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ARE PERSONS WITH NERVOUS HABITS NERVOUS? A PRELIMINARY EXAMINATION OF HABIT FUNCTION IN A NONREFERRED POPULATION

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In this study, 44 individuals were exposed to three conditions (anxiety, bored, and neutral) while being covertly videotaped. The videotapes were then scored for the occurrence of five classes of habits including hair, face, and object manipulation; object mouthing; and repetitive movement of the limbs. Results showed that hair and face manipulation increased during the anxiety condition, whereas object manipulation increased in the bored condition. The implications of this research are discussed.

DESCRIPTORS: habit disorders, habits, anxiety, self-stimulation

Nervous habits, defined as persistent and repetitive behaviors that serve no apparent social function, are fairly prevalent in the general population (e.g., Hansen, Tishelman, Hawkins, & Doepke, 1990). It is believed that habit behaviors occur during periods of increased anxiety or nervousness because their occurrence is negatively reinforced by the momentary decrease in nervous tension they produce. Alternatively, some speculate that habit behaviors serve a self-stimulatory function (e.g., Woods & Miltenberger, 1995). Habit behaviors are viewed somewhat differently in referred populations because research suggests that they may be associated with psychopathology (e.g., Stanley, Borden, Mouton, & Breckenridge, 1995). However, because there is little research that has examined the functions of nervous habits in referred or nonreferred populations, there is no clear consensus regarding their etiology. The purpose of this study was to examine the function of nervous habits in a nonreferred population. We investigated habit function in a nonreferred population because the vast majority of habit behaviors are exhibited by individuals who do not seek treatment for these behaviors.

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METHOD

Participants

Forty-four university students (17 males and 27 females with a mean age of 21 years) participated in this study following their participation in a previous study that examined habit prevalence (21 endorsed a low number of habits, and 23 endorsed a high number of the habits in the previous study; Woods, Miltenberger, & Flach, 1996).

Setting and Materials

Each participant was seated in a room (2 m by 2.5 m) facing a television with videocassette player and a one-way mirror. A videocamera behind the one-way mirror covertly recorded the participant's behavior.

Procedure

Each participant was placed in three conditions in sequential fashion. In the anxiety condition, the participant was given a one-page article and was told that he or she was going to have to give a short presentation on the article to a group of peers in 10 min. In the bored condition, the participant was asked to sit and do nothing for 12 min. In

the neutral condition, the participant chose an entertaining videotape and viewed it for 10 min. The neutral condition was always presented second, with the order of the anxiety and bored conditions being counterbalanced. After each condition, the participants were asked to complete a manipulation check measure called the Tolerance Questionnaire, a five-item 9-point Likert-type questionnaire that consisted of two manipulation check items and three sham items. Participants were told that they were participating in a "tolerance study" and that the questionnaire was being used to measure their level of tolerance in specific situations. One manipulation check item asked, "How bored were you during this situation?" and the other asked, "How nervous were you during this situation?"

Each segment of videotape for each participant was scored by one of two undergraduate raters using a 10-s partial-interval method for the occurrence of five separate classes of habits; these included hair manipulation, face manipulation, mouthing of objects, repetitive movement of the limbs, or manipulation of objects. For each of the five classes, the number of intervals including at least one of the behaviors from that category was divided by the total number of intervals, yielding a percentage of intervals for each specific class of habit behavior. Twenty-seven percent of the videotapes were scored for interrater reliability. Reliability across all classes of habits was 97.4% (range for the five separate classes was 95.8% to 99%).

RESULTS AND DISCUSSION

Repeated measures analyses of variance (ANOVA) on our manipulation check items showed significant main effects across conditions for boredom, $F(2, 86) = 31.53$, $p < .05$, and anxiety, $F(2, 86) = 94.8$, $p < .05$. For the boredom item, pairwise comparisons showed that scores in the bored condition ($M = 6.6$) were significantly higher than those in both the anxiety ($M = 4.5$) and the neutral ($M = 2.8$) conditions. For the anxiety item, pairwise comparisons showed that scores in the anxiety condition ($M = 5.5$) were significantly higher than those in both the bored ($M = 1.8$) and the neutral ($M = 1.3$) conditions. These self-report data suggest that our manipulations were effective in producing relatively higher levels of boredom and anxiety in the respective conditions.

A 3 × 2 mixed ANOVA, with three within-subject conditions (bored, neutral, and anxiety) and two between-subject groups (high and low habit groups), did not result in any significant interactions or main effects of group for percentage of intervals with habit behaviors. This suggests that the anxiety and boredom manipulations did not have a differential effect on individuals who endorsed a high or low number of habits. Although there were no interactions, there were significant main effects of condition for hair manipulation, $F(2, 84) = 4.51$, $p < .05$, face manipulation, $F(2, 84) = 15.2$, $p < .05$, object manipulation, $F(2, 84) = 6.5$, $p < .05$, and repetitive movement of limbs, $F(2, 84) = 3.32$, $p < .05$. We conducted pairwise comparisons to determine the source of the main effect for these four habit behaviors.

The percentage of intervals of hair manipulation was significantly greater in the anxiety condition than in the neutral condition. Similarly, the percentage of intervals of face manipulation was significantly greater in the anxiety condition than in both the bored and the neutral conditions. However, the percentage of intervals of object manipulation was significantly greater in the bored condition than in the neutral or anxiety conditions. Although repetitive movements were highest in the bored condition, pairwise comparisons showed no significant differences between condition means (Table 1).

Table 1
Mean Percentage of Intervals and Standard Deviations Across Habit Class and Experimental Condition

Condition	Habit class									
	Hair		Face		Mouth		Repetitive		Object	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Anxiety	4.4[N]	7.5	15.4[NB]	11.8	3.2	10.5	12.2	16.8	14.1	18.1
Neutral	1.4	2.4	6.5	6.0	2.6	5.8	11.3	16.7	17.0	26.3
Bored	2.9	4.3	9.5	8.5	2.4	5.5	16.5	19.0	28.6[AN]	29.1

Note. When a condition mean for a habit class is followed by the superscript A, N, or B, that mean is significantly greater than the anxiety, neutral, or bored mean, respectively, at the $p < .05$ level.

In this study, different experimental conditions influenced the occurrence of specific habits, with hair and face manipulation occurring most often in the anxiety condition and object manipulation occurring most often in the bored condition. These results suggest that habit behaviors may serve an anxiety reduction or self-stimulatory function. There are several implications of these findings. First, by identifying the conditions that lead to increases in habit occurrence, we may be better able to make inferences about the function of specific habit behaviors and tailor treatment to the specific behaviors. For example, perhaps relaxation exercises in conjunction with habit reversal procedures would be more effective than habit reversal alone in reducing habits that occur more frequently in anxiety conditions. Second, this study demonstrates that habits can be examined as behavior under at least partial control of the environment and that pathologizing such behavior may be unnecessary. Finally, this study lends further support to the idea that some classes of habits may serve different functions.

It is important to recognize the limitations in this preliminary examination of habit function. Because we used a nonreferred population, the clinical significance of the findings may be limited. The use of a groups design prevented any within-subject analysis and thus did not represent a true functional analysis of any individual case. Finally, we did not investigate possible social reinforcers for the habit behaviors, choosing instead to manipulate conditions that would allow inferences about nonsocial reinforcing consequences. It is possible that habit behaviors may at times be maintained by social consequences. It is our hope that this study will instigate further research that will examine functional relationships between habits and environmental antecedents and consequences using appropriate single-case methodology.

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