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MENSTRUATION AND AGGRESSIVE BEHAVIOR IN A CORRECTIONAL CENTER FOR WOMEN*

DESMOND P. ELLIS† AND PENELOPE AUSTIN‡

Oh! menstruating woman thou'rt fiend
From whom all mankind should be closely screened. (Ellis, 1937:13)

The belief that a menstruating woman may have harmful effects on others is not novel, nor is it confined to any particular type of society.¹ Almost two thousand years ago the Roman naturalist Pliny argued for the seclusion of menstruating women on the grounds that menstrual blood could, among other things, "dull a razor . . . kill a swarm of bees . . . make men lose their strength and . . . cause fishermen and huntsmen to take nothing." The danger and seclusion associated with menstruation are reflected in such euphemisms as "going outside," "the curse," "falling off the roof," and the beautiful Manus word *kekanbwot* (leg broken).² The connotation of danger combined with the universality of menstrual taboos raises an intriguing question: To what degree are such taboos justified on the basis of actual social behavior? Could it possibly be that one reason why menstruating women are avoided is simply because they are especially nasty at this time?

* The study presented here was supported by a local University Research Council grant, administered by the Institute for Research in Social Science, University of North Carolina, Chapel Hill. Institute members Peter Harkins and Charlette Barksdale deserve a special vote of thanks for their assistance with computer programming problems over a period of seven months. Finally, we wish to thank two persons—Mrs. E. Mc Cubbin, Director, North Carolina Correctional Center for Women and Mr. C. Wilson, Research Director, North Carolina Department of Corrections—without whose generous assistance this project could not have been initiated.

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¹ C. FORD & F. BEACH, PATTERNS OF SEXUAL BEHAVIOR 211-13 (1951); Janowsky, Corney & Kelly, *The Curse: Vicissitudes and Variations of the Female Fertility Cycle. Part II: Evolutionary Aspects*, 7 PSYCHOSOMATICS 283-87 (1966); Stephens, *A Cross-Cultural Study of Menstrual Taboos*, 62 GENETIC PSYCHOLOGY MONOGRAPHS 385-416 (1961).

² Novak, *The Superstition and Folklore of Menstruation*, 27 JOHNS HOPKINS BULL. 273 (1916); M. MEAD, MALE AND FEMALE (1949); H. TOUT, J. ROYAL ANTHROPOLOGICAL INST. 137 (1905).

A number of scholars have tried to answer this question. One of the most comprehensive attempts was undertaken by physiologist Frank Beach. On the basis of his review of the relations between hormones and behavior Beach concluded:

For many different vertebrate classes . . . various hormonal products have an effect upon aggressive behaviour.³

The major problem with this otherwise excellent work inheres in the absence of any evidence indicating that this empirical generalization specifically applies to human females. However, since Beach's book was published, evidence supporting this generalization has been accumulating. First, with respect to other-directed aggressive behavior, a number of examples serve to illustrate. Of all violent crimes committed by women in Paris in a given year, Cooke notes that 84.0% were committed by women who were menstruating.⁴ In a New York prison for women, Morton found that of the forty-two inmates convicted for violent crimes, twenty-six committed those crimes during the premenstrual week.⁵ At the more salubrious setting of an English girls boarding school, Dalton demonstrated that not only are "naughty" girls (girls with more than six offences per term) "naughtier" during menstruation, but also that older schoolgirls with legitimate disciplinary power (sixth form prefects), "give significantly more punishments during their own menstruation."⁶ In an attempt to determine the generalizability of her findings, Dalton conducted another study in an adult women's prison in England. Here, she discovered a similar pattern: Among inmates who had been reported for

³ F. BEACH, HORMONES AND BEHAVIOR 97 (1948).

⁴ Cooke, *Presidential Address: Differential Psychology of American Women*, 49 AM. J. OBSTETRICS & GYNECOLOGY 457 (1945).

⁵ Morton, Addition, Addison, Hunt & Sullivan, *Clinical Study of Premenstrual Tension*, 65 AM. J. OBSTETRICS & GYNECOLOGY 1182-91 (1953).

⁶ Dalton, *Schoolgirls' Misbehavior and Menstruation*, 2 BR. MED. J. 1647 (1960).

disorderly behavior more than once, 70.0% of further disorderly acts had taken place during the premenstrual or menstrual period.⁷

With regard to self-directed aggressive behavior, Riberio writes that of the twenty-six successful African and Indian female suicides that came to his attention, twenty-three were menstruating at the time.⁸ Further, on the basis of reports turned in by telephone operators working at the Los Angeles Suicide Prevention Centre, A. and M. Mandell found the incidence of suicide calls to be highest during the first four days (menses) of the cycle and next highest during the last four (pre-menstrual) days, $p < 0.001$.⁹

Finally, studies focusing on the relation between phases of the menstrual cycle and "psychic states" exhibit a pattern similar to that in studies on overt aggressive behavior. As early as 1942, Benedek and Rubenstein found from temperature reports and vaginal slides that when estrogen production was high, one important dynamic tendency was aggression.¹⁰ Since this early work, a number of studies on a variety of populations has arrived at similar findings—women tend to feel more irritable during the pre-menstrual and early menstrual phases of the cycle.¹¹

On both theoretical and therapeutic grounds the adequacy of the studies referred to above depends minimally upon:

(a) The stability of the menstrual cycle (*i.e.*

⁷ K. DALTON, THE PREMENSTRUAL SYNDROME 80 (1964).

⁸ Riberio, *Menstruation and Crime*, BR. MED. J. 640 (March, 1962).

⁹ Mandell & Mandell, *Suicide and the Menstrual Cycle*, J.A.M.A. 792-93 (1967). See also MacKinnon & MacKinnon, *Hazards of the Menstrual Cycle*, BR. MED. J. 555 (March, 1956).

¹⁰ M. BENEDEK, PSYCHOSEXUAL FUNCTIONS IN WOMEN 81 (1952) (Benedek and Rubenstein analyzed aggressive behavior in their subjects through "free associations" of patients during psycho-analytic therapy sessions). See also SWANSON, *Review of M.D. Benedek's Psychosexual Functions in Women*, 59 AM. J. SOCIOLOGY 517-18 (1953).

¹¹ Gottschalk, Kaplan, Glesser & Wignet, *Variations in Magnitude of Emotion: A Method to Anxiety and Hostility During Phases of the Menstrual Cycle*, 24 PSYCHOSOMATIC MEDICINE 300 (1962); Lamb, *Premenstrual Tension: EEG, Hormonal and Psychiatric Evaluation*, 109 AM. J. PSYCHIATRY 840-48 (1953); Landis, *Physical and Mental-Emotional Changes Accompanying the Menstrual Cycle*, PROCEEDINGS OF THE PACIFIC SOCIOLOGICAL SOCIETY, PULLMAN: RESEARCH STUDIES OF THE STATE COLLEGE OF WASHINGTON 155-62 (June, 1957); Moos, *Typology of Menstrual Cycle Symptoms*, 103 AM. J. OBSTETRICS & GYNECOLOGY 390-402 (1969); Paulson, *Psychological Concomitants of Premenstrual Tension*, 81 AM. J. OBSTETRICS & GYNECOLOGY 733-38 (1961).

were the respondents within that age bracket in which cycles are most stable, and was the data obtained on the basis of observation of at least three cycles per respondent?¹²

(b) The degree to which through-time observations on both the phase of the cycle and overt behavior and moods were made on a daily basis. Retrospective data, here as elsewhere, is notoriously unreliable.¹³

(c) The degree to which the self-reports of subjects are not relied on exclusively as measures of critical variables. This consideration is especially relevant where the self-reports concern negatively sanctioned attitudes and behaviors. Here as elsewhere, a multi-measurement approach is indicated.¹⁴ Beyond this, wisdom suggests that at least one of the complementary instruments measure actual social behavior in every day social settings.

While many of these studies emphasized the broader social relevance of their findings, not one met the minimal set of criteria indicated here. It is precisely because we believe that socially relevant knowledge may be acquired from studies in this problem area, that we emphasize the quality of the knowledge that accumulates. Will our test of an "old wives tale" provide a more reliable basis for social action? Here is how we set about making the test.

SETTING AND SUBJECTS

Females in North Carolina who receive a sentence of six months or more for criminal behavior are sent to the North Carolina Correctional Center for Women. It is the only prison for adult women in the state. In this institution, approximately 120 technical, professional and custodial staff share the responsibility for meeting the twin institutional goals of security and rehabilitation. At the time this study began, the Center housed 360 inmates in nine residential units.

From this universe, subjects were selected on the basis of the degree to which they fitted into all of the categories judged to be salient for the purposes of this specific investigation. The subject population was limited by several factors. First,

¹² Treloar, Boytin, Behn & Brown, *Menstrual Cycles*, 12 INT'L. J. FERTILITY 77-126 (January-March, 1967).

¹³ M. YARROW, D. CAMPBELL & R. BURTON, *CHILD REARING: AN INQUIRY INTO RESEARCH AND METHODS* (1968).

¹⁴ E. WEBB, R. SCHWARTZ & L. SECHREST, *UNOBTRUSIVE MEASURES* (1966).

because the menstrual cycle achieves its greatest stability among females aged 20 to 45 (65.1% of the total population), our subjects were required to fall within this range. Second, because between cycle differences vary for any given girl, stability requires that data from at least three cycles be obtained. For this reason, girls likely to be paroled or released within *four* complete months of the commencement of the project were excluded. Third, girls included in the study must have been experiencing a "non-pathological"-menstrual cycle. This meant that pregnant girls, girls recently taking drugs, or girls experiencing dysmenorrhea or amenorrhea were excluded. Finally, the fact that only \$1,000 was available for this study further restricted the number of girls actually selected, since the girls were paid for their cooperation on a daily basis. In all, forty-five (32.4%) subjects were randomly selected from an eligible pool of one hundred and thirty-nine inmates.¹⁵

DATA GATHERING PROCEDURES

The attempt to meet the stated objectives of this study required us to collect reliable data on:

- (1) actual dates of commencement and termination of at least three menstrual flows;
- (2) a variety of other symptoms (e.g., pain) and emotional moods (e.g., irritability) experienced daily during the three cycle period;
- (3) the daily frequency of overt aggressive acts emitted during the three cycle period.

The girls themselves provided the source for all three informational categories, and were the only available source of information on their menstrual condition. Every day at about six o'clock in the evening, each girl was given a prepared form to complete. When completed, this form was to be placed in a large envelope. The last girl to return her form sealed the large 12" x 14" envelope and it was then taken to the office of the guard captain. The Director of the Prison had ordered the guard captain and all female custodial staff not to allow the envelopes to be opened once they had been sealed. These precautions were taken and known to be taken by the girls in order to ensure the privacy of the information being communicated to us.

¹⁵ Forty-nine subjects were initially selected. One girl simply refused to continue the study three weeks after it began. Another girl left the prison for admission to a local hospital after completion of only one cycle. Two others were excluded because they were put in the punishment dormitory prior to the completion of two cycles.

The dichotomous nature of the wording of daily questions actually put to the girls may be explained by the need to provide an easily understood instrument. The mean IQ of the girls was 96 (90 for the inmate population). Only 7 of the 45 girls had actually completed high school. It was thus evident that level of measurement questions should in this case be subordinated to the need for them in order to avoid arousing anxiety in respondents whose motivation to continue participating in the study was essential.

So far as the girls were concerned, the ostensible reason for the study was an attempt to study the effects of changes in the climate and prison work tasks on the health and social behavior of the girls. Special questions were inserted to increase the credibility of the study. For each daily form completed and turned in, a girl received between five and seven cents. A weekly bonus was added to the sum actually earned if a girl turned in seven consecutive completed forms. In this way we were able to reduce the effects of missing data to negligible proportions.

Data listed under the third informational category relating to the daily frequency of overt aggressive acts was also obtained from the Daily Record Sheets of prison officers. As a part of their job, the prison officers kept a daily record of their observations on the behavior of girls under their charge. These were turned in to the administrative office. In addition, officers did record aggressive acts specifically for the purpose of this study. Both sets of records were examined at the end of the study.

The Daily Record Sheets were coded in a very simple way: Overt Aggressive behavior included actual physical and verbal attacks upon the person or other inmates (obscene language, threats, expressed wishes of harm). Because it was difficult to distinguish between "initiator" and "reactor" on the basis of these data, that distinction was abandoned.

The findings presented here are based on the analysis of 135 completed cycles (three per respondent, 45 respondents). In order to "line up" the menstrual cycles which vary in length, *i.e.*, to ensure that all cycles commence at menstrual phases, it was necessary to adjust each cycle to the length of a "normal" cycle of 28 days. This was done by applying following formula:

$$D_{ADJ} = \frac{D_1}{D_{1/2 \text{ total}}}$$

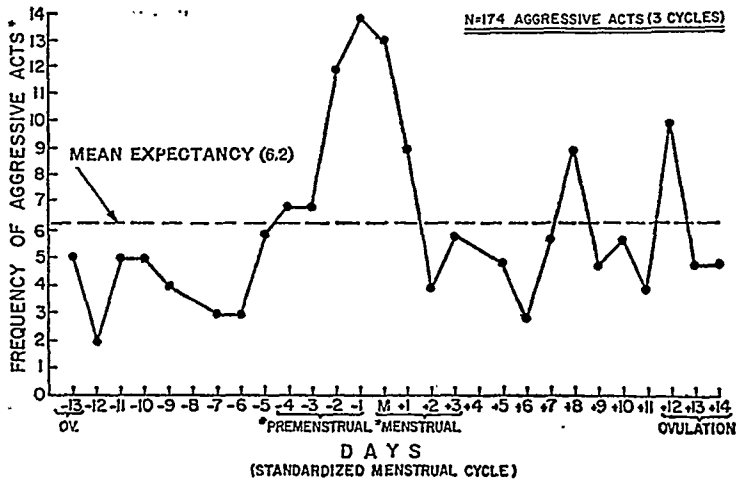


FIGURE 1.
Daily Frequencies of Total Inmate Aggressive Behavior.

Days to be defined as "pre-menstrual" were decided upon *prior* to an examination of the data.

* Observations of prison officers are based on three completed cycles. Thus the 13 aggressive acts recorded on day M are based on observations of 45 inmates on this day (3:00 p.m. to 11:00 p.m. shift) in each of three cycles.

where:

D_{ADJ} = adjusted cycle day

D_1 = given cycle day

$D_{1/2}$ = half the total number of days in the cycle¹⁶

A menstrual cycle is defined as involving minimally *three consecutive days of flow*. It turns out that the mean number of menstrual days is 5.0 (S.D. 1.3). Because of problems connected with "lining up" the dependent variable data with any given day of the menstrual cycle, cycles under 22 days in length or over 34 days in length were excluded.

RESULTS AND DISCUSSION

The data presented in Figure 1 show that variations in the frequency of aggressive behavior roughly approximate a Janus faced J-curve with the greatest number of aggressive acts occurring during the pre-menstrual and early menstrual phases (days -4 to +1) of the menstrual cycle. Of the eight days in which the number of aggressive acts exceeded the mean daily number of such acts expected under the null hypothesis, six were located in these two phases of the cycle. If there were in fact minor between-day differences, one would expect to find much smaller variations

¹⁶ A more complete explanation of this procedure will be supplied on request. The formula used here represents a modification of that used by Morris and Udry in 1969. The changed denominator reflects the fact that our primary interest is in the premenstrual and menstrual phases of the cycle.

around the mean value of 6.2 acts. Given the fact that these observations do not meet the criterion of independence, no attempt has been made to use one of a number of difference-of-means statistical tests to answer questions concerning the degree to which the between phase-differences are in fact statistically significant. We do believe that the differences found are of substantive importance. Looking at it another way, we observed that 41.0% (72) of the aggressive acts occurred during only two sevenths (8 of 28 days) of the time base. The breakdown of aggressive acts into physical and verbal categories in Figures 2(a) and (2b) reveals that the latter category accounts for about 64.0% of the aggressive behavior observed during the study. These figures depict a somewhat similar pattern for both classes of aggressive acts; twenty-six of 63 physical aggressive acts and 41.4% (46) of verbal aggressive acts occurred during the pre-menstrual and menstrual phases of the cycle.¹⁷

¹⁷ The relatively large number of aggressive acts recorded is partly a function of the fact that officers sometimes recorded behaviors which they did not observe themselves but which they learned about from other inmates. Thus, one aggressive act reported to two officers would be recorded as two aggressive acts. The reader should also note that over ninety-five per cent of the physical aggressive acts were relatively minor in nature—pushing, pulling, tripping, pinching and so on. These behaviors are however consistent with the definition of aggression used in this study—anything which hurts the feelings or the person of another inmate or free person. Neither of these facts throws into question the general patterning of aggressive behaviour through various phases of the menstrual cycle, and it is

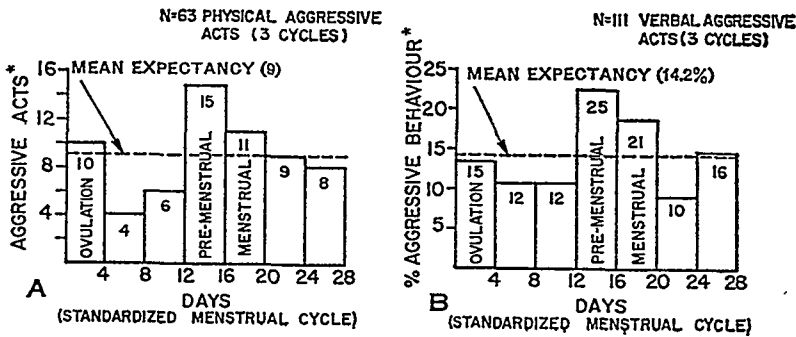


FIGURE 2(a).
Physical Aggression.

* Data here are daily observations of prison officers on 3:00 p.m. to 11:00 p.m. shift.

FIGURE 2(b).
Verbal Aggression.

* Data here are daily observations of prison officers on 3:00 p.m. to 11:00 p.m. shift.

These findings lead us to conclude that the subjects of this study, normally menstruating women who happen to be in prison, do indeed tend to be nastier toward others during the pre-menstrual and menstrual phases of the menstrual cycle. Before proceeding further, it would be instructive to consider one or two possible objections to this conclusion.

First, how can one be sure that the observed pattern of aggressive acts is not primarily a function of the behavior of a few of the most aggressive girls? While this objection is a valid one, given the relatively small number of girls and aggressive acts, it is not sustained by an actual examination of the distribution of acts across subjects. Although two of the "most aggressive" girls in the Centre were included as subjects, both of these girls ended up in the punishment dorm prior to the completion of two cycles. They were therefore eliminated from the study.

A second basis for questioning this conclusion may be our failure to provide as dependent variable data (aggressive acts) the daily responses of the subjects themselves as well as the observations of prison officers. Certainly our intention was to utilize data from both sources. However, upon examining the questionnaire responses of the inmates, it soon became clear that they simply did not trust us sufficiently to acknowledge, on a form through which they could be identified, the commission of acts to which relatively severe negative sanctions were attached. Thus, despite our strenuous efforts to induce a sense of trust, we found

precisely this patterning that we have taken as our dependent variable.

little or no variation in answers to such aggression and sex questions as: Hit anyone today? Cuss anyone out today? Had sex relations today? On the basis of the confirmation of the hypothesis in post-study interviews, we decided to utilize as data only answers to those questions which inmates stated would "not get them into trouble." Questions used dealt mainly with "mood," the weather, and their physical condition.¹⁸

Findings from a number of studies indicated that marked increases in aggressive behavior also occur during the ovulatory phase of the cycle.¹⁹ This study cannot be counted among these. Figure 1 shows that only on day twelve did the observed number of aggressive acts exceed the mean number of such acts expected on any given day. Figure 2(a) reveals slight departures from expected mean values for both physical and verbal aggressive acts. For physical acts, the departure is in the predicted direction, while for the verbal acts it is not. Here we remind the reader of the rather weak criterion (chance alone) against which we are assessing very small departures. Also, while we are fairly confident of the location of the ovulation within the four day ovulatory phase, the fact that we obtained no direct measure of ovulation has to be kept in mind.

¹⁸ Actual "trust procedures" such as sealing the envelope used in this study evolved from discussions with inmates who were pre-test subjects. The effectiveness of these procedures in eliciting nonstrategic responses to this latter group of questions inheres in the similarities found between the response patterns of our girls and other groups of women in other settings who have answered such questionnaires anonymously.

¹⁹ See, e.g., K. DALTON, *supra* note 7; Mandell & Mandell, *supra* note 9; Moos, *supra* note 11.

In evaluating these results, there are two approaches which might be taken, the *endocrinologic* and the *social psychological*. In general, hormonal causation advocates—invariably persons trained in medicine—emphasize either the role of the adrenal, ovarian, and pituitary classes of hormones²⁰ or the relations between different classes of hormones²¹ on the process by which one class of hormones is converted into another.²² Researchers oriented toward social psychology, such as the authors, emphasize the role social learning plays in the genesis of meanings which become associated with various phases of the menstrual process.²³ One set of meanings may simply have to do with the degree to which the girl has learned that aggressive behavior is more likely to obtain for her what she wants or less likely to be punished during certain phases of the menstrual cycle. Since this study was designed primarily to discover whether aggressive behavior varies with phases of the menstrual cycle, significant contribution to the endocrinologic-social psychological debate should not be expected here.²⁴ Nevertheless, the daily responses of inmates to "irritability," "pain," and "sex feeling" questions may shed some light on the relation between those three variables and aggressive behavior. Figure 3 does in fact show that the girls tend to be more irritable during pre-menstrual and menstrual phases of the cycle, precisely the same phases during which aggressive acts were most frequent. However, it is also true that (1) girls who were most irritable were no more aggressive than girls who answered "no" to the question "feel touchy or irritable today?" and (2) a day-by-day within-phase analysis revealed little similarity in the patterning of irritable moods and aggressive acts.

In the case of sex feelings, the matter is a little

²⁰ Suarez-Murias, *The Psycho-Physiologic Syndrome of Premenstrual Tension*. INT'L. RECORD OF MEDICINE 47:5-86 (November, 1953).

²¹ K. DALTON, *supra* note 7, at 59.

²² A. Mandell & M. Mandell, *Hormonal and Metabolic Correlates of Behavioral States in Man*, 1969 (unpublished composition, Department of Psychiatry, Center for Health Services, University of California at Los Angeles).

²³ P. Austin, *The Etiology of Premenstrual Tension and the Contribution of Pre-Menarcheal Education*, 1968 (unpublished mimeo, Department of Sociology, University of North Carolina); Merritt, *Menstruation and Crime*, BR. MED. J. 260 (January 27, 1962). See, e.g., C. FORD & F. BEACH, *supra* note 1; Paulson, *supra* note 11; Suarez-Murias, *supra* note 19.

²⁴ A social psychological experimental study designed explicitly to examine social role learning is commencing this fall.

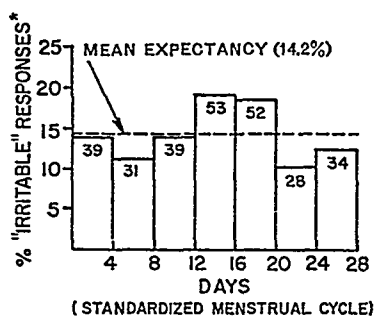


FIGURE 3.
Irritability.

* Data here are daily inmate responses to the question: Feel touchy or irritable today?

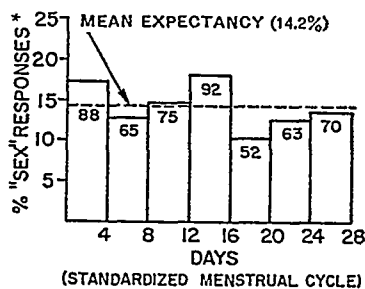


FIGURE 4.
Sex Feeling.

* Data here are daily inmate responses to the question: Feel like having sex today?

more complicated. There was a tendency for girls who felt "quite a bit or very much like having sex relations" to be slightly more aggressive. It was precisely on those days in which the number of girls responding this way was highest (days -2 and -1) that frequency of aggressive acts was greatest (see Figure 1). It was, however, also true, as Figure 4 indicates, that the percentage of girls responding to their desires for sex relations as "quite a bit or very much" was almost as high during the ovulatory phase. Yet, as Figure 1 indicates, the incidence of aggressive acts was relatively low on three of the four days in this phase.

Working with a variety of species of animals, Azrin and his co-workers have presented a wealth of data supporting a pain-elicited, or non-instrumental, conception of certain classes of aggressive behavior.²⁵ Is the aggressive behavior observed in this study subsumable under this class of aggressive behaviors? The similarity in the overall patterning of pain feelings (Figure 5) and aggressive

²⁵ Azrin, *Pain and Aggression*, 1 PSYCHOLOGY TODAY 27-33 (1967).

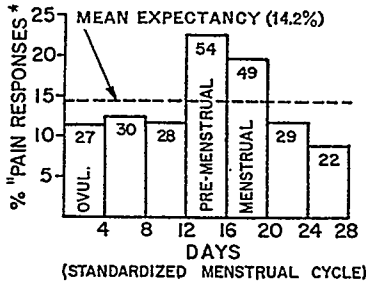


FIGURE 5.
Pain.

* Data here are daily inmate responses to the question: Feel any pain today?

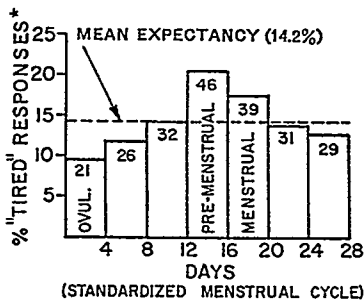


FIGURE 6.
Lethargy.

* Data here are daily inmate responses to the question: Feel tired today?

acts (Figures 2(a) and 2(b)), combined with the fact that girls who experience moderate amounts of pain tend to be slightly more aggressive, lends itself to the formulation of an affirmative albeit highly tentative answer.²⁶

One other psychic/physical condition also found to be positively associated with aggressive acts during the premenstrual and early menstrual phases was lethargy. This was indicated by responses to the question, "Feel tired today?" Figure 6 suggests that the *process of detection* rather than, or combined with, the *process of instigation* may be an important explanatory variable. It may be that the girls were equally aggressive during all phases of the cycle, but that because of the carelessness induced by fatigue, aggressiveness was more easily detected during these phases (specifically, days -2, -1, and M) of the cycle.²⁷ Relevant here is the knowledge

²⁶ The relationship between pain and aggressive reactions is probably curvilinear—too much pain or too little pain evokes less aggressive behavior because of competing responses.

²⁷ K. DALTON, *supra* note 7.

that the sole sources of dependent variable data, aggressive acts, were in fact persons for whom the process of detecting rule infringements was an important performance dimension of their occupational role.

In sum, our findings indicate that the frequency of aggressive behavior does increase during the pre-menstrual and early menstrual phases of the cycle. Feelings of irritability and frustration of sexual urges do not appear to explain these increases. Feelings of non-specific body pain or discomfort do appear to be related to the increasing frequency of aggressive acts. Nonetheless, we cannot rule out the possibility that the girls are not really more aggressive but only more careless or less concerned with rewards and punishments during the menstrual phase of the cycle. While the apparent lack of a positive association between either sex frustration and aggressive behavior or irritability and aggressive behavior suggests that the behavior itself may be conceived of in "instrumental" (or operant) terms, the pain-aggression relationship suggests that not all aggressive behavior is equally influenced by the consequences which follow its emission; some aggressive acts are "reflex-like" reactions, or respondents.²⁸

IMPLICATIONS

Although not limited to a prison setting, the implications of this study are perhaps most directly relevant in the type of social setting in which it was conducted. In such female "people processing" organizations, women interact with other women and a small proportion of these women are incumbents of social roles to which formal decision-making authority is attached. Both the interaction and decision-making processes have implications for the effectiveness of the organization in terms of the degree to which it approximates the realization of its intra-prison (social order) and societal/community (rehabilitation, security) goals. How can knowledge of the findings

²⁸ For an excellent discussion of the distinction between operant and respondent classes of behavior, and of the processes by which respondents may become operants, see S. BIJOU & D. BAER, *CHILD DEVELOPMENT* (1961). Among well-known theorists with primary interests in aggressive behavior, Berkowitz, *The Concept of Aggressive Drive: Some Additional Considerations*, 2 *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY* 301-29 (L. Berkowitz ed. 1965), focuses exclusively on "non-instrumental" aggressive behavior, as do almost all frustration-aggression theorists, while A. BUSS, *PSYCHOLOGY OF AGGRESSION* (1961) is much more concerned with instrumental aggression.

of this help improve social interactional and decisional outcomes within prisons?

First, to the extent that the outcome of interaction between a prison officer and an inmate has been adverse to both, and to the extent that "intentional meanness" is used by both as an explanation of the behavior of the other, the results of this study might be relevant in that it may help each interactant understand that some biological processes over which *neither* has control may be partly responsible for their behavior. Such explanations may help dissipate the angry feelings of revenge or spite which may otherwise accumulate and assume an even greater explosive potential over time. Where adverse direction of the interaction is one way, as in punishments meted out by disciplinary committees, an essential pre-decision item of information should be the menstrual condition of the prison officer who reported the girl, the menstrual condition of the girl herself, and that of the female members of the committee. Great care, however, should be taken to avoid the creation of a situation in which either inmates or officers come to believe that during certain phases of the cycle they can "get away with anything." In this discussion, we have assumed that the effect of adverse interaction on the prison effectiveness is mediated by the explanation provided by both interactants for the behavior of each.

Intra-prison effectiveness is also a function of the *numbers* of aggressive interactions. The results of this study suggest that one way of reducing the frequency of aggressive inmate/inmate or inmate/officer interactions is to put in temporary seclusion those girls whose past behavior justifies their requests to be alone just prior to or during menstruation. Alternatively, decisions may be made in such a way that girls who become markedly more aggressive during these phases of the cycle are placed in prison jobs and accommodations requiring little interpersonal contact with others. In the context of jobs and accommoda-

tions, similar considerations should apply in the case of prison officers. This would require the completion of a daily menstrual log by inmates and prison officers, and should be made a part of administrative routine.

The number of aggressive interactions may also be reduced by the administration of pain-killing drugs and various other hormones and chemicals whose ingestion rectifies the physiological conditions hypothesized to "cause" aggressive behavior in the individual case under consideration.

To this point, our discussion of implications has been limited to processes of socialization within prisons. We now turn to a consideration of the relation between the menstrual process and behavior which puts girls into prison or which results in the infliction of bodily harm or death on themselves or others. We shall restrict our attention to intra-familial aggressive behavior. In this context, the President's Commission on Law Enforcement and the Administration of Justice noted that in 1969 intra-familial quarrels were "the single greatest cause of homicides in the U.S."²⁹ The F.B.I. reports that every fifth policeman who is killed in the line of duty dies in the process of breaking up a family fight.³⁰ In the case of the woman who kills or maims her husband, lover, child or other relative or who is killed or maimed,³¹ this study suggests that it is important to ask the question: What was her menstrual condition at the time of the event?³²

²⁹ REPORT OF THE NATIONAL COMMISSION ON THE CAUSES AND PREVENTION OF VIOLENCE, VIOLENT CRIME: THE CHALLENGE OF OUR CITIES, 43, 44 (1969); Sullivan, *Violence, Like Charity, Begins at Home*, N.Y. Times, Nov. 24, 1968, §6 (Magazine), at 57.

³⁰ Sullivan, *supra* note 28.

³¹ Schultz, *The Victim-Offender Relationship*, in R. HARTOGS & E. ARTZ (eds.), *VIOLENCE: CAUSES AND SOLUTIONS* 361-69 (1970); Wolfgang, *Victim-Precipitated Criminal Homicide*, 48 J. CRIM. L.C. & P.S. 1-11 (1957).

³² For an extended discussion of the relationship between menstruation and violent crime see O. POLLAK, *THE CRIMINALITY OF WOMEN* (1950).