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Date March 7, 1972

A STUDY OF POST PARTUM MOOD CHANGES AS REFLECTED
BY RESPONSE TO THE NOWLIS MOOD SCALE

by

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ABSTRACT

The purposes of this study were (1) to identify the mean levels of each of nine moods which were experienced by normal post partum patients on each of the first, the third, and the fifth days following delivery; (2) to determine the amount of change in the moods under consideration on the days which were studied; (3) to establish whether or not the patients experienced the moods in a similar manner; and (4) to evaluate whether or not there is a relationship between parity and mood levels and changes.

Modified versions of the Nowlis Mood Scale were administered to seventy-five selected maternity patients in four hospitals in Montana in a period between January 3, 1971, and June 30, 1971. Of the questionnaires which were distributed, 48 percent were returned thus representing a sample of one hundred five patient days.

Results of the study indicated that the patients in this study experienced consistently low levels of aggression and of sadness and high levels of social affection and of elation. Fatigue levels showed the highest individual and daily variations. Mood levels which fell within 1 SD of variation above and below the mean mood level and which did not exceed 1 mood measurement point were determined to be similar. Over 68 percent of the patients reported no feelings which were related to moods of aggression and of sadness on the first and the fifth post partum day. Use of a modified t test showed that differences in means of mood levels in both groups were due to randomness of sample rather than due to true difference. (Significance was at the .35 level.) This conclusion that parity is not related to specific post partum mood levels and changes is consistent with study results reported in the review of related literature section.

The researcher recommends the study be duplicated with a larger sample size and with better control over the limitations. Maternity nurses in Montana may find the results of this study useful as a normative for evaluating the mood levels which are demonstrated by similar post partum patients on their units. Nursing students may find results of this study helpful as guidelines to use in learning to observe the mood status of post partum patients.

Chapter 1

INTRODUCTION

Current nursing and medical literature frequently refers to the phenomenon of "post partum blues" and emotional changes occurring in women during the first six weeks after delivery. Reference is made to the fact that newly delivered mothers often can be expected to display symptoms of mood lability with emphasis on episodes of transient depression. Yet, apparently, no systematic attempt has been made to identify specifically the degree to which normal post partum patients usually experience other common moods, in addition to depression. A small percentage of mothers undergo depression to such a degree that psychiatric care is necessary. One of the problems of medical personnel today is that of early identification of mothers who are becoming unusually depressed, so as to minimize the severity of the disorder through prompt treatment. This study involved an attempt (1) to identify specific moods experienced by post partum patients who delivered normal infants following uncomplicated pregnancy, labor, and delivery and (2) to establish a pattern of mood status in normal mothers as reflected by their responses to the Nowlis Mood Scale. It was hoped that if a normal pattern of mood levels could be established in this study, the information learned could be used in later studies to identify those patients experiencing abnormal moods.

STATEMENT OF THE PROBLEM

The problems to be considered in this study were:

1. What are the mean levels of each of nine moods studied in a selected group of post partum patients on each of the first, third, and fifth days following delivery?
2. How much fluctuation is present in comparing the mean levels of each of nine moods studied in a selected group of post partum patients on each of the first, third, and fifth days following delivery?
3. Is there a pattern (common sequence) of mood level fluctuations (or stasis) experienced by post partum patients on each of the post partum days studied?
4. If a pattern of mood level fluctuation (or stasis) experienced by post partum patients exists, is the pattern, as well as the mood level, influenced by parity?

PURPOSE OF THE STUDY

The investigator wished to determine the average level of each of nine moods experienced by post partum patients, whether the moods change over a period of time, whether or not the patients experience the moods in a similar manner, and whether or not there is a relationship between parity and both mood levels and changes. Such knowledge was

considered as basic to further investigations into the problem of early identification of patients with abnormal mood experiences.

BASIC ASSUMPTIONS

Two assumptions were made by the investigator:

1. Mood levels experienced by post partum patients will be reflected by their responses to the Nowlis Mood Scales.
2. Patients' admission to hospital maternity departments are on a random basis.

METHODOLOGY

The descriptive method of research was used, and the investigator employed the survey technique. A modified form of the Nowlis Mood Scale (see Appendix A) was administered successively on the first, third, and fifth post partum days to selected maternity patients who had their physicians' consent (see Appendix B and Appendix C) and who agreed to participate in the study. The period of time between the patients' breakfast and lunch was designated as the common time for the Nowlis Mood Scale to be completed. The investigator, or her assistants, reviewed each patient's hospital record in the light of criteria for inclusion in the study group (see page 4), before requesting the patient's participation in the study. (See Appendixes D, E, and F.) The patient's consent to respond to a series of three "questionnaires"

(the word test was avoided due to the negative connotation) was sought, with assurance of anonymity emphasized. Mothers were instructed in a similar manner by the investigator or her assistants to complete one Nowlis Mood Scale on each of the first, third, and fifth post partum mornings she was in the hospital. If the patient were to be discharged before she completed all of the Nowlis Mood Scale, she was requested to complete it on the appropriate morning at home and mail it to the researcher in the stamped, addressed envelope provided.

The sample selected included mothers conforming to the following requirements: experiencing their first post partum day, between the ages of eighteen and thirty-five, delivered of a single, full-term (five-pound minimum birthweight) infant, married, of the white race, vaginally delivered, not displaying overt symptoms of psychosis during pregnancy, not taking any mood changing drugs within twenty-four hours of the study, and having an infant free of known congenital deformities and respiratory distress. No patient was included who displayed overt symptoms of infection (oral temperatures over 100 degrees Fahrenheit). All patients were Montana residents. Both primiparas and multiparas were included in the study. The major variable of concern was that of parity.

The study was conducted with patients in four selected hospitals in four selected Montana cities between January 3, 1971, and June 30, 1971. The Nowlis Mood Scale was to be filled out between the patients' breakfasts and lunches on the mornings of their first, third,

and fifth post partum days. The investigator and her assistants agreed to give similar instructions to the patients which included the use of the word questionnaire and the avoidance of the term test in requesting each patient's cooperation.

LIMITATIONS

A number of limitations of the study should be considered:

1. More than one individual administered the Nowlis Mood Scale to the patients. The approach that was used by each individual data collector may have influenced the responses of the patients to the mood scales.
2. A limited sample of hospitals in Montana was considered. Patients in other hospitals in Montana may have responded differently from the selected group.
3. There was no way of knowing whether or not the patients took mood changing drugs prior to, or during the study, i.e., surreptitiously either in the hospital or at home. In addition, the mood effects of standard post partum medications (e.g., ergotrate) have not been established.
4. The size of the sample was limited by two factors: (a) the lack of cooperation on the part of hospital authorities in granting consent for the study to be conducted and (b) the failure of a number of the patients to return the Nowlis Mood Scale to the researcher.

DESCRIPTION OF TOOL

The original form of the Nowlis Mood Scale, sometimes termed the Mood Adjective Check List, consists of a long form and a short form. The long form lists one hundred forty adjectives in random order, of which thirty-three adjectives relate specifically to eleven moods while ten are repeated to allow tests on reliability. The remaining adjectives are dummy items. The short form lists forty adjectives in random order, of which twenty-four adjectives relate specifically to eight moods. The remainder of the adjectives are dummy items. The subject is to respond to each adjective in terms of how he feels at the moment of testing. Two check marks (✓✓) are placed to the left of the adjective if the subject definitely feels the way described; one check mark (✓) connotes slight feeling; a zero (0) indicates subject cannot decide or adjective is not applicable to presently experienced feelings; crossing out the word indicates adjective definitely does not apply to subject's feelings.

For this study, the original length of the Nowlis Mood Scale was modified in the following manner: (a) only the moods with adjectives having highest coefficients of correlation between the scale and the mood criterion (as determined by originators of Nowlis Mood Scale in process of developing the tool) were used. Thus, adjectives relating to skepticism and nonchalance were not considered. Adjectives pertaining to moods of aggression, anxiety, surgency, concentration, fatigue, social

affection, sadness, egotism, and elation were included; and (b) the long-form Mood Adjective Check List was judged by the researcher to be too long for the patients in the study to complete comfortably within five minutes. The investigator judged that if a longer period of time were required on the part of the patients, cooperation in completing the check lists would be difficult to obtain. Yet the short form of the Nowlis Mood Scale did not include adjectives relating to the mood of elation, which the researcher judged as pertinent to the post partum patients under consideration. Also, with so few dummy items in the short form, the researcher judged that the subjects may have been able to identify the actual adjectives under consideration and may have responded in a manner they felt was expected by the researcher. One of the limitations of the tool is that it is not yet possible to detect whether or not the responses of the subjects have coincided with what they felt was expected of them by the investigator.¹ Therefore, forty-seven adjectives pertaining to nine moods were listed with a random selection of the same dummy adjectives listed on the original, long-form Mood Adjective Check List. These mood adjectives and dummy adjectives were listed in random order. A book of random numbers was consulted to perform this process. The total number of adjectives to which the

¹Russel O. Green, "On the Measurement of Mood," Technical Report No. 10 (Rochester, New York: Department of Psychology, University of Rochester, August, 1965), p. 13. (Mimeographed.)

patient was asked to respond was sixty. The same general format and set of instructions, as presented in the original long and short forms of the Mood Adjective Check List, were used in this Check List. (See Appendix A.)

DEFINITIONS

1. aggression: angry, defiant, rebellious.²
2. anxiety: clutched up, fearful, jittery.³
3. change, fluctuation, and variation: to make or to become different; to alter by the substitution of something else for, or by giving up for something else; to put or to take another or others in place of . . . ; to become different or altered.⁴
4. concentration: concentrating, engaged in thought, serious.⁵
5. egotism: boastful, egotistic, self-centered.⁶
6. elation: elated, overjoyed, pleased.⁷
7. fatigue: drowsy, sluggish, tired.⁸

²Vincent Nowlis and Russel O. Green, "Factor Analytic Studies of the Mood Objective Check List," Technical Report No. 11 (Rochester, New York: Department of Psychology, University of Rochester, August, 1965), p. 23. (Mimeographed.)

³Ibid.

⁴Webster's New Collegiate Dictionary (6th ed.; Springfield, Mass.: G. and C. Merriam Co., Publishers, 1961).

⁵Nowlis and Green, loc. cit.

⁶Ibid.

⁷Ibid.

⁸Ibid.

8. mood: the affective state of the moment.⁹
9. mood level: amount of response to mood adjectives, arbitrarily measured on a scale of one to four.¹⁰
10. normal mother: one who meets the criteria of the investigator for inclusion in the study (see page 4).
11. parity: condition of a woman with respect to the number of children she has borne; multiparous, having borne more than one child and primiparous, having borne one child.¹¹
12. pattern: statistically defined as being existent when two standard deviations of variation about the mean of each mood level does not exceed one point of mood level measurement.
13. sadness: regretful, sad, sorry.¹²
14. social affection: affectionate, kindly, warm-hearted.¹³
15. surgency: carefree, playful, witty.¹⁴

⁹ Webster's New Collegiate Dictionary, loc. cit.

¹⁰ Nowlis and Green, loc. cit.

¹¹ Webster's New Collegiate Dictionary, loc. cit.

¹² Nowlis and Green, loc. cit.

¹³ Ibid.

¹⁴ Ibid.

Chapter 2

REVIEW OF RELATED LITERATURE

THE POST PARTUM MOTHER

I

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Emotional depression in newly delivered mothers is considered to be a near-universal behavior pattern. Douglas reports that women experiencing what is referred to frequently as "baby blues" usually appear quiet and withdrawn.¹ Transitory tearfulness, increased irritability, impaired concentration, and restlessness are symptoms observed most frequently.² In many instances, the patient is troubled by insomnia for the duration of the depression.³

Estimates of the incidence of mild post partum depression vary. Most sources cite rates of occurrences between 50 and 80 percent. A higher frequency of post partum depression is noted among women previously experiencing post partum blues in former puerperal states and also in older mothers. Carner reports that 54 percent of primiparous

¹Gwenth Douglas, "Some Emotional Disorders of the Puerperium," Journal of Psychosomatic Research, XII (June, 1968), 101-06.

²P. H. Tooley, "Psychiatric and Psychological Disturbances of Pregnancy and the Puerperium," The Practitioner, CXLIV (June, 1965), 772-80.

³Irvin Yalom and others, "Post Partum Blues Syndrome: A Description and Related Variables," Archives of General Psychiatry, XVIII (January, 1968), 16-27.

women and 46 percent of multiparous women experience mild forms of depression post partum.⁴ A study by Pitt of 336 randomly selected post partum patients in London, England, showed no significant difference in incidence of post partum blues as related to parity.⁵ An investigation of thirty-nine randomly selected post partum patients at Stanford Hospital, Palo Alto, California, showed a higher incidence among primiparas.⁶ Yet research by Jarrahi-Zadeh reported in the British Journal of Psychiatry concluded that multiparous patients experienced symptoms of depression more frequently than primiparous patients.⁷ It would appear that the relationship between parity and the incidence of mild post partum depression yet is to be established.

Mood lability often is mentioned along with the mild depression characteristic of "baby blues." Yet in the library research conducted by the investigator, no mention was made of the degree of mood lability, the specific moods which seemed to fluctuate, nor the approximate time any particular lability was said to occur (other than depression).

⁴Charles Carner, "Don't Be Surprised by After-Baby Blues," Today's Health, XLV (December, 1967), 33.

⁵Brice Pitt, "Atypical Depression Following Childbirth," British Journal of Psychiatry, CXIV (November, 1968), 1325-335.

⁶Yalom and others, op. cit., pp. 20-27.

⁷Ali Jarrahi-Zadeh, "Emotional and Cognitive Changes in Pregnancy and Early Puerperium," The British Journal of Psychiatry, CXV (July, 1969), 797.

Generally, "post partum blues" are considered self-limiting and usually occur between the third and tenth post partum days.⁸ In the previously mentioned study at Stanford Hospital, depression peaked some time between the third and seventh post partum days.⁹ Hamilton reports that symptoms of depression rarely are noted before the third post partum day, usually peak on the sixth, and disappear after the seventh post partum day. Carner states, "99% of the cases of post partum blues improve without treatment,"¹⁰ while Greenhill notes, "A mild post partum depression should not be taken lightly." He recommends that the patient be reminded of her achievement and reassured wherever possible. He further advises observation of the depressed post partum patient, since "occasionally a mild depression may become a psychosis."¹¹

Melges estimated that women, within the first three months of delivery, encounter a four-fold increase in the risk of becoming psychotic.¹² The previously mentioned study conducted by Pitt concluded that the incidence of severe post partum depression of proportions

Causes
↑
Risks
Stats

⁸Tooley, op. cit., pp. 773-79.

⁹Yalom and others, op. cit., pp. 17-26.

¹⁰Carner, loc. cit.

¹¹Jacob Greenhill, Obstetrics (Philadelphia: W. B. Saunders Co., 1966), p. 487.

¹²Frederick T. Melges, "Post Partum Psychiatric Syndromes," Psychosomatic Medicine, XXX (January-February, 1968), 95-108.

requiring psychiatric help was 3 percent.¹³ Onset of actual, post partum psychosis is usually within the first thirty post partum days. Of one hundred patients encountering post partum psychiatric syndromes, sixty-four experienced onset on the fourth post partum day.¹⁴ A significant, positive correlation exists between the occurrence of mild post partum depression and the incidence of post partum psychosis.¹⁵ Symptoms of severe post partum psychosis and the mild form of "baby blues" are apparently quite similar at first. Pitt reported that the serious form of post partum depression "usually begins in the hospital and can be distinguished from the mild form by its longer duration in some patients." Most mothers appeared normal in the hospital, except for experiencing what was considered by hospital staff to be "the blues."¹⁶ Symptoms of severe depression usually continue several days and include "insomnia, restlessness, depressed spirits, irritability, exhaustion, headache, and rapid changeability of mood," as reported by Hamilton.¹⁷ Other authors caution nursing personnel to observe the patient for signs of withdrawal, suspiciousness, disinterest in the

¹³Pitt, op. cit., pp. 1326-334.

¹⁴Melges, op. cit., pp. 96-100.

¹⁵Yalom and others, op. cit., pp. 18-25.

¹⁶Pitt, op. cit., pp. 1327-335.

¹⁷James A. Hamilton, Post Partum Psychiatric Problems (St. Louis: Mosby Co., 1962), p. 17.

baby, any evidences of insomnia as well as any episodes of inexplicable crying.¹⁸

Greenhill asserts that symptoms of post partum psychosis, if they are given immediate attention, usually can be alleviated readily. He suggests further that the capacity of women who experience this syndrome to respond to treatment decreases daily.¹⁹ Of importance was the fact that the onset of symptoms of post partum psychosis may mean lengthy family separation, as one investigator reports that 4 percent of the women did not improve within one year post partum.²⁰ It appears clear that both early detection and treatment of women with this syndrome are necessary in order to minimize the disruption of the newly evolving family.

THE NOWLIS MOOD SCALE

The research literature indicated that the developers of the Nowlis Mood Scale define mood as, "consisting of the perceptual and cognitive responses to hypothetical information or discriminable cues coming from within the organism about the current function and orientation of

¹⁸ Joy Ingals, Maternal and Child Health Nursing (St. Louis: Mosby Co., 1967), p. 191.

¹⁹ Greenhill, op. cit., pp. 350-62.

²⁰ Peter O. Regan, "Ways to Manage Post Partum Emotional Disorders," Consultant, III (January, 1963), 32-33.

the organism."²¹ The concept of mood is "usually not clearly and immediately used when we wish to ask someone to report his affective state of the moment."²² It was with this particular line of usage that the developers of the Nowlis Mood Scale initiated an effort to utilize responses to specified adjectives in order to describe changes in the various aspects of mood.²³ Nowlis and Green explain their purpose in the following statement: "Our interest was in developing a simple, clearly structured method to elicit and use test responses to mood adjectives in the study of mood and mood change."²⁴ The developers of the Nowlis Mood Scale first became interested in measuring both mood and mood changes while they were working with college subjects in the study of the effects of various psychoactive drugs.²⁵

The Nowlis Mood Scale was developed as a result of four studies. These investigations were conducted by Vincent Nowlis and his associates

²¹Russel O. Green, "On the Measurement of Mood," Technical Report No. 10 (Rochester, N.Y.: Department of Psychology, University of Rochester, August, 1965), p. 15. (Mimeographed.)

²²Ibid., p. 17.

²³Ibid., p. 16.

²⁴Vincent Nowlis and Russel O. Green, "Factor Analytic Studies of the Mood Objective Check List," Technical Report No. 11 (Rochester, N.Y.: Department of Psychology, University of Rochester, August, 1965), p. 2. (Mimeographed.)

²⁵Green, op. cit., p. 5.

at the Department of Psychology, University of Rochester, Rochester, New York:

1. A list of 140 adjectives was given to a group of four hundred college fraternity men immediately before and after administration of a mood-influencing drug on six successive Monday nights. The subjects were instructed to give fast, immediate reactions to the adjectives which were presented. Factor analytic studies were performed to identify those adjectives with the highest reliability and correlations. Ten moods with related adjectives of high correlation were identified. In this study, ten adjectives were repeated on the list; reliability estimates ranged from .54 to .89, and none of the subjects indicated that he recognized repeated words. An attempt was made to identify clusters of adjectives that varied together under varying circumstances. At this time, adjectives showing sequence effects, those with virtually no variance, and those that did not correlate with any other adjectives were removed from the list.²⁶

2. A replication study involved administration of a list of forty adjectives (related to eight moods) to 163 Navy men immediately before and after participation in an activity which was calculated to induce a strong mood reaction. These activities included viewing motion pictures with comedy sequences, the Nuremburg trials, a surgical

²⁶ Nowlis and Green, op. cit., p. 4.

operation, and patriotic themes and participating in a contest and in a hoax. The same check list was administered to 165 female college students after completion of a final examination. The results of this study were noted to parallel the first. The conclusion was that the responses of the subjects to mood adjectives change with the variations in experimental situations. Construct validity thus was established. No significant difference was shown between the responses of males and of females.²⁷

3. Fifty-one fraternity men filled out an adjective check list daily for periods of twenty-five to sixty days at the same time each day. Correlations of responses to adjectives ranged from $+ .50$ to $+ .75$. The conclusion was that these individuals had relatively stable moods at one particular time of day. "Descriptions of momentary mood, and therefore probably the felt state of the organism, are not subject to wild fluctuations under ordinary circumstances."²⁸

4. Finally, the Nowlis Mood Scale was given to fifty-one men and eighty-seven women four times with instructions to respond as if they were experiencing a specific mood with each administration. The factor scores changed significantly with each administration. The conclusion was that detection of faking was not possible with the current check list.²⁹

²⁷Ibid., p. 5.

²⁸Ibid., p. 8.

²⁹Ibid., p. 12.

Nowlis and Green concluded that "factor scores based on as few as three variables may yield significantly different scores between two administrations of the list and significant correlations with other behavioral and situational variables."³⁰ Furthermore, "dimensions of mood reflect general patterns of function and orientation."³¹ Mood states can be described in terms of average level and in terms of the extent to which an individual varies from his average. Normally, humans are in most or all of the separate moods to some extent all at once.³² In a comparison of the Nowlis Mood Scale with other instruments, Nowlis and Green pointed out:

A variety of sensible correlations exist between the Nowlis Mood Scale factors and temperament factors reflected on the Guilford-Martin Temperament Survey, whose factors correlate with the Minnesota Multiphasic Personality Inventory results.³³

Finally, the developers of the scale wrote: "Permission is granted to use the MACL [Mood Adjective Check List] for any research or investigatory purpose."³⁴

³⁰Ibid., p. 34.

³¹Harry H. Garner, "Post Partum Emotional Disturbances," Psychosomatics, V (September-October, 1964), 275-76.

³²Vincent Nowlis and Helen Nowlis, "Description and Analysis of Mood," Annals of the New York Academy of Science, LXV (February, 1956), 345-55.

³³Nowlis and Green, op. cit., pp. 25-26.

³⁴Ibid., p. 29.

Chapter 3

PRESENTATION AND ANALYSIS OF DATA

A modified form of the Nowlis Mood Scale was administered to selected post partum patients in hospitals on the mornings of their first, third, and fifth post partum days. Either the investigator or one of her assistants distributed copies of the modified Nowlis Mood Scale with instructions (see Appendix A) to seventy-five patients in four selected hospitals in four cities in Montana in the period from January 3, 1971, to June 30, 1971.

Table 1 presents the number of questionnaires (the Nowlis Mood Scale) which were distributed and which were returned later to the researcher according to:

1. The various locations, i.e., the hospitals.
2. The types of selected patients: (a) primiparas and (b) multiparas.

Of the seventy-five questionnaires which were distributed to the selected post partum patients, 36 (48 percent) were returned to the researcher. Of the thirty-six questionnaires which were completed, eleven were completed by primiparas while twenty-five were returned by multiparas. The total number of thirty-six represents a sample of 105 patient-days.

Table 1
Distribution and Return of Nowlis Mood Scales

Institution	Number of ques- tionnaires distributed	Number returned by primiparas	Number returned by multiparas	Percentage returned
Hospital A	10	2	5	70
Hospital B	15	1	6	47
Hospital C	30	2	9	37
Hospital D	20	6	5	55
Total	75	11	25	48

Table 2 presents the number of children borne by patients who responded to the Nowlis Mood Scale. Of the respondents, thirty-one percent were primiparas. The maximum number of children borne by the patients in this study was six.

Table 2
Parity Frequency

Subjects	Number of Children					
	1	2	3	4	5	6
Number	11	10	9	5	0	1

The first problem of this study was to identify the mean level of each of nine moods experienced by post partum patients on each of the first, third, and fifth days following delivery. The following considerations were made: The modified Nowlis Mood Scale tested responses to twenty-seven adjectives pertaining to nine moods. Patients were instructed to make two check marks (✓✓) by adjectives on the list if they definitely felt the way described; one check mark (✓) connotated slight feeling; a zero (0) indicated the subject could not decide if the adjective was applicable to the feelings experienced; crossing out the word indicated the adjective definitely did not apply to the subject's feeling. Responses to the various three adjectives pertaining to each of

the nine moods under consideration arbitrarily were accorded values of (1) four points for a double check mark, (2) three points for a single check mark, (3) two points for a zero, and (4) one point for crossing out the word. The total number of points for the three adjectives relating to each mood was computed, and the mean was calculated.

A mean value for each of the nine moods as related to parity and post partum day was calculated. These mean values appear in Figures 1, 2, and 3 in Appendix G and in Figures 4, 5, and 6 in Appendix H. On the first post partum day patients seemed to experience relatively high levels of social affection and elation while levels of aggression and sadness were low. Levels of aggression and sadness appeared to remain low on all three days with relatively low amounts of variance. Levels of social affection and elation remained relatively high on the third and fifth days post partum, but amount of variance was relatively high on the third day in comparison to other days. Anxiety, surgency, concentration, and egotism mean levels remained moderate on all three days with concentration the strongly felt mood. Fatigue levels were remarkable in that in all days a wide variance in response was noted.

The second problem was to determine the amount of fluctuation in mean levels of each of the nine moods in comparing the responses on the first, third, and fifth post partum days. Quantities of mean level changes from the first to the third and the third to the fifth day are represented in Table 3 and in Table 4.

Table 3
Amount of Mood Level Change in Primiparas Between Post
Partum Days

Mood	Primiparas			
	Between first and third day	Between third and fifth day	Total increase	Total decrease
Aggression	+.06 ^a	+.06	.12	---
Anxiety	+.01	-.22 ^b	.01	.22
Surgency	-.25	-.13	---	.38
Concentration	-.04	-.31	---	.35
Fatigue	-.33	+.16	.16	.33
Social Affection	-.19	+.18	.18	.19
Sadness	+.07	-.04	.07	.04
Egotism	-.03	-.30	---	.33
Elation	-.42	+.31	.31	.42

^a + = increase in mood level.

^b - = decrease in mood level.

Table 4
Amount of Mood Level Change in Multiparas Between Post
Partum Days

Mood	Multiparas			
	Between first and third day	Between third and fifth day	Total increase	Total decrease
Aggression	+0.13 ^a	-0.07 ^b	.13	.07
Anxiety	+0.10	+0.05	.15	—
Surgeny	-0.05	+0.04	.04	.05
Concentration	-0.31	-0.07	—	.38
Fatigue	-0.70	+0.04	.04	.70
Social Affection	-0.23	+0.26	.26	.23
Sadness	-0.01	-0.02	—	.03
Egotism	-0.11	+0.20	.20	.11
Elation	-0.30	-0.04	—	.34

^a + = increase in mood level.

^b - = decrease in mood level.

The levels of sadness, of aggression, of anxiety, and of surgency appeared to vary the least from day to day in these post partum patients (total less than .5 mood point), while fluctuation in concentration, in social affection, and in egotism appeared to be moderate (total between .5 and 1.0 mood point). The levels of fatigue and of elation fluctuated the most (total over 1.0 mood point). Furthermore, the fatigue levels on the third day were noted to be considerably lower in comparison with the fatigue level on the first post partum day. The fatigue levels fluctuated slightly, however, in the positive direction between the third day and the fifth day. In addition, the mood level of elation appeared to drop at least .3 mood point for these post partum patients.

The third problem was to determine whether or not a pattern (common sequence) of mood fluctuation or stasis experienced by the post partum patients on each of the post partum days which were studied exists. A pattern was designated arbitrarily as being in existence if the band inclusive of the mean and 2 standard deviations of variation were not wider than one point of mood level measurement. Standard deviation is the most widely used measure of variation. One standard deviation above and below the mean encompasses 68 percent of the area under the curve of normal distribution. Two standard deviations above and below the mean encompass 98 percent of the area under a curve of normal distribution.

If this were the case, then 2 standard deviations of variation would include 98 percent of the patients experiencing each mood at the time under consideration. If 98 percent of the mood levels of the post partum patients do not vary over one mood point, then it is stated arbitrarily by the researcher that this result comprises a pattern of mood experienced by this select group.

Figures 1, 2, and 3 in Appendix G dealing with the primiparas and Figures 5, 6, and 6 in Appendix H dealing with the multiparas plot 2 standard deviations of variation about the mean for those patients. Table 5 reveals the calculated standard deviation of mood level of primiparas from the mean for the three days while Table 6 shows the calculated standard deviation of mood level of multiparas for the same period. The tables represent the instances in which 1 standard deviation and 2 standard deviations of variation comprised a band of less than one mood measurement point about the mean. A pattern was found not to exist in all of the nine moods.

However, the levels of aggression by the primiparas on the first and on the third post partum days met the requirements. Considering a criterion that 1 standard deviation of variance must not exceed one mood level point, multiparous patients on the first and on the fifth post partum days experienced relatively low levels of aggression. Also, both the primiparous patients and the multiparous patients experienced low levels of sadness on their first and fifth post partum days.

Table 5
Calculated Standard Deviation of the Mood Level of Primiparas
from the Mean of the Total Three Days

Day	Mood Level of Primiparas								
	Aggression	Anxiety	Surgency	Concen- tration	Fatigue	Social Affection	Sadness	Egotism	Elation
First	.089 ^b	.670	.694	.589	.985	.479 ^a	.285 ^a	.591	.620
Third	.221 ^b	.928	.814	.770	.896	.866	.689	.468 ^a	.973
Fifth	.285 ^a	.624	.566	.934	.919	.533	.349 ^a	.430 ^a	.793

^a 1 standard deviation of variance not exceeding one mood level point.

^b 2 standard deviations of variance not exceeding one mood level point.

Table 6
Calculated Standard Deviation of the Mood Level of Multiparas
from the Mean of the Total Three Days

Day	Mood Level of Multiparas								
	Aggression	Anxiety	Surgency	Concen- tration	Fatigue	Social Affection	Sadness	Egotism	Elation
First	.332 ^a	.490 ^a	.600	.817	.888	.669	.462 ^a	.522	.872
Third	.556	.777	.590	.814	.762	.719	.482 ^a	.702	1.18
Fifth	.442 ^a	.592	.710	.770	.794	.498 ^a	.385 ^a	.574	1.005

^a standard deviation of variance not exceeding one mood level point.

Problem four aimed at determining whether parity influenced the level of mood and patterns (where existent) of mood level. Since the means of both primiparas' and multiparas' mood levels varied (1 standard deviation of variation > 1 mood level point) in all cases except those moods of aggression and sadness, tests for significance of difference in means were carried out only for the cases on the first and fifth post partum days. A modified t test was used. The modified t test is used for evaluating whether the difference between two small ($n < 25$) groups of unequal size is due to randomness of sample or true differences. Table 7 represents the results of these tests.

Table 7

The t test with Probability of Difference due to Randomness of Sample^a

Mood	First Day	Fifth Day
Aggression	$\frac{t}{p} = \frac{0.97}{0.35^b}$	$\frac{t}{p} = \frac{0.27}{0.50}$
Sadness	$\frac{t}{p} = \frac{0.40}{> 0.50}$	$\frac{t}{p} = \frac{0.00}{0.00}$

^aIn all cases, the difference between the means is not significant, i.e., a strong probability exists that the difference that is present is due to randomness of sample, rather than true difference between the two categories of patients.

^bThe letter "p" indicates that the probability is that the difference is random.

The probability that the differences between the two groups is due to randomness of sample, rather than real difference, in all cases, exceeds the 0.35 level. This means that there is a better than 35 percent probability that the difference between the means of the two groups is due to randomness of sample. The reader will recall that the standard level for accepting the difference between two research samples as being due to randomness, rather than real difference, is at the .05 level. Thus, the probability that these results are not due to a real difference between the two groups is substantial.

Chapter 4

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

Nursing and medical literature frequently discusses the phenomenon of post partum "baby blues" experienced by many mothers within a few weeks of delivery. Emphasis is placed on the periods of transient, self-limiting depression and mood lability encountered by these mothers. The level to which other moods in addition to depression were experienced, the amount of change in mood levels, determination of whether or not the majority of selected patients experienced the moods in a similar manner, and the influence of parity on mood level were the subjects of this study. This information was considered to be of help in future studies which will center on the identification of patients experiencing abnormal mood levels.

A modified form of the Nowlis Mood Scale was administered to seventy-five selected maternity patients in four Montana hospitals on the mornings of their first, third, and fifth post partum days. If the patients were to be discharged from the hospital before completion of the scales, they were instructed to complete the Nowlis Mood Scale on the appropriate morning at home and return it to the investigator by mail. Mothers in the sample fit the investigator's criteria for being

normal. (See page 4 for criteria used for inclusion in the study.)

This investigation was carried out during the first six months of 1971.

The original long form of the Nowlis Mood Scale, otherwise known as the Mood Adjective Check List, was shortened to include twenty-seven adjectives relating to nine moods, listed with twenty-three randomly selected dummy adjectives, all of which were listed in random order. The format and instructions accompanying the original Nowlis Mood Scale were retained in the modified Nowlis Mood Scale. The patients in the study were requested to respond to the adjectives in the check list by making two check marks in front of the adjective if it definitely described a currently experienced feeling, one check mark by the adjective if it slightly described the feeling experienced, crossing out the adjective if it definitely did not apply to the currently experienced feeling, and placing a zero in front of adjectives to which the subject could not decide or were not applicable to feelings of the moment. The major variable under consideration in this study was that of how parity influenced patients' mood levels.

Limitations of the study included the following:

1. More than one person administered Nowlis Mood Scales to the patients; approaches used by each administrator of the scale may have influenced patient responses to the mood scales.
2. A limited sample size of patients and hospitals were obtained.

3. Surreptitious, self-administration of mood-influencing drugs by patients was undetectable.

4. A limitation of the tool was that detection of faked responses to the adjectives was not possible.

The related literature that was reviewed indicated that the periods of depression, nonspecific mood lability, irritability, crying, and withdrawal, commonly known as "baby blues," are considered near-universal in scope. Estimates of the incidence of this mild post partum depression range from 50 to 80 percent. The relationship of parity to incidence of "baby blues" seems to be unclear, but it has been observed that older mothers and those experiencing episodes of depression in earlier pregnancies are more likely to experience "baby blues" during the post partum period. While mood lability is mentioned frequently as a symptom of "baby blues," the related literature did not include information relating to the degree to which various moods changed or the usual time particular moods fluctuated (other than depression).

Generally, mild post partum depression is considered to be self-limiting, although one author cautioned that post partum depression should not be taken lightly because of the possibility of it developing into a psychosis. The initial symptoms of post partum psychosis are similar to those of "baby blues." However, symptoms of post partum psychosis are longer lasting. Some authors suggest that symptoms of post partum psychosis can be relieved through early detection and

treatment. This study was conducted for the purpose of establishing normal post partum mood changes so that this information could be used in later studies of abnormal post partum mood changes. 

The Nowlis Mood Scale was developed while the originators were studying the effects of psychoactive drugs on mood. The mood scale was intended to be a clear, simple way of testing responses to mood adjectives in the study of mood and mood change. A series of studies was made with the intent of devising a list of mood adjectives with high levels of reliability and validity in reflecting a person's mood level at the moment of testing. The originators of the Nowlis Mood Scale state that Nowlis Mood Scale factors correlate with temperament factors on the Guilford-Martin Temperament Survey, whose factors correlate with the Minnesota Multiphasic Personality Inventory results. The major limitation of the Nowlis Mood Scale, in the opinion of the researcher, is that detection of faking on the part of the person completing the mood scale is not possible.

In analyzing the data, the researcher obtained a 48 percent return of mood scales. Of those returned, eleven were primiparas and twenty-five were multiparas. One hundred five patient-days were sampled.

The first problem of the study was to identify the mean levels for each of the nine moods studied on each of the first, third, and fifth post partum days under consideration. Arbitrary values of four

points were assigned responses of two check marks, three points for one check mark, two points for marking a zero by the adjective, and one point for crossing out the adjective. A mean was calculated for each of the nine moods on each of the first, third, and fifth post partum days for primiparas and multiparas. The results are presented in Appendix G and Appendix H. Patients' levels of aggression and sadness remained relatively low on all three days, with relatively low amounts of variance. Social affection and elation levels appeared to be relatively high on all three days with a good deal of variance among the patients on the third day as compared to other days. Mean levels of anxiety, surgency, concentration, and egotism were moderate on all three days. Fatigue levels showed a wide variation in responses of patients on all three days.

The second problem of the study involved a determination of the amount of fluctuation in mean levels of mood from day to day. This determination is presented in Table 3, page 23, and in Table 4, page 24. Levels of fatigue and elation fluctuated the most on the days sampled (total over 1.0 mood point) while fluctuation in concentration, social affection, and egotism was moderate (total between .5 and 1.0 mood point). The least amount of fluctuation (total under .5 mood point) was noted in levels of sadness, aggression, anxiety, and surgency. Elation and fatigue levels were lower on the third day than the first with fatigue levels rising slightly on the fifth day.

The third problem was to determine whether or not a pattern of mood level fluctuation (or stasis) experienced by post partum patients on each of the days studied exists. A pattern was defined arbitrarily as being in existence if 2 standard deviations of variance about the mean of each mood level did not exceed one mood point (as measured on a scale of one to four). The rationale behind this definition of pattern is presented on page 25. Table 5, page 27, and Table 6, page 28, present the instances in which 1 standard deviation of variance comprised a band about the mean mood level of less than one mood point. The reader will note that a pattern exists in the cases of primiparas on the first and third days experiencing near the same level of aggression. Sixty-eight percent of the multiparas on the first and fifth day experienced nearly the same level of aggression. The variation of 1 standard deviation equalling less than one mood point also exists in primiparas on the first and fifth days and multiparas on all three days, experiencing near the same level of sadness.

Problem four was aimed at determining whether parity influenced the level of mood and pattern (where existent) of mood level. Due to the fact that in all cases a variation of 1 standard deviation exceeded one mood level point, except in aggression and sadness on the first and fifth day in both primiparas and multiparas, only these particular moods were considered. A modified t test was applied to the data (see Table 7, page 29) and in all cases, it was determined that the

differences in means of the mood levels in both groups was due to randomness of sample, rather than true difference. (Significance in all cases was at or above the 0.35 level. The reader will recall that the standard level of significance usually necessary for acceptance is at the .05 level.)

CONCLUSIONS

The conclusions of this study should be viewed in the light of the limitations previously mentioned, particularly sample size and percentage of return. The researcher found the mean levels of social affection and elation to be relatively high all three post partum days. The amount of variance about the means was higher the third day than the other days. This result may indicate that individual patients in the group were experiencing mood lability. The consistent, wide variation in levels of fatigue (1 standard deviation $> .75$ mood point in all cases) leads to the conclusion that the amount of fatigue experienced by post partum patients is a highly individual matter.

Consideration of the amount of fluctuation in mean mood levels on each of the post partum days studied showed the most change to be in levels of fatigue and of elation (total fluctuation > 1.0 mood point). The mean fatigue levels dropped an average amount of 0.5 mood point from the first to the third day. This decrease may be attributed to the possibility that initial fatigue of labor and delivery was alleviated

by the third post partum day. The rise in fatigue levels between the third and fifth post partum days may have been due to the fact that many of the mothers would have returned home by the fifth post partum day.

Examination of the possibility that a pattern of mood change (or stasis) may exist showed that primiparas' levels of aggression on the first and third post partum days met the criteria of the researcher. (See page 4.) Based on the small amount of variance in the study results (2 standard deviations of variance about the mean $< .1$ mood point), there is a strong probability that other primiparous patients meeting the same criteria for selection as those in this study would experience low levels of aggression on the same days post partum. There is a better than 68 percent probability that other multiparous patients meeting the same criteria for selection as those in this study would, or might, experience low levels of aggression on the first and fifth post partum days. Also, there is a better than 68 percent probability that other similarly selected primiparous and multiparous patients will experience low levels of sadness on their first and fifth post partum days.

The influence of parity on the level of mood and pattern of mood level fluctuation (or stasis), if such pattern existed was sought. Calculation of the modified t test showed a high probability that the difference in selected mood level means of the primiparas and multiparas in the study was due to randomness of the sample, rather than true

difference. It seems possible to conclude that parity does not seem to influence the level of mood experienced by post partum patients. This apparent lack of relationship between parity and mood level is in harmony with studies reported by Pitt.

RECOMMENDATIONS

The researcher makes the following recommendations:

1. This study should be duplicated with a larger sample size and wider selection of hospitals to substantiate the results of this study. In contacting physicians and hospital administrators to obtain consent for conducting the study, personal contact between individuals is considered to be more successful than telephone, mail, or second-party contact. If a larger sample size were obtained, it would be helpful to arrange for mechanical scoring of the individual mood scale results. (Both the long and short forms of the original Nowlis Mood Scales are set up for either mechanical or manual scoring.)
2. The administration of the Nowlis Mood Scale to patients by a single individual may overcome the possibility of patients reacting to mood scales on the basis of their reaction to various administrators.
3. Further studies comparing the mood levels experienced by patients considered more susceptible to severe post partum depression, i.e., older mothers, mothers with previous episodes of severe post partum depression, with mothers in this sample, would be of interest.

Since some literature sources state that adoptive mothers occasionally undergo episodes of depression after receiving an infant, comparative studies of their mood levels to the population in this sample would be of interest.

4. Maternity nurses in Montana may find mean mood levels and amounts of fluctuation (or stasis) found in this study useful as normatives in evaluating moods demonstrated by similar post partum patients on their units.

5. Nursing students may find consideration of the various mood levels found in this study useful as guidelines for learning to observe post partum patients' mood status.

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APPENDIXES

APPENDIX A

MODIFIED NOWLIS MOOD SCALE

INSTRUCTIONS

Each of the words in the following list has been used at some time or other to describe feelings or mood. I would like you to use this list to describe your feelings at this moment. Mark each word according to the following instructions:

If it definitely describes your mood or feelings at this moment, place a double check (✓✓) to the left of the word. For example, if the word is peaceful and you definitely feel peaceful, place a double check to the left of the word as follows:

✓✓peaceful

If it is only slightly descriptive of your mood or feelings at this moment, place a single check (✓) to the left of the word. For example, if the word is peaceful and you feel slightly peaceful, place a single check to the left of the word as follows:

✓peaceful

If you cannot decide or if it seems not to apply to your mood or feelings at this moment, place a zero (0) to the left of the word. For example, if you cannot decide whether or not you feel peaceful, place a zero in front of the word as follows:

○peaceful

If the word definitely does not apply to your mood or feelings at this moment, cross out the word with a straight line. For example, if you definitely do not feel peaceful, cross out the word as follows:

~~peaceful~~

Work as quickly as possible. Your first reaction to each word is what I want, so mark each word quickly and move down to the next. Work down each column, making certain you go to the bottom of the page before you start the next column. Please mark all words. Thank you.

APPENDIX A (continued)

kindly	sad	dull
fearful	clutched up	witty
careless	boastful	efficient
self-centered	tired	lazy
drowsy	sluggish	overjoyed
aloof	annoyed	jittery
lighthearted	engaged in thought	cooperative
accommodating	egotistic	expansive
defiant	stubborn	rebellious
uncertain	attentive	serious
suspicious	inspired	enthusiastic
apprehensive	refreshed	playful
affectionate	elated	carefree
resourceful	inactive	startled
quiet	bored	warm-hearted
energetic	dubious	miserable
obedient	angry	work-oriented
independent	smug	sorry
delighted	contemplative	pleased
shocked	regretful	concentrating

Number of pregnancies _____

Day after baby was born _____

APPENDIX B

LETTER TO PHYSICIAN

February 3, 1971

Dear Doctor:

As a graduate student in the Montana State University, School of Nursing, I am conducting a research project concerned with studying mood fluctuations experienced by post partum patients.

Would you give your consent to the administration of a copy of the attached questionnaire to your post partum patients on their 1st, 3rd, and 5th post partum mornings? Approximately 15 minutes total time is involved on the part of the patient. No names will be used in any part of the study.

You may note a red number on the questionnaire; it is for the purpose of grouping patient responses. The question referring to number of pregnancies is for the sole purpose of comparing primiparas' and multiparas' responses.

I am enclosing a postal card for your convenience in replying. Thank you for your consideration.

Sincerely,

Frances Yuhas, R.N.

Mrs. Yuhas is enrolled in the Montana State University, School of Nursing, and is completing the above mentioned research project in partial completion of the requirements for a Master of Nursing degree. Any assistance you may give her will be appreciated.

Laura Walker, R.N., Ph.D.
Director, School of Nursing
Bozeman, Montana

APPENDIX C

INFORMATION ON POSTAL CARD FROM PHYSICIAN

You have my permission to administer your questionnaires to
post partum patients under my care.

Yes _____

No _____

Signed,

H. C. Kayser III, M.D.

APPENDIX D

LETTER TO DIRECTOR OF NURSING SERVICE

January 25, 1971

Director of Nursing Service
St. Peter's Hospital
Helena, Montana 59601

Dear Mrs. Broz:

As a graduate student at Montana State University, School of Nursing, I am conducting a research project concerned with the mood fluctuations experienced by post partum patients.

It would help me a great deal if some member of your staff would assist me in collecting data by giving selected post partum patients a copy of the attached cover letter and questionnaire. There are three steps involved in the procedure: 1. determining from information on the patients' charts their eligibility for inclusion in the study 2. securing patients' and physicians' consent 3. giving the eligible patients the forms.

I anticipate that most physicians will give their consent as little effort (less than 15 minutes total) is involved for the patient. The majority of maternity patients will qualify for the study, so a span of only a few weeks will probably be involved for data collection. The questionnaires are self-explanatory, so little, if any, explanation time would be involved on the part of the hospital staff. In the pilot study of the project, I encountered no patients unwilling to participate since their names are not used. Patients' names are not included in any form in the reporting of the study results.

If some member of your staff consents to the collecting of data for me, please give me her name so I may contact her personally. I have a short set of instructions to give her, so administration of the questionnaires will be standardized.

APPENDIX D (continued)

Frances Yuhas

-2-

January 25, 1971

Thank you for your consideration.

Sincerely,

Frances Yuhas, R.N.

Mrs. Yuhas is enrolled in the Montana State University, School of Nursing, and is completing the above mentioned research project in partial completion of the requirements for a Master of Nursing degree. Any assistance you may give her will be appreciated.

Laura Walker, R.N., Ph.D.
Director, School of Nursing
Bozeman, Montana

APPENDIX E

LETTER TO HEAD NURSE

February 24, 1971

Maternity Department Supervisor
Billings Deaconness Hospital
Billings, Montana 59601

Dear Mrs. Cellan:

As a graduate student at Montana State University, School of Nursing, I am conducting a research project concerned with the mood fluctuations experienced by post partum patients.

It would help me a great deal if you would permit Mrs. Wilson, instructor in the School of Nursing, to assist me in data collection. This would involve her giving selected post partum patients a copy of the attached cover letter and questionnaire. There are three steps involved in the procedure: 1. determining from information on the patients' chart their eligibility for inclusion in the study 2. securing the patients' consent 3. giving the eligible patients the forms.

I have secured several physicians' written consent for their patients' participation in the study. (Mrs. Wilson has a list of those physicians.) Little effort (less than 15 minutes total) is involved for the patient. The majority of maternity patients will qualify for the study, so a span of only a few weeks will probably be involved for data collection. The questionnaires are self-explanatory. In the pilot study of the project, I encountered no patients unwilling to participate, since their names are not used. Patients' names are not included in any form in the reporting of the study results.

If you have any questions about the study, please contact me. I would appreciate any suggestions you may offer and am anxious to hear from you. Thank you for your consideration.

Sincerely,

Frances Yuhas, R.N.

APPENDIX E (continued)

Frances Yuhas

-2-

February 24, 1971

Mrs. Yuhas is enrolled in the Montana State University, School of Nursing, and is completing the above mentioned research project in partial completion of the requirements for a Master of Nursing degree. Any assistance you may give her will be appreciated.

Laura Walker, R.N., Ph.D.
Director, School of Nursing
Bozeman, Montana

APPENDIX F

LETTER TO MOTHER

Dear Mother,

As a graduate student at Montana State University, School of Nursing, I am interested in the feelings experienced by new mothers.

It would help me a great deal if you would complete one of the attached questionnaires on each of the 1st, 3rd, and 5th days after your baby was born. Please fill out each questionnaire, at a convenient time for you, sometime in the mornings. If you leave the hospital before completing all the forms, please take them home with you, fill them out on the appropriate day in the morning, and mail them to me in the attached envelope.

Please fill in the space on the front sheet of each questionnaire asking for the number of times you have been pregnant, and notice the particular day after your baby's birth. Please do not put your name on the questionnaire; the red number on it is the only identification I need. I will not use your name in any way in this study.

If you have any questions, please ask the person who gives this letter to you. She will be happy to help you.

Thank you for your time and consideration.

Sincerely,

Frances Yuhas, R.N.

Mrs. Yuhas is enrolled in the Montana State University School of Nursing and is completing the requirements for a Master of Nursing degree. Any help you may give her will be appreciated.

Laura Walker, R.N., Ph.D.
Director, School of Nursing
Montana State University

APPENDIX G.

MOOD SCALE LEVELS FOR PRIMIPARAS

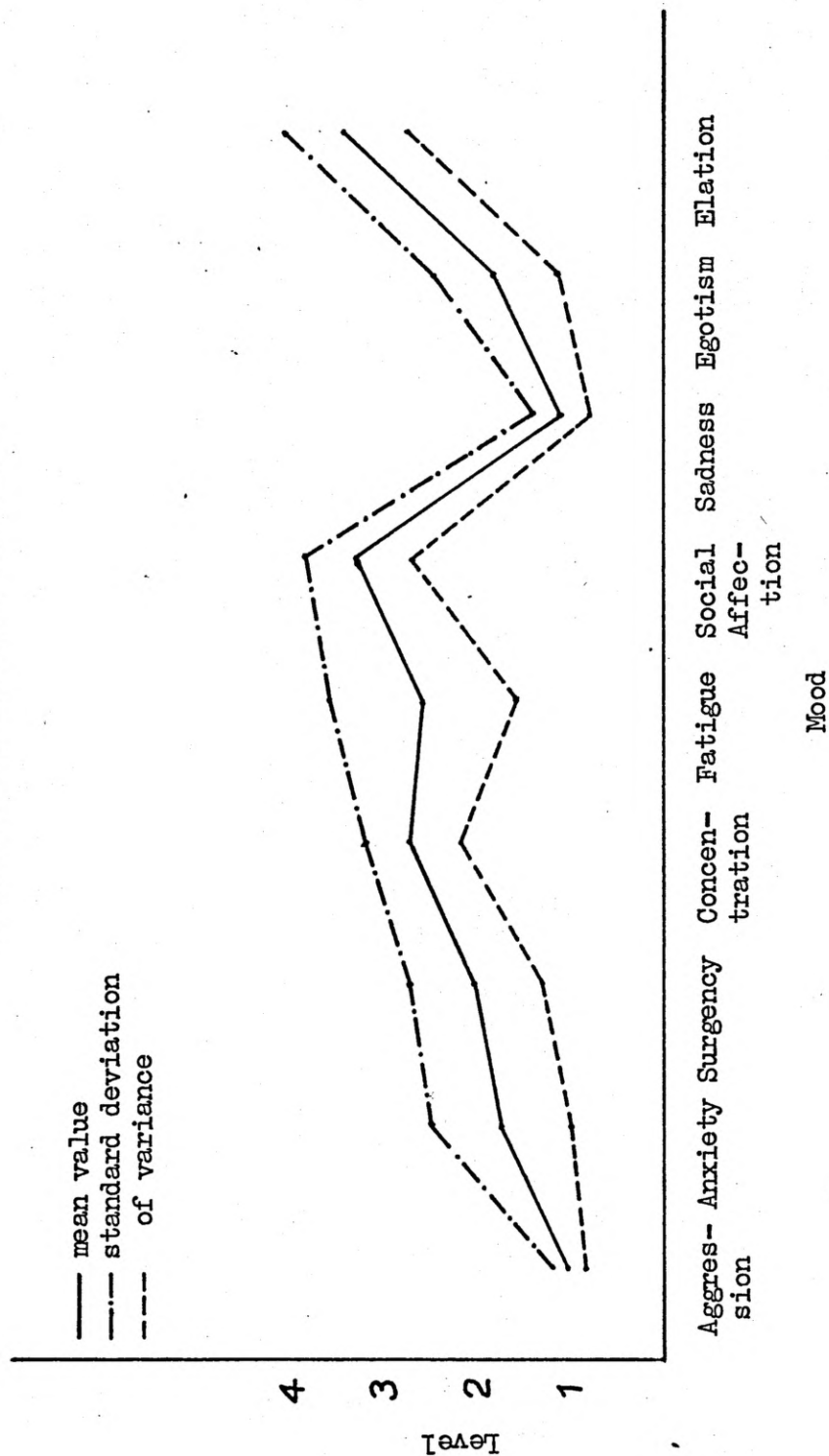


Figure 1

Mood Scale Levels for Primiparas for First Day^a

^aUsed strictly to illustrate.

APPENDIX G (continued)

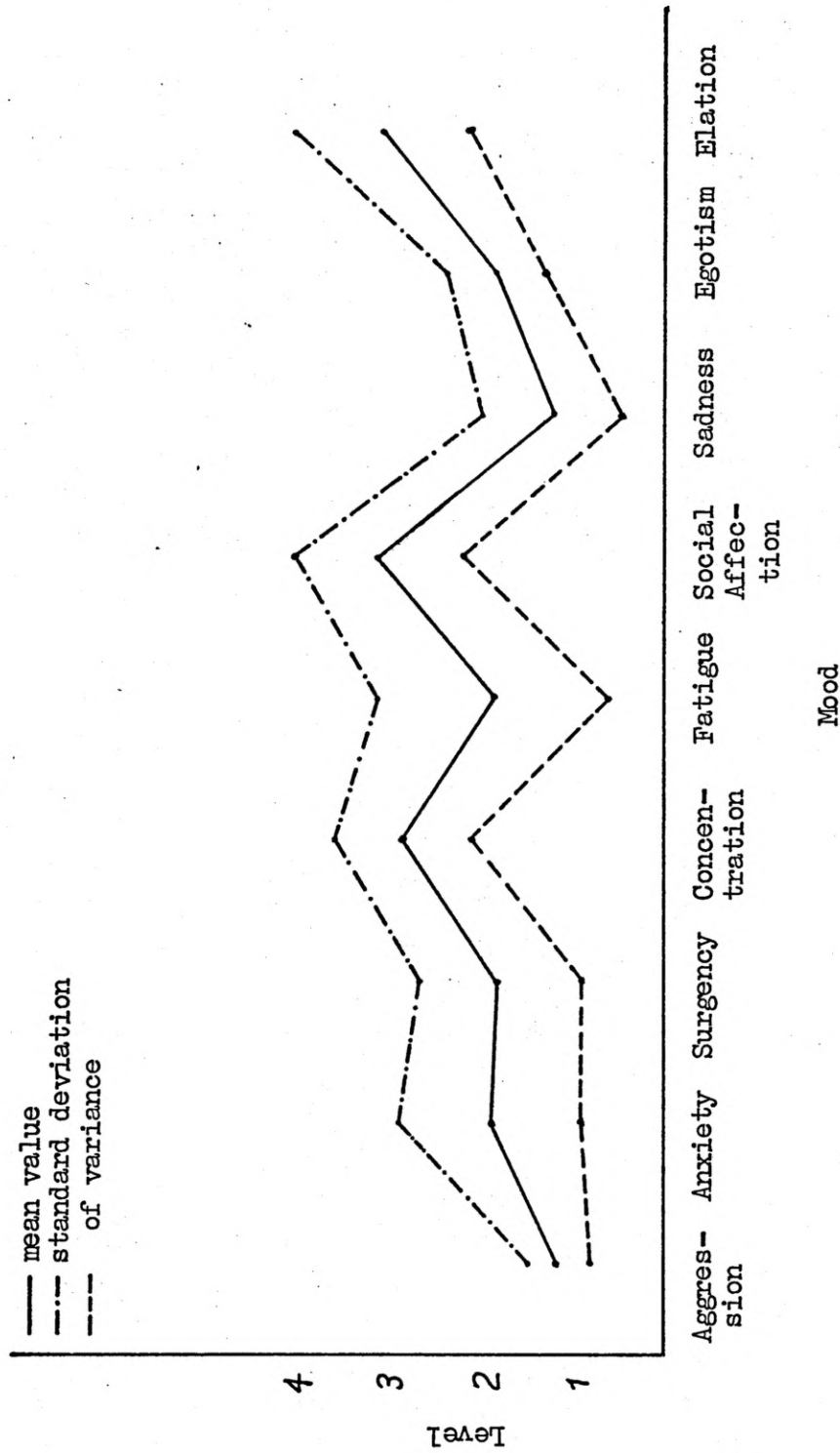


Figure 2

Mood Scale Levels for Primiparas for Third Day^a

^aUsed strictly to illustrate.

APPENDIX G (continued)

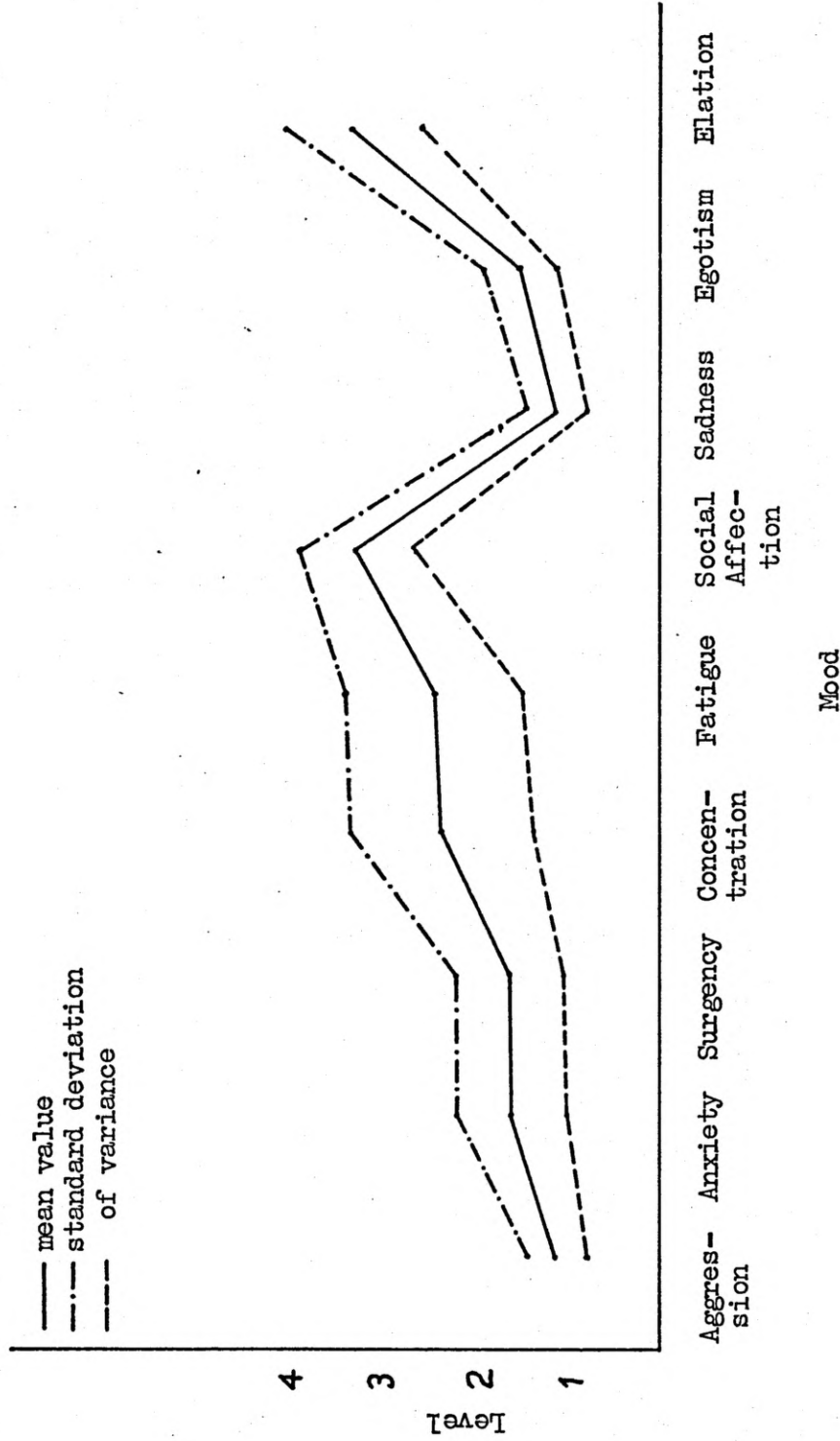


Figure 3

Mood Scale Levels for Primiparas for Fifth Day^a

^aUsed strictly to illustrate.

APPENDIX H

MOOD SCALE LEVELS FOR MULTIPARAS

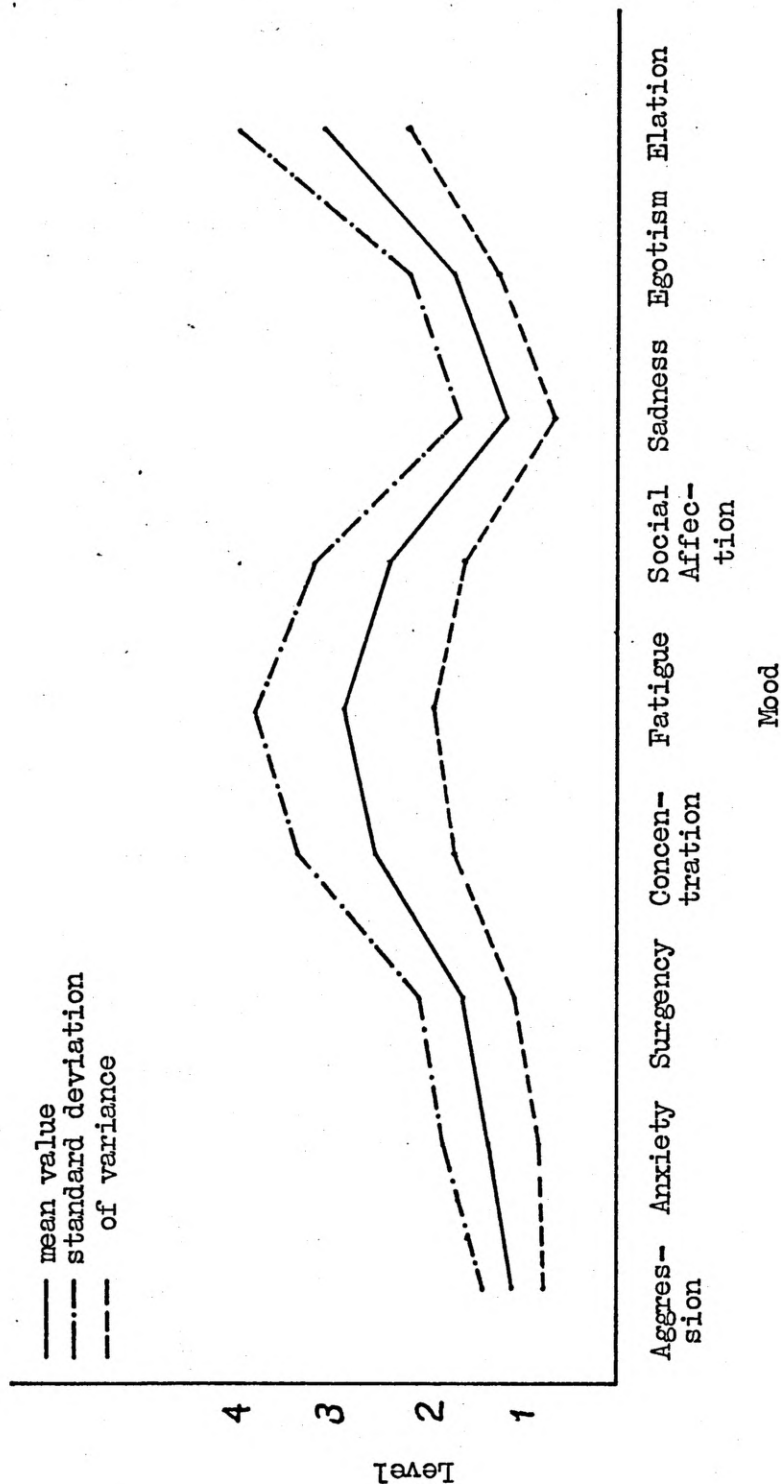


Figure 4

Mood Scale Levels for Multiparas for First Day^a

^aUsed strictly to illustrate.

APPENDIX H (continued)

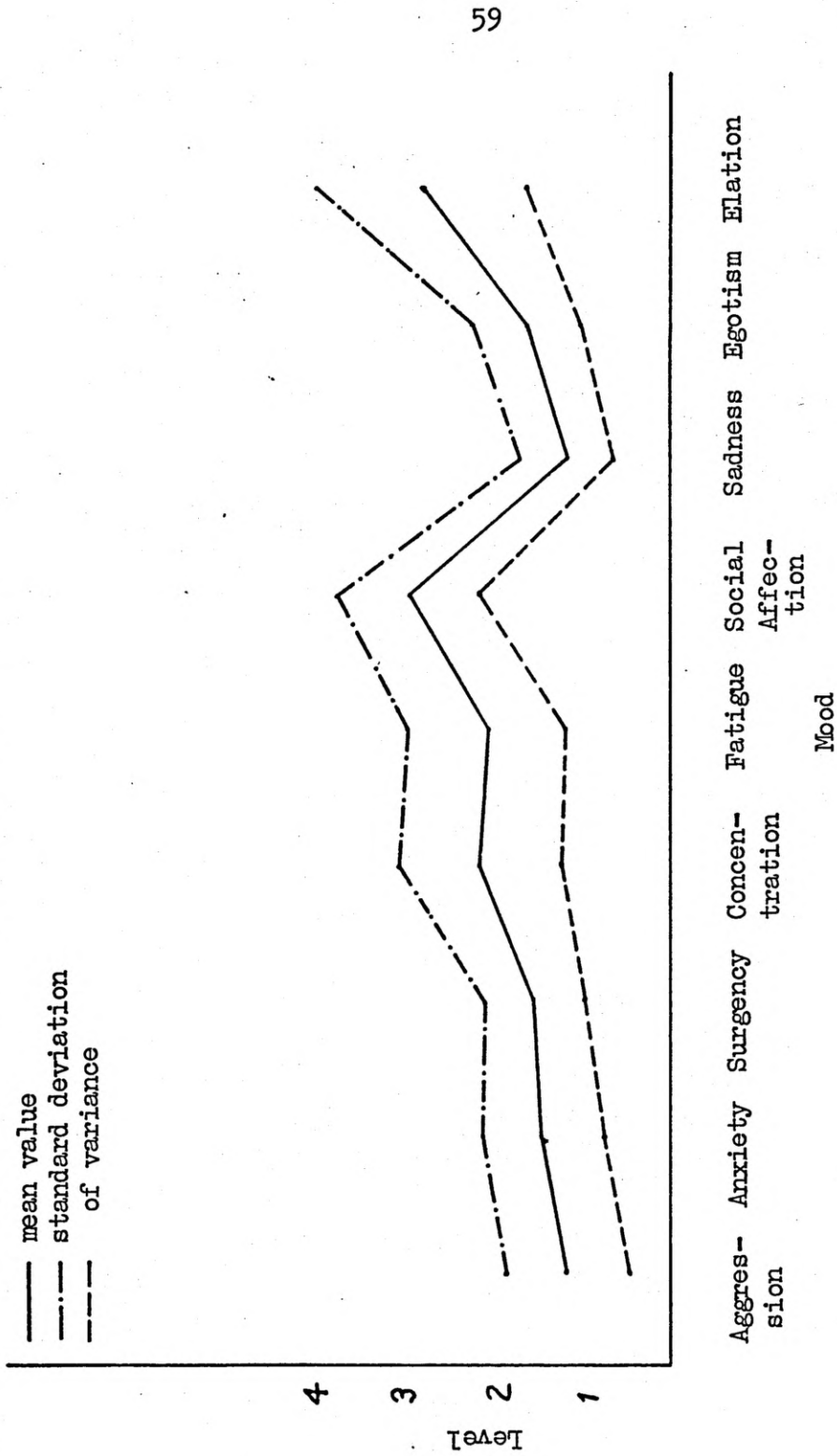


Figure 5

Mood Scale Levels for Multiparas for Third Day^a

^aUsed strictly to illustrate.

APPENDIX H (continued)

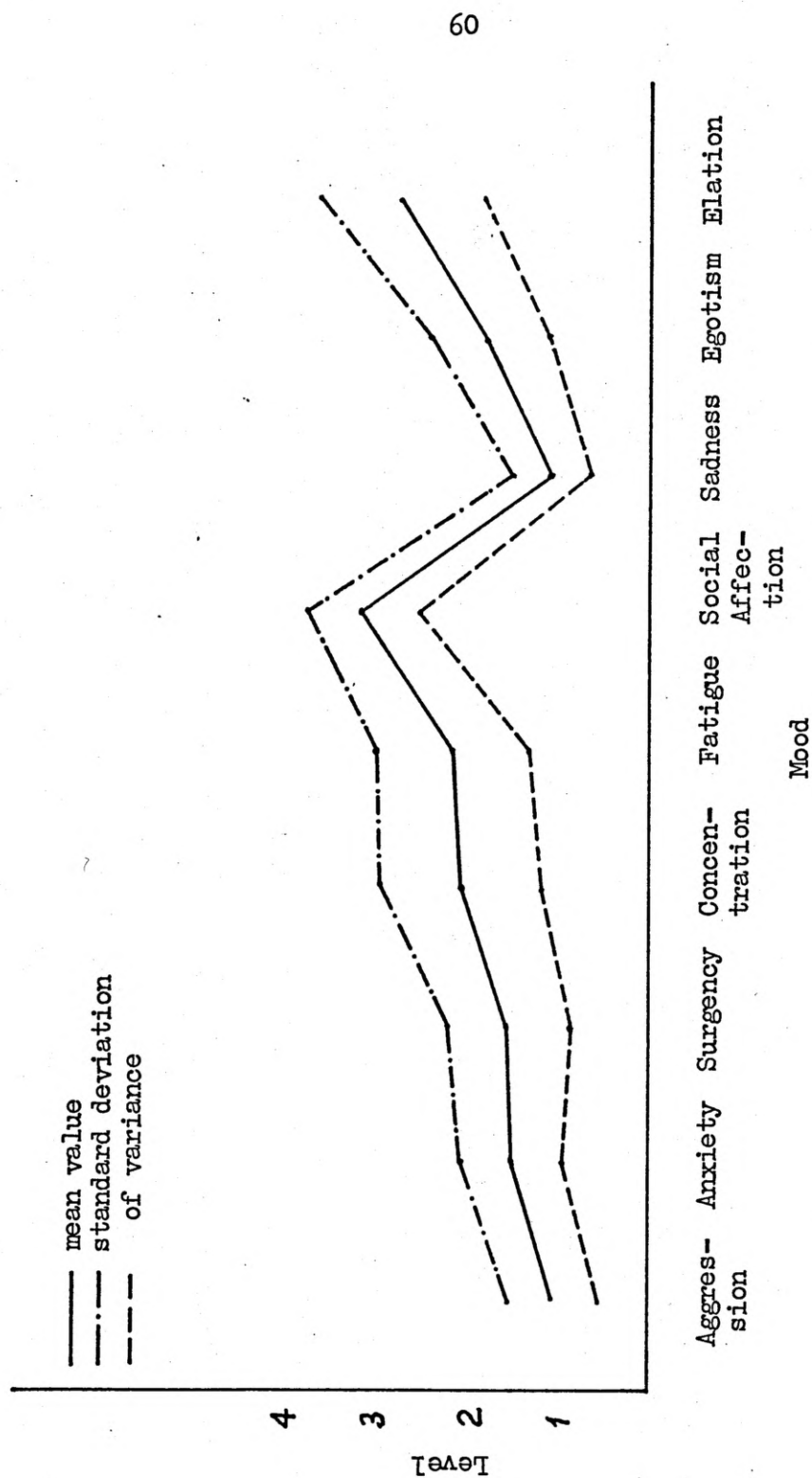


Figure 6

Mood Scale Levels for Multiparas for Fifth Day^a

^aUsed strictly to illustrate.