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Sexual Responding of "Nonrapists" to Aggressive Sexual Themes: Normative Data

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The present study presents data relevant to the sexual responding to aggressive cues of a large sample of nonrapist males recruited from the community. Two hundred three subjects received physiological assessment of sexual arousal to heterosexual and rape stimuli. Results indicated that under instructions not to interfere with sexual responding, approximately 80% of the nonrapists would be correctly classified, which was significantly different from chance. However, under instructions to suppress arousal, classification was no better than chance. The rape index was not related to age, socioeconomic status, sexual experience, or amount of arousal shown in the laboratory. However, there was a small but significant relationship to IQ. Overall, the data suggest that for instructions not to interfere with responding, the error rate seen in this larger-scale sample was equivalent to that in previous studies using smaller normative samples and that classification in general is not biased by the subject characteristics measured in this study.

KEY WORDS: rape; sexual arousal; sexual assessment.

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INTRODUCTION

The purpose of the present study is to provide large-sample normative data on physiological measures of sexual responding to aggressive sexual themes. This report is an outgrowth and reanalysis of data from a study investigating the role of attitudinal, personality, social perception, and sexual arousal variables to coercive sexual behavior in a normative community sample (Murphy, Coleman, & Haynes, 1985; Murphy, Coleman, Haynes, & Flanagan, 1982). It is felt that such data are important given the increased use of physiological measurement procedures both to determine the classification of sex offenders and to monitor treatment outcome.

Previous studies with clinical populations have shown that erection responses to aggressive sexual themes reliably separate rapists from nonrapists (Abel, Barlow, Blanchard, & Guild, 1977; Abel, Blanchard, Becker, & Djenderedjian, 1978; Barbaree, Marshall, & Lanthier, 1979; Hinton, O'Neill, & Webster, 1980; Quinsey & Chaplin, 1982; Quinsey, Chaplin, & Varney, 1981). A number of these studies using the rape index have shown the correct classification of approximately 80% of normals and rapists (Abel *et al.*, 1978; Quinsey *et al.*, 1981). However, in the above studies, the majority of nonrapist samples was relatively small or was nonrepresentative of the general population. This is extremely important given more recent data that have shown that under certain conditions, many nonrapists report arousal to and respond physiologically to rape stimuli (Malamuth, 1981; Malamuth & Check, 1983). These studies using larger samples of normals, however, have not in general reported absolute arousal levels or presented data in terms of the rape index that would allow clear comparison to the clinical studies. In addition, these studies employing normals by Malamuth and his colleagues have been limited to studies of college-student populations.

Because of the limited sample sizes in previous literature, data are almost nonexistent in terms of what factors may confound the interpretation of sexual arousal measures in clinical and nonclinical populations. The importance of factors such as age, IQ, socioeconomic status (SES), and extensiveness of past sexual experience in responding to aggressive themes has received no attention. There are also few data available regarding the absolute amount of arousal that should be considered indicative of sexual responding. G. G. Abel (personal communication, 1983) has excluded all subjects in which responding is less than 10% of a full erection, while Laws (personal communication, 1984) has suggested that responding below 20% be considered error. In addition, many authors recommend the use of arouse and suppress instructions in the assessment of sexual offenders (Abel, Becker, & Skinner, 1980; Laws & Osborne, 1983), although few data exist on the value of such instructional sets in classification.

The present study was designed to attempt to provide data in areas the literature has not addressed. Specifically, the present study attempted to address three major issues. The first was to provide basic descriptive data on arousal patterns of normals to aggressive sexual themes. Data are presented in terms of absolute arousal and the often-used rape index under both the arouse and the suppress instructional sets. Second, the study addressed the impact of the absolute amount of sexual arousal measured on classification. Finally, the possible relationship of confounding variables such as IQ, age, SES, and previous sexual experience on sexual responding to aggressive sexual themes was evaluated.

METHOD

Subjects

Data for the present study are based on the analysis of the results from 203 males. In addition to these 203 subjects, 5 subjects were excluded who admitted to previous convictions for rape, 3 subjects were excluded whose predominate past sexual experiences were homosexual in nature, and 2 subjects were excluded whose mental status during the initial screening interview raised doubts about their ability to give informed consent. A number of recruitment procedures were employed including personal contacts of staff members and acquaintances of study participants and flyers sent to local industries, unions, prison guard associations, and hospitals. The most successful recruitment source was through acquaintances of study participants.

The mean age of subjects was 31.5 years, with the majority (58%) of subjects being in the 25- to 34-year-old age range. Seventeen percent of the subjects were below that age range but 25% were above that range. The mean IQ for the sample was 97.5 (SD = 16.774). Approximately 55% of the subjects were Black and 38% Caucasian, with the remainder being distributed across other racial groups. Approximately 59% of the subjects were high-school graduates or high-school graduates with some college work, while 20% of the subjects had less than high-school degrees and approximately 22% were college graduates or greater. Although attempts were made to recruit a representative sample, there was a bias in the sample toward lower middle-class income groups, with 52.8% of the sample earning less than $10,000 a year and approximately 30% of the sample currently unemployed. However, 18% of the subjects made more than $25,000 a year. The high unemployment rate reflects a large number of volunteers who came from recently closed large manufacturing plants in the Memphis area. Eighteen percent of the subjects admitted to prior convictions for nonsexual crimes.

This group reported being sexually experienced, with an average of 50 female sexual partners per study participant, a frequency of intercourse of 2.8 times per week, and a frequency of masturbation of 1.6 times per week. Subjects were also asked through a questionnaire their experiences with various levels of coercive sexual behavior. Eighteen percent of the subjects admitted to forcing a female to do something sexual she did not want to, 43% admitted to touching a female in the genital area against her will, and 55% admitted to kissing a woman against her will. The frequency of coercion observed in this group is quite similar to that in previous reports of sexual coercion in college-student samples (Kanin, 1969; Koss & Oros, 1982).

Equipment and Procedures

Initially, all subjects completed a screening interview where general study procedures were described and a brief psychosexual and psychosocial history was collected. At the end of data collection, all subjects were debriefed and paid $35 for their participation. In addition to the physiological measurement described below, subjects also completed, as part of a larger-scale study, the Otis Quick Scoring Mental Abilities Test, the Eysenck Personality Inventory, the Survey of Heterosocial Interactions, a measure of social perception developed for this study, a demographic/sexual history questionnaire, and the scales developed by Burt (1980) measuring attitudes toward rape, toward women, and toward aggression. Only the results of the Otis Quick Scoring Mental Abilities Test and specific items from the demographic/sexual history questionnaire are used in this report.

Stimuli for the present psychophysiological assessment included the 2-min videotaped rape and heterosexual stimuli previously developed by Abel *et al.* (1978) in addition to lesbian films which were designed to control for novelty. The rape stimuli are a set of tapes depicting a simulated rape, with the male clearly using force to have intercourse with a woman. The male is seen forcing the woman to a floor or to a bed, hitting the woman, and ripping or forcibly removing her clothes. The woman reacts to the rape by an expression of fear and attempts to resist the rape by shoving the male away and hitting him. The heterosexual tape depicts simulated intercourse between a male and a female. The majority of sexual behaviors is initiated by the female so there can be no question of force being used by the male. During the debriefing interview, all subjects were able to differentiate the two types of stimuli. The lesbian films were 2-min segments from a commercially available "pornography" film depicting two nude females engaged in a variety of sexual behaviors.

In total, eight stimuli (two lesbian, two heterosexual, and four rape) were presented in a preset random order under two instructional sets (Abel *et al.*, 1978). Four rape stimuli were employed in the study so that data would not be biased by the possibility of one artificially elevated response to rape. Under the arouse instructions, subjects were specifically told, "On the next tape, you are to become aroused to what you see. This means that you are free to let yourself go and become involved with what is presented." During the suppress instructions, subjects were told, "On the next tape, you are to suppress your arousal to what you see. This means to attend to what is presented but try not to get an erection." All subjects were instructed prior to entering the lab that they should not attempt to interfere with the response by touching their penis or moving from the waist down. Interstimulus intervals were a minimum of 2 min or until the erection response returned to baseline or returned to at least 3 mm of baseline measured on the polygraph chart for 30 sec. Although no specific adaptation session was employed, all subjects viewed a 2-min nature film in the laboratory directly prior to the presentation of the sexual stimuli and then rated their current mood as part of an ongoing evaluation of the relationship of mood to sexual arousal. In addition, the first sexual stimulus presented for each subject was a lesbian stimuli, which was not used for the current data analysis and allowed for further adaptation to the laboratory.

All erection responses were monitored via a metal-band strain gauge (Barlow, Becker, Leitenberg, & Agras, 1970) and recorded on a Grass polygraph equipped with a 7P1F amplifier and a 7DAF driver amplifier. The driver amplifier was calibrated using standard Grass calibration procedures. The 7P1F preamplifier was set for DC input, with the sensitivity switch set at 0.2 mV/cm. Calibration was accomplished by placing the transducer on a cylinder with a diameter of 1.5 in. and adjusting the 7P1F sensitivity so that a 30-mm pen deflection was observed on the polygraph chart. Subjects then placed the transducer directly behind the glans of the penis in the privacy of the laboratory. After placing the transducer, the technician adjusted the chart pens to baseline using the balance voltage controls of the 7P1F preamplifier. Technicians were in verbal contact via an intercom system with subjects throughout the study but were not in visual contact. All erection responses were converted to percentage full erection as recommended by Laws and Osborne (1983) for data analysis to control for differences in penile size. Full erection was determined through subjects' self-report of 100% erections. If subjects did not report a full erection during the presentation of the 2-min stimuli used during the actual study, they were exposed to an extended explicit heterosexual film following completion of the study. If subjects at that point still had not established a full erection, they were instruct-

ed to remove the transducer, stimulate themselves to a full erection, and then replace the transducer. In approximately 5% of the subjects where a full erection could not be achieved, a full erection was interpolated from the largest erection response measured and their concomitant self-report estimate of that erection response.

The subjects also received a second laboratory session, at least 24 hr following the first laboratory session, where they were preexposed to a tape designed to elicit anger. The data from the second laboratory session are not presented here since the procedure is not standard for most clinical projects and is not similar to previous research methodology in this area. In addition, throughout all laboratory sessions, other physiological measures including skin resistance response, pulse amplitude, pulse volume, and respiration were also recorded. Analysis of these data indicated no differences between stimulus type and instructional set, therefore, these data are not discussed further.

RESULTS

Table I presents the frequency of subjects showing various percentage erections across the two instructional sets. Although the majority of subjects does evidence erection responses to rape stimuli less than or equal to 40%, a substantial minority (21.2%) shows responding to aggressive sexual themes of greater than 60% erection. However, since sexual responding to aggressive themes may be correlated with overall sexual arousal, Table II presents a derived measure of relative arousal to rape vs. arousal to mutual stimuli. These data present the rape index defined as the percentage of arousal to rape divided by the percentage of arousal to mutual stimuli (Abel *et al.*, 1977, 1978). This index has been found to be valuable in separating normals from rapists (Abel *et al.*, 1977, 1978; Quinsey *et al.*, 1981) and is presented for instructions to become aroused and instructions to suppress arousal.

Table I. Number and Percentage of Subjects Showing Various Levels of Sexual Arousal to Mutual and Rape Stimuli Across Instructional Sets

Percentage full erection	Mutual				Rape			
	Suppress		Arouse		Suppress		Arouse	
Less than 21	58[a]	(28.6)[b]	26	(12.8)	56	(27.6)	71	(35.0)
21-40	52	(25.6)	31	(15.3)	57	(28.1)	52	(25.6)
41-60	30	(14.8)	46	(22.7)	37	(18.2)	37	(18.2)
61-80	31	(15.3)	46	(22.7)	38	(18.7)	32	(15.8)
81-100	32	(15.8)	54	(26.6)	15	(7.4)	11	(5.4)

[a]Number.
[b]Percentage.

Table II. Number and Percentage of Subjects Showing Various Rape Indexes Across Instructional Sets[a]

Rape index value	Rape index/suppress instruction		Rape index/arouse instruction	
Less than .8	71[b]	(35.3)[c]	121	(59.9)
.8–.89	19	(9.4)	17	(8.4)
.9–.99	19	(9.4)	19	(9.4)
1.0–1.09	13	(6.5)	21	(10.4)
1.1–1.19	11	(5.5)	3	(1.5)
Greater than or equal to 1.2	68	(33.8)	21	(10.4)

[a]Subjects were excluded from this table when their response to mutual stimuli equaled zero because of division by 0.
[b]Number.
[c]Percentage.

Again, although the majority of the subjects does demonstrate, at least for the rape index under arouse instructions, indices below one, a sizable minority still shows indices within levels that would be defined as rapists in clinical studies.

To investigate further the ability to classify subjects appropriately, Table III presents the number of subjects with indices of one or above and the number of subjects with indices below one across different minimal levels of arousal for inclusion. These represent the percentage erections required to mutual and/or rape stimuli for the subjects' data to be included. Five levels are included in Table III, from 0 to 40%. Chi-square analysis indicates that there is no difference in the accuracy of classification for the rape index under suppress and arouse instructions across the various levels of inclusion. However, the rape index under arouse instructions led to better than chance

Table III. Percentage of Subjects Correctly Classified[a] Using Various Minimum Levels of Absolute Arousal for Inclusion Across Instructional Sets

Minimum level of absolute arousal	Percentage	
	Rape index/suppress instruction	Rape index/arouse instruction
0	54	78
10	55	76
20	56	79
30	58	80
40	60	80

[a]Subjects with a rape index of less than 1 were considered correctly classified.

classification ($\chi^2 = 58.71$; $p < .001$; df = 1), while this was not true for the rape index under suppress instructions.

Because of the high rate of misclassification of subjects with the suppress index, these data were further analyzed via an instructions (arouse vs. suppress) × stimuli (rape vs. mutual) totally within-subject analysis of variance (BMDP2V; Dixon, 1981). There were significant main effects for instructions ($F = 67.34$; $p < .001$; df = 1, 202) and stimuli ($F = 25.52$; $p < .001$; df = 1, 202) which were embedded in a significant instructions × stimuli interaction ($F = 71.68$; $p < .001$; df = 1, 202). The mean percentages erection for the above conditions were as follows: mutual/arouse, 58%; mutual/suppress, 44%; rape/arouse, 37%; and rape/suppress, 40%. This pattern indicates that subjects evidenced more suppression to heterosexual stimuli when instructed to suppress than to deviant stimuli. This was supported by Newman-Keul's post hoc analyses which indicated that mutual/arouse was significantly different from mutual/suppress and both differed significantly from rape/arouse and rape/suppress, which were not significantly different from each other.

Correlations were performed between rape indices (under arouse and under suppress instructions) and age, IQ, frequency of intercourse, frequency of masturbation, and number of past sexual partners. The only significant finding was a small relationship between IQ and the rape index under suppress instructions ($r = -.18$; $p < .05$; df = 1, 95). Because of this relationship, subjects were blocked into five IQ levels (less than 80, 80–90, 91–100, 101–110, and greater than 110) and a one-way ANOVA was performed on the rape index under suppress instructions. The data indicated a marginally significant group difference ($F = 2.36$; $p < .06$; df = 4, 187). Means are listed in Table IV and indicate a decrease in the rape index from the low to the higher IQ levels. However, post hoc Newman-Keul's test failed to reveal any significant differences in the pairwise comparisons.

Finally, the relationship of the two SES markers, education and income, to the rape indices were analyzed. Separate one-way ANOVAs performed on the two rape indices across three education levels (less than high school, high-school graduate but less than college graduate, college graduate) indi-

Table IV. Mean Rape Indexes Under Suppress Instructions Across Various IQ Levels

IQ values	Mean	*N*
Less than 80	1.51	33
80–90	1.51	36
91–100	1.46	41
101–110	1.02	35
Greater than 110	.89	47

cated no significant differences. Similar analysis across five income levels (from less than $5,000 to greater than $25,000) showed no differences in rape indices based on income level.

DISCUSSION

Overall, the present study is supportive of previous literature, at least for the data obtained under instructions to become aroused. The present study indicated that subjects, on average, evidenced 58% erections to heterosexual stimuli and 37% erections to rape stimuli under the arouse conditions. Previous studies using different types of stimuli have produced fairly similar results. Hinton *et al.* (1980), using longer video stimuli, found that their subjects evidenced approximately 85% erections to heterosexual stimuli and 60% erections to rape stimuli which depicted the rape of a 12-year-old girl. Barbaree *et al.* (1979), using audiotaped stimuli, showed erection responses of 50 and 35% to mutual and rape stimuli, respectively. Data presented by Abel *et al.* (1980), again using audiotaped descriptions, are the most discrepant from the present data, indicating erection responses of 21% to mutual stimuli and 14% to rape stimuli for normals. However, if the above data are converted to the rape index, very similar patterns emerge. For the present study, the average rape index across subjects was .64, while it was .66 for the study by Abel *et al.*, .70 for the study by Hinton *et al.*, and .50 for the study by Marshall *et al.* In addition, the number of subjects misclassified using a rape index of 1.0 under arouse instructions was very similar to that of previous reports (Abel *et al.*,1978; Quinsey *et al.*, 1981). The present data, compared to the data of these previous studies, reinforce the value of the rape index as a way of summarizing erection data and as a means of comparing studies across stimulus modalities and laboratory settings.

Although the data for the rape index under arouse instructions support the previous literature, the index under suppress instructions leads to large misclassification rates and classification rates that are no better than chance. The comparison of erection responses under arouse instructions suggests that normals may already be suppressing to rape stimuli under arouse instructions and are unable to suppress further when instructed to. For mutual stimuli, however, they are able to show further suppression when instructed, therefore leading to an increase in the rape index under suppress instructions. This is consistent with work by Marshall and his colleagues (Marshall, Earls, Segal, & Drake, 1983) suggesting that the deficit in rapists may be their failure to inhibit arousal to aggressive themes as observed in normals.

In terms of possible factors confounding the interpretation of arousal data, the present study showed little evidence of such confounding, at leat for the variables measured. For the classification of normals, this study shows

no advantage in excluding subjects based on the overall arousal level, which did not affect the classification results. Whether this holds true for rapists awaits further large-scale studies. Similarly, the correlation analyses performed and the analyses of variance performed for SES markers indicated that only IQ was related to the rape index under suppress instructions and this correlation was quite small. In addition, follow-up analyses did not clearly indicate differences across IQ levels. It did not appear from the present data that age, sexual experience, or SES was significantly related to the rape index. However, in terms of age, although there was a wider age range in this study than in previous normative studies, the majority of subjects was less than 40 years of age. It is possible that if there was a more even distribution of subjects across ages, the relationship might change, and further studies may need to address this issue.

It is interesting to note that the 20 to 22% of normals considered misclassified in this study is consistent with Malamuth's findings that approximately 30 to 35% of college males self-report some likelihood of raping if they could be guaranteed that they would not be caught. Malamuth (1981) also found that these individuals evidenced more sexual responding to rape stimuli, accepted more attitudes conducive to rape, and engaged in a higher level of laboratory aggression against women than individuals with a low likelihood to rape indices. It may well be that subjects misclassified in the present study are not true errors but rather represent a subset of normals who share many characteristics with rapists but presumably have not behaviorally acted out or at least have not admitted to such. In our large-scale study, Murphy *et al.* (1985), it was found that sexual arousal to aggressive themes was one of the variables that contributed to the prediction of coercive sexual behavior in this population.

Overall, the present study indicates that the rape index under arouse instructions was relatively accurate in classifying normals. The rape index appears not to be influenced by age, sexual experience, or SES and to be influenced only minimally by intellectual level. Also, the present results, compared to those of other studies, reinforce the value of the rape index as a method of comparing studies across stimuli and laboratory settings. Classification in the present study was not affected by the overall amount of sexual arousal measured in the laboratory, and therefore for classification studies there seems to be no need to exclude subjects for low arousal. The present data also clearly indicate that the rape index under suppress instructions is not useful, at least in terms of classifying normals.

Future studies may need to investigate more thoroughly subjects who are misclassified in terms of their similarities to rapists on other variables, the extent of engagement in lower levels of coercive sexual behavior, and the factors that lead such individuals not to act out their aggressive arousal

pattern. Also, future studies may want to address further the role of intellectual functioning in arousal to aggressive cues in terms of possible deficits in the accurate perception of aggression in the stimuli or in subjects' ability to inhibit such arousal.

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