Cognitive Therapy and Research, Vol. 7, No. 1, 1983, pp. 93-98

Self-Control Behaviors and Coping with Seasickness

Michael Rosenbaum[1] **and Arnon Rolnick**
Tel-Aviv University and The Schwartz Research Center

The study examined the relations between subjects' general repertoire of self-control behaviors and their ability to cope with seasickness. Based on peer evaluations, sailors of the Israeli Navy were divided into "seasick" and "not seasick" groups. Each of these groups was further divided into high self-controllers (HSC) and low self-controllers (LSC) on the basis of their scores on Rosenbaum's Self-Control Schedule. Performance deficits as a consequence of a stormy sea were assessed by a peer evaluation technique. As expected, (a) HSC seasick subjects had fewer performance deficits than LSC seasick subjects, and (b) HSC seasick subjects reported using more extensively self-control methods to cope with seasickness than did LSC seasick subjects. These differences were not observed between HSC subjects and LSC subjects in the not-seasick group. HSC subjects did not differ from LSC subjects in their susceptibility to seasickness. These findings highlight the importance of cognitive skills in the process of coping with physically stressful situations.

There is growing evidence that individuals who were trained to use various self-control skills cope effectively with stressful situations (Goldfried, 1980; Meichenbaum, 1977). On the basis of this literature, Rosenbaum (1980a) developed a self-report measure, the Self-Control Schedule (SCS), that assesses the general repertoire of self-control behavior of an individual and his/her inclination to employ it when faced with everyday problems. The following content areas are covered by the SCS: (a) use of cognitve and "self-statements" to control emotional and physiological responses; (b) application of problem-solving strategies (e.g., planning, problem

[1]Address all correspondence, including requests for an extended report of this study, to Dr. Michael Rosenbaum, Department of Psychology, Tel-Aviv University, Tel-Aviv 69978, Israel.

0147-5916/83/0200-0093$03.00/0

definition, evaluating alternatives, anticipation of consequences); (c) ability to delay immediate gratification; and (d) general perceived self-efficacy.

In a recent study (Rosenbaum, 1980b) it was found that subjects who scored high on the SCS ("high self-controllers") tolerated a laboratory-produced cold pressor longer than subjects who scored low on the SCS ("low self-controllers"). The two groups of subjects did not differ in their ratings of the intensity of the pain produced by the cold pressor. However, high self-controllers reported using self-control methods more often and more effectively than low self-control subjects while exposed to the cold pressor. The purpose of the present investigation was to extend these findings to a "real-life" situation, namely, to seasickness, and to provide additional validity to the SCS.

Seasickness is a major problem in individuals who have to function and operate in relatively small boats in a stormy sea. It is a stressful situation in which the afflicted individual suffers severe physiological and psychological symptoms (Money, 1970; Reason, 1974). Gal (Note 1) found that when severity of seasickness is held constant, individuals vary in their level of functioning regardless of their symptoms. He attributed part of this variance to an active-coping personality disposition, which he measured by a projective sentence-completion test.

On the basis of Rosenbaum's (1980b) and Gal's (Note 1) studies, it was hypothesized that (a) high self-control seasick subjects would show fewer performance deficits in a stormy sea than low self-control seasick subjects and that (b) high self-control seasick subjects would use more extensively than low self-control seasick subjects specific self-control methods to cope with seasickness.

METHOD

Subjects

Eighty-nine enlisted (nonofficers) crewmen (age 18-23 years) serving on missile boats in the Israeli Navy were randomly selected for this study.

Procedure and Instruments

Three self-report measures and a peer-evaluation scale were administered to the subjects while their boats were in port. The self-report measures included (a) the Self-Control Schedule (SCS) (Rosenbaum,

1980a); (b) the Self-Control of Seasickness Questionnaire, which assessed specific seasickness-related self-control behaviors; (c) Self-Report of Seasickness, which required subjects to rate the extent to which they suffer from each of eight seasickness symptoms while being in a stormy sea. The latter two scales were specifically constructed for this study. Each item of the above three scales was rated on a 6-point scale.

In addition, each subject was asked to evaluate each of the other nine members of his department on two 6-point scales: (a) the susceptibility of the peer to seasickness, and (b) the extent to which the performance of the peer on the boat deteriorates in a stormy sea compared to his performance while the boat is in port. In the instructions for the first scale it was emphasized that ratings should be based only on the other person's physiological symptoms of seasickeness and not on the way he had coped or performed. Instructions for rating the second scale emphasized evaluations of changes in performance and not performance per se. The peer evaluations employed in the present study were similar to those used by Gal (1975).

RESULTS AND DISCUSSION

Seven subjects were dropped from the final analysis because of incomplete data. The mean SCS score of the 82 subjects was 26.09 (SD = 22.69), which was similar to the means obtained previously with student samples (Rosenbaum, 1980a). Pearson correlational analyses revealed that the SCS scores were independent of self- and peer evaluations of seasickness. There was 75% to 95% agreement among the peer ratings.

The subjects were divided into "seasick" (N = 41) and "not seasick" (N = 41) groups according to the median peer ratings of severity of seasickness (Mdn = 2.8). There were no significant differences between the mean SCS score for the seasick group (M = 26.94) and those for the not seasick group (M = 24.57).

The seasick and the not seasick groups were further divided into high self-controllers (HSC) and low self-controllers (LSC) according to their scores on the SCS. About 20% of the subjects who scored in the middle range of the SCS were omitted from these groups. The two HSC groups had SCS scores above 34 and the two LSC groups had SCS scores lower than 15.

In Table I are presented the means and the standard deviations of the four dependent variables for the HSC and LSC groups within each seasick and not seasick group. In the lower part of Table I are the data for the total sample divided into seasick and not seasick groups. Our main

Table I. Means and Standard Deviations of the Four Dependent Measures for the Different Groups[a]

	Dependent variables			
Groups	Self-control of seasickness	Peer ratings of performance deficits	Self-report of seasickness	Peer ratings of seasickness
Seasick				
HSC[b] (N = 16)	11.62(6.36)	2.90(.95)	7.56(14.48)	3.98(.59)
LSC[b] (N = 16)	1.88(10.04)	3.60(.96)	7.23(13.43)	3.86(.54)
t(30)	3.30[d]	2.14[c]	.07	.62
Not Seasick				
HSC (N = 16)	−1.62(11.39)	2.19(.53)	−11.64(11.93)	2.13(.51)
LSC (N = 16)	−5.78(8.74)	1.87(.85)	−13.56(10.97)	1.96(.49)
t(30)	1.11	1.12	.46	1.85
All seasick (N = 41)	6.76(8.91)	3.29(.98)	7.71(13.25)	3.89(1.13)
All not seasick (N = 41)	−3.00(10.01)	2.04(.65)	−11.33(12.70)	2.04(1.15)
t(80)	4.79[e]	6.70[e]	5.78[e]	3.50[e]

[a]Standard deviations in parenthesis. On self-control of seasickness, scores range from −18 (low self-control) to +18. On peer rating of performance deficits, scores range from +1 (no deficits) to +6. On self-report of seasickness, scores range from −24 (no sickness) to +24. On peer rating of seasickness, scores range from +1 (no sickness) to +6.

[b]HSC = High Self-Controllers, LSC = Low Self-Controllers.

[c]$p < .05$.

[d]$p < .01$.

[e]$p < .001$.

interest was in the seasick group. As can been seen from Table I, the two major hypotheses were supported by data. Although seasick subjects performed, in general, worse than not seasick subjects, HSC seasick subjects showed significantly fewer performance deficits in a stormy sea than LSC seasick subjects. Further, HSC seasick subjects reported using more extensively specific self-control methods to cope with seasickness than LSC seasick subjects. As expected, HSC subjects did not differ from LSC subjects in their susceptibility to seasickness as assessed by self- and peer evaluations. The differences found between HSC subjects and LSC subjects were limited to the seasick subjects and were not observed in the not seasick subjects (see Table I).

Self-control behavior was probably only one of the important factors that accounted for the extent of performance deficits noticed in seasick subjects. Gal (Note 1) found that subjects with the rank of noncommissioned officer (NCO) achieved better performance in spite of their

seasickness. Yet variables such as length of experience at sea, sociometric status, and motivation for service were not significantly related to level of performance in Gal's study (Gal, Note 1). In a different study, Gal (1975) found that length of experience at sea was associated with lower levels of seasickness severity but was not related to coping with seasickness. Gal (1975) suggested that coping ability, rather than susceptibility to seasickness, "should be viewed as a critical factor in the selection of recruits for service under conditions conducive to severe seasickness" (p. 839). Susceptibility to seasickness symptoms will decline by itself with passage of time. As the present results indicate, the SCS may be a useful instrument in predicting an individual's coping ability. These findings are in line with a previous study (Rosenbaum, 1980b) in which the SCS was found to predict subjects' tolerance to a laboratory-produced cold pressor. This study also underscores the importance of cognitive skills in the process of coping with physically stressful situations.

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