clore (1983) study. There were three

independent variables, each with two levels. Subjects read an "excerpt from a normal college student's interview with a (clinical) counselor". The excerpt provided subjects with information about the hypothetical female student. She was either: 1) premenstrual or postmenstrual; 2) seen as in a pleasant or unpleasant environment; 3) in a good or bad mood. In one condition, the mood was appropriate to the situation. In another condition the mood was inappropriate to the situation. For example, the student had received good news from home, but she was in a bad mood. Subjects then rated the female student's mood with each of eight different moods such as quiet, depressed, or peaceful. Following this, subjects attributed the student's moods to various factors including cycle phase, personality, or environment. The results confirmed the hypotheses. If the student was said to be premenstrual, subjects attributed her inappropriate mood to her cycle phase. If she was postmenstrual, they attributed it to her personality. When her mood was consistent with her environment, they attributed it to situational factors.

The present study investigates premenstrual syndrome within the attribution theory framework. This experiment was designed as a combination of Schwarz and Clore (1983) and Koeske and Koeske (1975). While Koeske and Koeske (1975) looked at people's perceptions of a hypothetical situation, the current study examines women's attributions during their own menstrual cycle rather than someone else's. The design of the study is similar to Schwarz and Clore (1983) in that we are offering

subjects the opportunity to attribute their bad mood to a causal factor. In their case it was beliefs about a room. In our case it is their beliefs about their premenstrual suffering. Unlike previous research in this area (Koeske & Koeske, 1975), the experiment has an informed group and an uninformed group. It is made salient to the informed group that this is a study concerning PMS. The uninformed group is not told the true purpose of the study until the experiment is almost over.

In the experiment, we pretested subjects with the Menstrual Distress Questionnaire to find out whether or not they identified themselves as sufferers. Subjects were randomly assigned to the informed group or the uninformed group with half the sufferers in one group and half in the other group. Also half of the non-sufferers were placed in each group. We then attempted to call subjects in during their premenstrual period. In the lab, all subjects attempted a problem-solving task which was designed to frustrate them. We expected that sufferers in the informed group would attribute their negative feelings to their premenstrual state and would thus show higher judgments of life satisfaction than all other groups. We also expected them to report more negative moods.

Method

Subjects

Fifty one subjects from Introductory Psychology and Personality Psychology courses participated in the study. These subjects were chosen from 123 people who had returned the Menstrual Distress Questionnaire

distributed in their classes. Sixteen of the subjects received credit for the Introductory Psychology course while the other subjects received payment of \$2.00 and one instant lottery ticket. Subjects ranged from age 17 to 21 with a mean age of 18.5.

Measure

The Menstrual Distress Questionnaire was developed by Moos in 1968. To develop the questionnaire, data for 47 symptoms reported by 839 women was intercorrelated and factor analyzed. Using separate analyses for the premenstrual, menstrual, and intermenstrual phases, eight factor scales evolved. These were: Pain, Water Retention, Autonomic Reactions, Negative Affect, Impaired Concentration, Behavior Change, Arousal, and Control. Internal consistencies range from .53 for the Control scale to .89 for the Negative Affect scale. For purposes of this experiment, the Negative Affect scale and the Water Retention scale were utilized. (See Appendix A for complete questionnaire.)

Procedure

Approximately 750 questionnaires were handed out to prospective subjects. When the surveys were returned they were tallied for each scale on the MDQ. In addition to the MDQ, several questions were asked to gain demographic information and menstrual cycle information. Also, the question "Do you think of yourself as someone who suffers from premenstrual syndrome?", was asked. All subjects who returned the MDQ were telephoned to see if they were interested in participating in a study.

The informed group was told the study was related to the PMS questionnaire they had completed. The uninformed group was told a bogus reason for the study. We accepted any person who agreed to participate.

The original design was a 2 X 2 with the two conditions being identifier (sufferer or non-sufferer) and informed (yes or no). According to the dates provided on the questionnaire, subjects were scheduled for the experiment when they were calculated to be premenstrual. However, many dates were not accurate, so the design has expanded to a 2 X 2 X 2 with the conditions being the same as above and the third being phase (premenstrual or not premenstrual).

Subjects were run individually with fifteen minutes devoted to each subject. They were randomly assigned to the informed group and uninformed group as they came into the lab. Each group was given different directions. The informed group was given the following instructions:

Before we begin, I want to remind you that you have the right to refuse to continue at any time throughout the experiment. You may remember that you recently filled out a questionnaire concerning premenstrual syndrome. As a result of your score on that questionnaire, I have called you in order to look at PMS further. Based on the dates you gave me on your survey, I called you in during the premenstrual phase of your cycle. The purpose of this

experiment is to test the effects of the menstrual cycle on several cognitive processing tasks. Some of these tasks have right and wrong answers and some do not. The first will be a problem-solving task. Next will be judgments about another person and last will be judgments about yourself.

The uninformed group were given an altered set of directions. These were as follows:

Before we begin, I want to remind you that you have the right to refuse to continue at any time throughout the experiment. The purpose of this experiment is to look at the relation between cognitive processing tasks that have right and wrong answers and those that do not. We are interested in the kind of cognitive processes involved in problem-solving and the kind involved in making judgments. The first task today will be a problem-solving task. Next, you will make judgments about another person. Then, you will make judgments about yourself.

Following this, subjects were given the instructions for the problem-solving task. (See Figure 1.) Subjects were taken into the small room where the task was set up and given the following directions:

What you will be doing is a simple task which most people can complete in a minute or so. However, I am going to

allow you five minutes to solve it in case you have problems with it. This is how the task will work. You must stand behind this line (pointing to a line drawn on the floor). Your goal is to use the items on your side of the line to place that plastic cylinder over the nail on the wooden block (pointing to a wooden block several feet away on other side of room with plastic cylinder next to it). You may use anything on your side of the room to solve the task, but your body may not cross the plane of the line (demonstrating what this means). When you have solved the task, I will direct you to the other tasks. Are there any questions? I will be observing you from outside.

Insert Figure 1 Here

Subjects were then given five minutes to solve the task. The items given to them to solve the task were not sufficient for a solution. There was nothing which would enable them to solve it. They were given two dowel rods each of which was not long enough to reach the cylinder. They were also supplied with two thumb tacks, three pennies, two one-inch strips of wire, and a piece of chalk.

After five minutes, time was called and subjects were directed to the table in the same room at which they first read an ambiguous paragraph

about "Donald" (See Figure 2). They then completed judgment scales about Donald's actions in the description they read (See complete questions in Appendix A). The next questions were about their own life satisfaction. These questions were: 1)"How happy do you feel about your life as a whole?" with 1 being not at all happy and 10 being very happy. 2) "How satisfied or dissatisfied are you with your life as a whole these days?" with 1 being not at all satisfied and 10 being very satisfied. The complete questions are located in Appendix A. Next, subjects completed a mood assessment scale to determine exactly what emotions were induced. This scale may also be found in Appendix A.

Insert Figure 2 Here

Following this, the informed group continued with the next page of questions which investigated the influence of PMS on the subjects' answers. Before the uninformed group could complete this form, they were told the true purpose of the study. These questions asked subjects to evaluate the degree to which their physical state affected their ability to solve the task and the degree to which it affected their judgments about Donald and themselves (see Appendix A).

Results

Mood

The mood data showed that women questioned premenstrually

reported more negative feelings than women questioned intermenstrually. However, these results were only significant for the mood variables happy and sad. Premenstrual women were significantly more sad [$F(1,35) = 4.78, p = .035; M_1 = 6.43, M_2 = 4.40$]. Also, this same group of women were less happy [$F(1,35) = 3.87, p = .057; M_1 = 6.91, M_2 = 9.05$]. On the edgy and agitated variables there were no significant differences between

Insert Figure 3 Here

premenstrual and intermenstrual women (See Figure 3). These results were not a function of suggestion because there was no interaction between phase and whether women were informed that the study concerned premenstrual syndrome. Overall, the data are consistent with the idea that some kind of premenstrual symptoms are common, although the label "premenstrual syndrome" implies more than mere mood variation.

Evaluative Ratings

Correlations show that ratings of life satisfaction are predictable from ratings of being agitated, happy, and sad. Also, negative ratings of "Donald" are related to being agitated, edgy, and sad. (See Table 1 for correlations).

Insert Table 1 Here

Thus, we found that evaluative judgment is biased by mood. Also, it appears that personally relevant judgments (e.g., life satisfaction ratings) are more affected than personally irrelevant judgments (e.g., ratings of "Donald").

Attributions

Contrary to the findings of Schwarz and Clore (1983), having an irrelevant cause to attribute one's momentary feelings to did not eliminate mood effects on judgment. In fact, we found just the opposite. The more subjects attributed their current moods to their cycle, the lower their evaluative ratings. The correlation between the life satisfaction question, "How satisfied or dissatisfied are you with your life these days?", and attribution of mood to cycle was $r = -.27$, $p = .06$. For attribution of mood to cycle and negative "Donald" characteristics $r = .31$, $p = .02$. For the other life satisfaction question, "How happy do you feel with your life as a whole?", $r = .02$, $p = .89$. Thus, this question did not reflect the findings of the other two variables above.

Discussion

Women report more sadness and less happiness during the premenstrual phase of their cycles. This pattern can be used as evidence for the existence of some kind of mood variation caused by the

premenstrual phase because it occurred whether or not the subjects were informed of the nature of the study. We expected the informed premenstrual sufferers to report more negative moods than uninformed premenstrual sufferers because the PMS idea was made salient to the informed group. However, this result was not obtained. Suggestion did not play a role in subjects' moods. However, it is important to remember that women are not necessarily blind to the point in their cycle. Our finding does not verify that there is anything biological happening. Women may remind themselves that they are premenstrual despite the fact it was not made salient to them. It is also important to keep in mind that no differences were found for the moods edgy and agitated. Thus, the evidence for PMS in our subjects is not overwhelming. Still, our data do suggest that particular mood symptoms occurred premenstrually in our sample.

As stated above, ratings of life satisfaction are predictable from ratings of being agitated, happy, and sad. In addition, negative attributions of "Donald" are related to ratings of being agitated, edgy, and sad. The results also show that life satisfaction ratings are more affected by mood because these correlations reach higher levels of significance than do correlations between negative "Donald" characteristics and mood. Thus, there was strong evidence that mood biased evaluative ratings with the personally relevant judgments appearing to be more affected than personally irrelevant judgments.

The most interesting discovery was in the answer to our last question: "Does attribution to PMS eliminate mood effects on judgment?" In a second study, Schwarz and Clore (1983) found that subjects who could attribute their negative feelings to the weather exhibited higher ratings of life satisfaction than subjects who were not given the opportunity to make such an attribution. Attribution of mood states to the weather eliminated the effect of mood on judgment. We expected similar results in our study. However, we obtained opposite results. In the present study, subjects who attributed their negative mood to their cycle, showed lower life satisfaction ratings and rated "Donald" as more negative than women who did not make that attribution. Thus, the critical difference between "blaming" the weather versus blaming PMS is that the weather is external and PMS is internal. It seems as if the weather can be labeled an external source of attribution and the person is placing the blame for bad moods on something outside of themselves. On the contrary, PMS is more internal and it makes the person feel even worse when she has to blame her bad mood on something inside herself.

While these results are interesting, it is important to note the problems with the study and means of improvement. In the life satisfaction questions the wording may need to be revised. The two questions resulted in very different correlations for attribution and mood. For the first question, "How happy do you feel with your life as a whole?", showed very insignificant correlations with mood and attribution of mood

to cycle. At the same time, the second question, "How satisfied or dissatisfied are you with your life as a whole these days?", provided strong correlations between mood and attribution of mood to cycle. It is possible that the words "these days" triggered subjects to report their feelings today, while the first question was answered based on an overall evaluation. These questions may need to be made more equivalent.

Another problem with the study was the sample size. Using the method described above, subjects completed the MDQ and were telephoned later for further participation. Many women were unwilling to come into the lab for the experiment, especially the uninformed group. If a similar study is done, it is suggested that all subjects be run and then complete the Menstrual Distress Questionnaire following the experiment. In order for the informed group to know the nature of the study, the experimenter could still make it explicit that this is a study about PMS. This would also eliminate any experimenter bias because the experimenter could have no way of knowing if the subject is a sufferer or not until the end of the experiment. This revised design would also allow the experimenter to look at more equal numbers of premenstrual, menstrual, and intermenstrual women. In the present study, we attempted to call subjects in according to dates given on the original survey. Only 50% of the women were, in fact, at the premenstrual time of their cycle. Thus, we were not very successful at looking at only premenstrual women. In the revised design, this problem would be eliminated because everything

would be done in one session.

A last adjustment of the current study might be to rename the "Donald" paragraph with a woman's name. While it is uncertain whether or not having a male to judge had any effect, it might have made a difference. A future study might possibly look at subjects' responses to a male as opposed to a female.

Overall, we found some interesting results in this study. However, these results may be only applicable to a college population of 17 to 21 year olds. Previous studies have shown that the mean age of PMS sufferers is 30 years old. Thus, further study might involve looking at the same attribution process in older women and especially in women who have sought medical treatment for their premenstrual suffering. Still, the fact that some mood symptoms were found premenstrually supports the existence of the syndrome. There was mood-biased evaluative judgments. Most importantly, attribution to PMS enhanced mood effects on judgment instead of eliminating them. These results support a fairly successful study which might prove to be even more interesting if revised and run again with the proposed changes.

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Table 1. Correlations Between Moods and Evaluative Ratings

	Life Satisfaction #1	Life Satisfaction #2	Life Satisfaction Totalled	Negative Donald Characteristics
Agitated	-.01	-.40 **	-.28 *	.31 *
Edgy	-.06	-.30 *	-.23	.26
Sad	-.06	-.52 **	-.39 **	.25
Happy	.25	.32 *	.33 *	-.23

All r's listed reached $p = .10$ except $r = -.01, -.06, -.06$

* $p = .05$

** $p = .01$

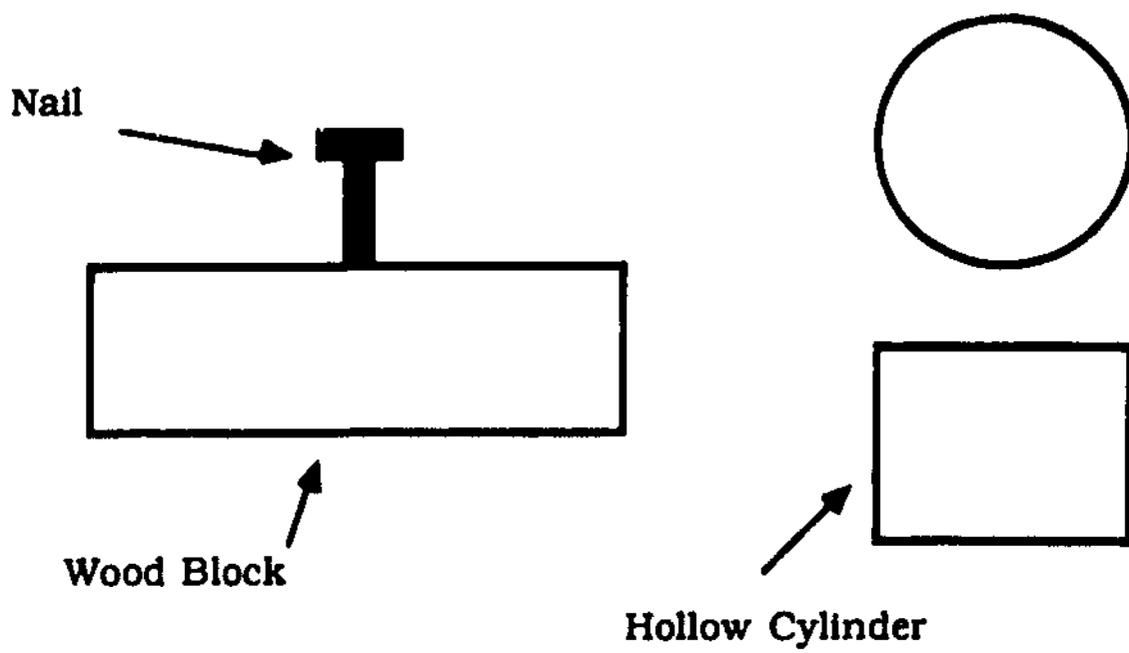
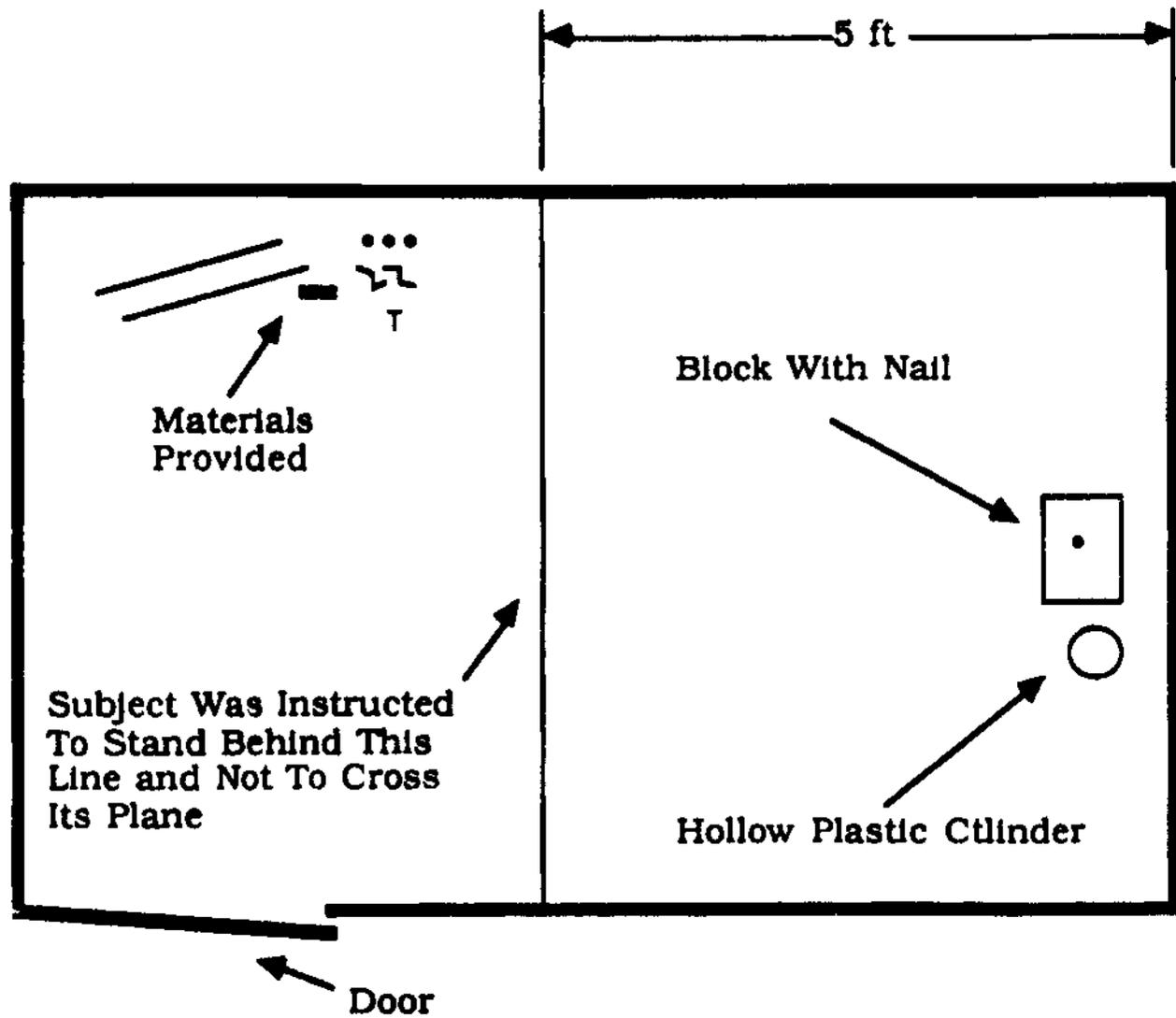
Figure Legends

Figure 1. In the frustration task, subjects stood behind the line and attempted to place the cylinder around the nail on the wooden block. The materials they were given included two dowel rods (too short to reach the cylinder), two one-inch long pieces of wire, one thumb tack, one piece of chalk, and three pennies.

Figure 2. Subjects read this paragraph about "Donald" and rated him on four positive characteristics and four negative characteristics.

Figure 3. Premenstrual subjects reported significantly more sadness and less happiness than intermenstrual subjects. There were no significant differences for the edgy and agitated variables.

Figure 1. Frustration Task



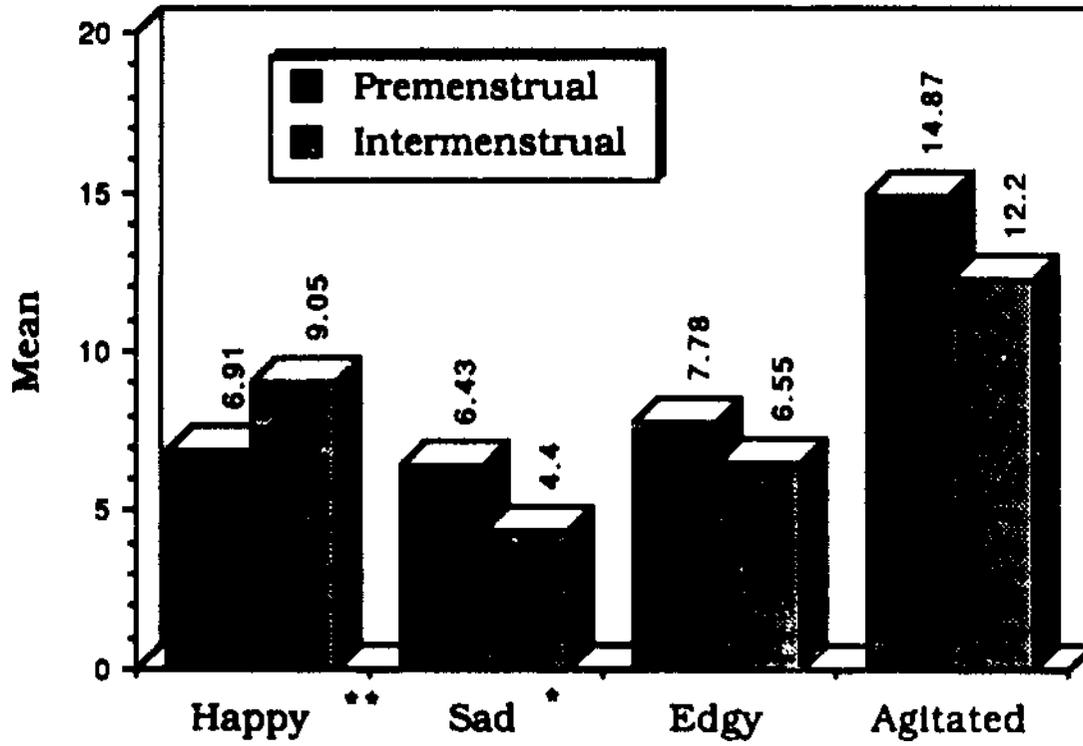
Not To Scale

Figure 2

Donald

Donald spent a great amount of time in search of what he liked to call excitement. He had already climbed Mt. McKinley, shot the Colorado rapids in a kyack, driven in a demolition derby, and piloted a jet-powered boat - without knowing very much about boats. He had risked injury, and even death, a number of times. Now he was in search of new excitement. He was thinking, perhaps, he would do some skydiving, or maybe cross the Atlantic in a sailboat. By the way he acted one could readily guess that Donald was well aware of his ability to do many things well. Other than business engagements, Donald's contacts with people were rather limited. He felt he didn't really need to rely on anyone. Once Donald made up his mind to do something it was as good as done no matter how long it might take or how difficult the going might be. Only rarely did he change his mind even when it might well have been better if he had.

Figure 3. Mood by Phase



* $F(1,35) = 4.78, p = .03$
** $F(1,35) = 3.87, p = .057$

Appendix A

Menstrual Distress Questionnaire

PART A

For each answer choose the category that best describes your experience of that symptom during that time. Write the number of that category in the space provided. Even if none of the categories is exactly correct, choose the one that describes your experience. Do not leave any blank spaces. Describe your experience in general (i.e., do not describe your last menstrual period only.)

Descriptive Categories

- 0 - No experience of symptom
- 1 - Present, mild
- 2 - Present, moderate
- 3 - Present, strong
- 4 - Present, severe

	1	2	3
	During menstrual flow	Four days before	Remainder of cycle
1. Muscle stiffness	_____	_____	_____
2. Weight gain	_____	_____	_____
3. Dizziness, faintness	_____	_____	_____
4. Loneliness	_____	_____	_____
5. Headache	_____	_____	_____
6. Skin blemish or disorder	_____	_____	_____
7. Cold sweats	_____	_____	_____
8. Anxiety	_____	_____	_____
9. Mood swings	_____	_____	_____
10. Cramps	_____	_____	_____
11. Painful or tender breasts	_____	_____	_____
12. Nausea, vomiting	_____	_____	_____
13. Crying	_____	_____	_____
14. Backache	_____	_____	_____
15. Swelling (breasts, abdomen)	_____	_____	_____
16. Hot flashes	_____	_____	_____
17. Irritability	_____	_____	_____
18. Tension	_____	_____	_____
19. Fatigue	_____	_____	_____
20. Feeling sad or blue	_____	_____	_____
21. General aches and pains	_____	_____	_____

- 22. Restlessness _____
- 23. Insomnia _____
- 24. Poor school, work performance _____
- 25. Affectionate _____
- 26. Feelings of suffocation _____
- 27. Forgetfulness _____
- 28. Take naps, stay in bed _____
- 29. Orderliness _____
- 30. Chest pains _____
- 31. Confusion _____
- 32. Poor judgment _____
- 33. Stay at home _____
- 34. Excitement _____
- 35. Ringing in the ears _____
- 36. Difficulty in concentrating _____
- 37. Avoid social activities _____
- 38. Feelings of well-being _____
- 39. Heart pounding _____
- 40. Distractible _____
- 41. Decreased efficiency _____
- 42. Bursts of energy, activity _____
- 43. Numbness, tingling _____
- 44. Minor accidents _____
- 45. Blind spots, fuzzy vision _____
- 46. Poor motor coordination _____
- 47. Increased appetite _____

PART B

Instruction: Please answer the following questions concerning. . .

1. What was the date of the first day of your most recent menstrual period? _____
2. How many days do your periods usually last? _____
3. How many days is your menstrual cycle (from the first day of one period to the first day of the next)? _____
4. Are you presently taking any medications? _____
5. Are you currently, or in the past three months, using oral contraception? _____
6. Are you married? _____
7. How many times have you been pregnant? _____
8. How many live births? _____
9. Age? _____
10. Do you think of yourself as someone who suffers from premenstrual syndrome? YES _____ NO _____

Thank you once again for your participation in this project. Your help is greatly appreciated.

Please take into account all the information contained in the paragraph about Donald and answer the following questions by circling the appropriate number.

I think Donald can be characterized as:

1	2	3	4	5	6	7	8	9	10
extremely undesirable	undesirable			slightly undesirable		slightly desirable	desirable		extremely desirable

I think Donald can be characterized as:

	not at all						very much
1. reckless	1	2	3	4	5	6	
2. persistent	1	2	3	4	5	6	
3. independent	1	2	3	4	5	6	
4. conceited	1	2	3	4	5	6	
5. adventurous	1	2	3	4	5	6	
6. stubborn	1	2	3	4	5	6	
7. aloof	1	2	3	4	5	6	
8. self-confident	1	2	3	4	5	6	

Affective Assessment Questionnaire

This scale consists of emotion words that may or may not describe how you feel. Presented below is the scale for indicating how strongly you are feeling each of the listed emotions. Please circle the number that best describes how you are feeling at the moment.

1	2	3	4	5
Very slightly or not relevant	slightly intense	moderately intense	considerably intense	very intense

REMEMBER, YOU ARE TO MAKE YOUR RESPONSES ON THE BASIS OF THE WAY YOU FEEL AT THIS TIME. IT IS NOT NECESSARY TO PONDER; YOUR FIRST ANSWER IS PROBABLY THE BEST.

1. happy	1	2	3	4	5	6
2. sad	1	2	3	4	5	6
3. displeased	1	2	3	4	5	6
4. upset	1	2	3	4	5	6
5. frustrated	1	2	3	4	5	6
6. irritable	1	2	3	4	5	6
7. blue	1	2	3	4	5	6
8. cheerful	1	2	3	4	5	6
9. optimistic	1	2	3	4	5	6
10. gloomy	1	2	3	4	5	6
11. on edge	1	2	3	4	5	6
12. aroused	1	2	3	4	5	6
13. emotional	1	2	3	4	5	6
14. agitated	1	2	3	4	5	6
15. distressed	1	2	3	4	5	6

