

Crisis Prevention and Intervention Training for Psychiatric Hospital Staff¹

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A 5-day course designed to train psychiatric hospital staff verbal and physical methods of preventing violence and injury when dealing with upset patients was taught to 89 staff from maximum and less secure wards. Compared to no-treatment controls, experimental subjects improved significantly on four tests of crisis-related tests and knowledge. Questionnaire and self-report measures from staff and patients on the training wards also indicated positive course effects. Assault frequencies decreased immediately after the course and staff injuries on experimental wards were reduced after the course relative to control wards.

For staff working with psychiatric patients, especially those working with patients considered to be an imminent danger to others, the possibility of being assaulted, or of having to intervene in an assault, is one that must be faced on a daily basis. Lion and Reid (1983) have described the severity of the problem of assaults within psychiatric institutions. Typically, however, staff receive no formal training in managing assaultive patients. At our facility of approximately 500 treatment beds (300 of which are in a maximum security division) there were an average of 532 days lost through staff injuries as a result of patient-caused incidents in the 6 years prior to the present

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study. At least as serious a problem are the injuries incurred by patients during patient-staff altercations. Moreover, occurrences of violence within the institution create fear amongst patients and staff who see the incident happening to one of their peers. The fear creates an atmosphere that is antithetic to the environment required for treatment. In fact, Paul and Lentz (1977) found that when assaults on treatment wards for chronic psychiatric patients increased due to a rule that severely restricted the confinement of disturbed patients, the ward atmosphere deteriorated so drastically that treatment became virtually impossible.

Despite the serious nature of the problem, little has been attempted in the way of training programs to aid staff in dealing with potentially dangerous situations. St. Thomas Psychiatric Hospital (1976) developed a course in the management of disturbed behavior which was reported to have been highly successful in reducing incidents of disturbed behavior and the number of work hours lost through staff injuries. However, since all staff were given the training, it was not possible to evaluate whether the training per se was responsible for the reductions or whether other changes in the hospital environment (such as the reduction in the number of patients, changes in hospital programs, etc.) were responsible. Several crisis intervention programs (e.g., Goldstein, Monti, Sardino, & Green, 1977; Mulvey & Reppucci, 1981) have been designed for police officers who face problems similar to those of psychiatric hospital staff inasmuch as they are often called to intervene in cases of upset citizens or other situations in which violence is imminent. However, the results of such training have been inconclusive.

The present study was an evaluation of a comprehensive crisis prevention and intervention training program for staff in minimum, medium, and maximum security areas of a provincial psychiatric hospital. A previous study on one of the maximum security units of the hospital revealed that there were 198 assaults in a 1-year period (Quinsey & Varney, 1977). Many of the patients on the unit had been admitted because they had been assaultive to staff or patients in other institutions. It was also found that staff were the victims of the majority of assaults. Because patients are in contact with other patients much more often than with staff, the proportion of staff victims in these assaults was remarkable. The discrepancy in the proportion of staff and patient victims strongly suggested that the interactions between staff and patients were major determinants of assaultive behavior. Most often, staff stated that there was "no reason" for the assault, whereas in over 90% of the cases, the patients stated that there was a reason. In cases where staff were the victims of the assaults, the most often cited reason for the assault (as stated by patients) was staff provocation (teasing or abuse). Other often cited reasons were that they were ordered to do something by staff or that staff refused a request. It is interesting to note that this was similar to Toch's (1969) finding that while citizens in police-citizen assaults claimed to be reacting to something the police officer did, the police officers most often viewed their actions

as harmless and routine and attributed the assault to "irrational" behavior on the part of the attacker. These data suggested that perhaps staff could learn to de-escalate these situations rather than unwittingly provoke them into assaults.

The crisis intervention course evaluated in the present study included methods of selectively attending to and responding to patients' feelings and concerns in situations in which there was a high risk of an assault, physical methods of restraining aggressive patients, self-defense techniques, and interview and mediation skills to be used following assaults to prevent recurrences. The study was quasi-experimental in design with staff on the six wards involved in the program receiving the training two wards at a time. Control subjects from other wards were given pre- and postcourse evaluations but were not offered the course. Measures included tests of knowledge and physical and verbal skill in dealing with upset patients, questionnaire data from staff and patients on wards where the staff worked, and assaultive incident data.

METHOD

Project Participants

Experimental subjects were 62 male staff from the four maximum security wards of one unit of the Mental Health Centre in Penetanguishene, Ontario, as well as 26 male and female staff from two wards of the lesser (medium and minimum) security division of the hospital. Participation in the course was voluntary and staff were told that their responses on the course measures would be kept confidential and would have no bearing on their evaluations or opportunities for advancement. Most of the staff were registered nursing assistants. Control subjects were 14 male volunteers from another unit of the maximum security division of the hospital and 23 male and female volunteers from the lesser security division.

The course trainers included all of the authors as well as eight nursing staff and two recreational staff. The nursing staff trainers were chosen for the skills they had demonstrated in their everyday interactions with patients on the ward. All trainers attended a 1-week crisis intervention workshop prior to their participation in the teaching of the course.

Course Content

The first section of the course covered methods of crisis prevention. The course began with a discussion of security procedures such as the numbers of staff required for various activities and spacing of staff. Staff were

then taught to identify occasions when patients were likely to become agitated and behavioral cues indicating agitation. The effects of different types of physical and verbal approaches to patients were discussed, as were basic non-directive interviewing and listening skills for calming patients, identifying problems, and allowing for closer observation.

The next section included verbal techniques to be used with highly upset patients (defusing), as well as physical techniques to be used when verbal procedures were either not appropriate or had been tried and failed. In the defusing section, the emphasis was on adequate preparation, safety issues, a firm approach, and initial distraction and separation of disputants. In the physical section of the course, participants were taught self-defense techniques for frequently encountered types of patient attacks as well as for some rarer situations where a clear physical solution was available and simple to teach. In addition, subjects were taught safe and effective methods of patient restraint.

The final section covered procedures to be followed after an incident had occurred. It included interview procedures designed to gather information to prevent similar incidents in the future and mediation techniques designed to help staff resolve specific recurring difficulties between patients or between a staff member and a patient. The section ended with a discussion of job stress.

A number of videotaped simulations showing effective and ineffective methods of dealing with crisis situations were shown throughout the course. A full day was spent on live simulations of crisis situations by the course trainees. These were designed to be as realistic as possible and took place in ward areas. Many of the simulations were adapted from incidents which had previously occurred on one of the wards.

After the course was developed in its preliminary form, the material was reviewed with senior nursing staff to ensure their personal endorsement of the course. While the course topics and content were basically the same for staff at the maximum and lesser security divisions, some of the course material was tailored to meet the particular needs of each group.

Design

The 5-day course was presented to staff in groups of seven to nine. It was offered to staff from the six wards, two wards at a time, with the two maximum security ward pairs receiving training first. Six-month intervals separated the three periods during which the course was presented. Nine maximum security control subjects were run shortly after the first set of courses and another five shortly after the second set. Control subjects from the less secure division were run immediately before and after the courses

were offered for the staff from that division. All maximum security control subjects completed all measures except the course feedback questionnaires. Only 3 of the control subjects from the lesser security division completed all measures; 9 were assessed only on the skill and knowledge measures, while another 11 completed only the self report measures.

Measures

Tests of Knowledge and Skill. The Sensitive Situations Skill Test was designed to measure the accuracy of observations of patient behavior and the ability to discriminate effective and ineffective social and physical methods of dealing with patients in potentially explosive situations. There were two versions of this test: one for maximum security staff, and one for staff from the lesser security division. Each version of the test consisted of four videotaped scenes of simulated interactions between patients and staff and covered all aspects of the course. In each scene, staff were depicted performing a mixture of effective and ineffective procedures. The scenes were judged by nursing and psychology staff to be highly realistic and typical of problematic situations on the ward. Each of the scenes was divided into short segments, and respondents were asked questions about each segment immediately after viewing it. A scoring key was developed for each of the two versions of the test on the basis of responses by panels of expert judges consisting of relevant course trainers and nursing management staff. Only those questions on which there was unanimous agreement about the best response were retained. Interrater agreement on scores for individual items ranged from 81 to 100%. Statistical analyses were performed on the total scores on the tests. The test was administered once immediately before the course and once immediately after. Control subjects took the test on two occasions approximately 1 week apart.

The Audiotaped Simulations Test contained audiotaped scenarios that involved dealing with upset patients. A situation was described, the patient spoke, and then there was a tone after which the subject was instructed to respond as he or she would if the situation were actually happening. The maximum security version of the test consisted of five situations, while the lesser security version contained seven situations, with three practice situations at the beginning of each. For each version of the test, a scoring system was developed in which points were given for certain components and deducted for others. The system was derived by using good and deliberately poor responses given by the trainers (considered by the project staff to be experts in the handling of such situations) to extract components of good and bad responses, and then refined using a sample of responses from pilot subjects. Because study subjects gave a few responses that could not be scored reli-

bly by the existing scoring system, judges who were blind as to group assignment or test occasion used a sample of actual responses to further refine the scoring system. Two raters independently and blindly rated all responses. Interrater reliabilities of the total scores were over 0.90 for the maximum security subjects, and 0.99 for the subjects from the lesser security division (Pearson r). The total scores of both raters were used in subsequent analyses. Cronbach's alpha coefficient for the maximum security version of the test was 0.38 and for the less security division version it was 0.65.

In order to determine how "experts" uninvolved with the course material would score on the test, four senior nursing staff from each of the two areas of the hospital were given the same test as staff in their area. These senior staff had neither taken the course nor participated in its development, but they had all been promoted into their positions because of their demonstrated skill in the handling of patients. These senior staff were given written rather than oral versions of the test as pilot testing had showed that it made no difference in the scores obtained. These staff obtained very high scores on this measure, thus providing some evidence of its validity. This test was given to course participants and controls on the same schedule as the Sensitive Situations Skill Test.

The Physical Skill Test was designed to sample skills taught in the physical section of the course. It consisted of eight situations presented in a fixed order by one trainer to one subject. The trainer began by informing the subject that this was a physical test in which a number of situations which could really occur would be presented. The trainer then took the role of a patient and either pretended to attack or asked the subject to use restraint techniques. Effectiveness of the subject's response was rated by the trainer on the basis of predetermined rating criteria. Reliability of the total scores assigned independently by two raters in a sample of the assessments was found to be 0.98 (Pearson r). This test was given immediately before and after the course. This test and the test below were developed subsequent to the presentation of the courses for the maximum security subjects. Thus data are presented for staff from the lesser security division only.

The Self-Defense and Patient Restraint Written Test was designed to measure the ability to verbally describe principles of safety in self-defense and use of patient restraints. This test contained 13 items and the scoring key was developed by consensus amongst the trainers. Interrater reliability was 1.00 (Pearson r) when two raters independently scored a sample of responses.

Self-Report Measures. The Course Feedback Questionnaire asked participants to rate how much they enjoyed the course, how good the course was in relation to other courses they had taken at the hospital, and how useful each course topic was. In addition, respondents were asked to indicate

how useful the course was in their daily work, the degree to which they felt their personal job effectiveness would be increased, and whether they would recommend the course to other staff. This questionnaire was very similar for subjects from the two divisions and was given at the end of the course and again 6 weeks later. A long-term follow-up questionnaire was given to all staff who had taken the course and who were working on one of the study wards at the time of the follow-up. Respondents were asked to answer many of the same questions asked on the original questionnaire as well as whether the course had prevented themselves, their co-workers, or patients from being injured. All 63 staff who qualified responded and the average follow-up time was 15 months.

The On-Ward Job Reactions Scale allowed staff to indicate how confident and comfortable they felt in their interactions with their patients in a variety of different contexts. Using the precourse responses of both trainees and controls, it was found that the items possessed sufficient internal consistency (alpha coefficients of 0.71 and 0.76 in the maximum and lesser security divisions, respectively) to be combined into one scale. It was administered before and 6 weeks after the course.

Assault-Related Measures. Data were gathered regarding the number of assaults on patients and staff on the wards involved in the study. In the maximum security division, these data were gathered by having a research staff go to each ward each weekday and read the ward notes made since the last visit. From the ward notes, and by talking to staff, the research staff recorded each assault, and whether the victim was a patient or a staff. Periodic reliability checks were made by having two research staff go independently to the wards to collect the data. In the less secure division, the assault data were gathered by reading the ward notes each week and by reading the incident reports that staff had to complete after each assaultive incident. Again, periodic reliability checks were made by having two raters independently collect the same information. The interrater reliabilities were found to range from 69 to 100% on the occurrence or nonoccurrence of assaults based on only those occasions where at least one rater coded an assault.

The second assault-related measure was the number of workdays lost due to patient-caused staff injuries. These data were available for staff on study wards as well as nonstudy wards and data were available for several years prior to the initiation of the study. For the period of interest for the analyses reported in this paper, records were kept by the business office and these were later checked by two raters unfamiliar with the study. There was an 88% agreement between the two raters on whether or not the incident was patient-caused. In cases of disagreement, a third independent rater who was also unfamiliar with the study was employed to resolve the dispute. The third assault-related measure was the number of times sedative medication

was administered on an "as needed" basis to upset patients. However, due to inaccurate recording, no use could be made of these data for the less secure division. Thus these data were analyzed only for the maximum security division.

Patient Measures. Originally, we had planned to evaluate the effects of the course on altering the ward environment by asking patients on the wards to complete the Ward Atmosphere Scale (Moos, 1974, 1975). However, this plan had to be abandoned when the union representing the staff objected because they felt it was improper for the patients to be asked questions regarding staff performance, and it was apparent that the entire project would have been in jeopardy had we insisted on this measure. Instead, we decided to ask patients to rate their own self-esteem and mood on the theory that if the course was successful, staff might change their interactions with patients so that the patients would feel less depressed, less anxious, and have more self-esteem than they did prior to the course. We therefore had every literate patient who consented to do so complete three questionnaires: a modified version of the Coopersmith Self-Esteem Inventory developed for an adult corrections population (Bennett, Sorensen, & Forshay, 1971), a scale including adjectives measuring depression and anxiety from the Adjective Checklist (Gough & Heilburn, 1965), and a modified version of the Feelings Scale developed by Bradburn and Caplovitz (1965) to measure positive and negative affect in clinical populations.

Each questionnaire was given to each patient three times approximately 1 week apart 6 weeks before and 6 weeks after staff on each ward pair were given the course. (Because of problems in the implementation of this measure, no data were collected on these measures prior to the commencement of the course for the first ward pair.)

RESULTS

The data of all the maximum security subjects were analyzed together because the results of the first and second ward pairs were very similar. Separate analyses are presented for the subjects from the lesser security division because they differed from the maximum security subjects demographically, worked in a quite different setting, received a somewhat different course, and (in most instances) were assessed with somewhat different measures.

Tests of Knowledge and Skill

The data for the tests of knowledge and skill were analyzed primarily by means of 2×2 repeated measures analyses of variance in which the

factors were Group (experimental and control), and Time (pre- and post-course). The effect of interest in all cases was the Groups \times Time interaction in which the prediction was that the experimental group would show significantly more positive change than the control group.

The means and standard deviations for all conditions and results for the Groups \times Time interaction of the analyses of variance for each of the tests are shown in Table I.

On the Sensitive Situations Skill Test, the analysis of variance yielded a Group \times Time interaction effect that was just short of significance for the maximum security division, $F(1, 75) = 3.90, p < .52$, but clearly significant for the lesser security division, $F(1, 36) = 8.62, p < .01$. Subsequent *t*-test analyses showed that experimental subjects improved significantly from pre- to posttest in both divisions, $t(62) = 4.46, p < .001$ in the maximum security division, and $t(25) = 8.56, p < .001$ in the lesser security division. Thus, course participation led to increased observational skills and information about how to handle sensitive situations.

On the Audiotaped Simulations Test, the analyses of variance showed highly significant Group \times Time interactions for staff in both maximum security, $F(1, 72) = 8.30, p < .01$, and lesser security, $F(1, 36) = 17.56, p < .01$, divisions. Thus, there was clear evidence that course participation led to increased skill in handling sensitive situations as measured by this test.

For both the Physical Skill Test and the Self-Defense and Patient Restraint Written Test, the analyses of variance revealed very highly significant Group \times Time interactions, $F(1, 36) = 89.3, p < .0001$ for the former test and $F(1, 36) = 35.5, p < .0001$ for the latter. Both of these tests were given only to staff from the lesser security division as they were developed subsequent to the presentation of the course in the maximum security setting. However, the tests were both given to staff in the maximum security division after the research phase of the study was over and these staff showed similarly significant improvements following the course.

Self-Report Measures

On the Course Feedback Questionnaire, the responses were positive in both settings on all three occasions. The majority of subjects stated they enjoyed the course very much (the average score was 5.5 on a 6-point scale), and rated the course as one of the best courses they had taken at the hospital (the average score was 4.4 on a 5-point scale). Most subjects also rated the course as very useful in the performance of their duties (the average score was 5.6 on a 6-point scale). The course was rated as increasing personal effectiveness on the job "very much" or "quite a bit" by most subjects on the postcourse questionnaire (the average score was 4.0 on a 5-point scale), and

Table 1. Statistical Analysis for the Tests of Knowledge and Skill and the On-Ward Job Reactions Scale^a

Measure	Maximum security division						Lesser security division							
	Experimental group (<i>n</i> = 63)			Control group (<i>n</i> = 14)			Experimental group (<i>n</i> = 26)			Control group (<i>n</i> = 23)				
	Pre	Post		Pre	Post		Pre	Post		Pre	Post			
	<i>M</i>	<i>SD</i>	<i>F</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	
Sensitive situations	66.60 (63)	9.43 (63)	8.05 (63)	66.79 (14)	5.91 (14)	66.93 (14)	53.16 (26)	11.78 (26)	66.06 (26)	10.50 (26)	48.37 (12)	11.77 (12)	53.42 (12)	8.62 ^d (1, 36)
Audiotaped simulations	29.95 (61)	5.54 (61)	34.38 (61)	31.62 (13)	5.88 (13)	31.92 (13)	12.12 (26)	7.59 (26)	22.08 (26)	7.03 (26)	10.67 (12)	6.37 (12)	11.92 (12)	17.56 ^d (1, 36)
Physical skill	-	-	-	-	-	-	5.81 (26)	3.98 (26)	18.61 (26)	3.25 (26)	5.25 (12)	2.63 (12)	6.92 (12)	89.34 ^d (1, 36)
Self-defense	-	-	-	-	-	-	13.23 (26)	5.15 (26)	25.76 (26)	3.59 (26)	11.67 (12)	4.96 (12)	14.00 (12)	35.5 ^d (1, 36)
On-ward job reactions	12.47 (63)	1.18 (63)	13.17 (63)	12.83 (14)	1.35 (14)	12.82 (14)	12.93 (25)	1.25 (25)	13.28 (25)	1.10 (25)	13.17 (14)	1.16 (14)	13.28 (14)	0.17 (1, 37)

^aThe *F* value refers to the Group × Time interaction. Numbers in parentheses refer to the degrees of freedom.

^b*p* < .10.

^c*p* < .05.

^d*p* < .01.

most subjects recommended the course very highly to other staff (the average rating was 4.7 on a 5-point scale). The extremely positive responses were only slightly attenuated 6 weeks after the course and were maintained 15 months later when the course and the methods advocated in it could be evaluated against direct experience on the job. Furthermore, 15 months after taking the course, most staff replied that they frequently still used portions of the course and that the course had probably or definitely prevented themselves, their fellow workers, or patients from being injured (the mean response was 1.6 on a 5-point scale where 1 represented "definitely prevented injury").

For the On-Ward Job Reactions Scale, the means and standard deviations, for all conditions, and the F values for the Group \times Time interaction of the analyses of variance are shown in Table I. As may be seen from the table, the experimental-group subjects improved their scores significantly more than control-group subjects in the maximum security division, $F(1, 75) = 6.65, p < .01$. In the lesser security division, scores of the experimental subjects increased significantly from pre- to posttest, $t(24) = 1.75, p < .05$, but this increase was no greater than that for the control subjects, $F(1, 37) = 0.17$. Thus, there is evidence for increases in felt comfort and confidence attributable to course attendance among the maximum security trainees, but not among the lesser security division trainees. It should be noted, however, that even before the course, trainees' mean scores in both settings were quite high, placing a ceiling on any possible increases.

Assault-Related Measures

The assaultive incident data were analyzed by means of a simplified time series analysis designed for studies with relatively few observations (Tryon, 1982). For each ward pair, the number of assaultive incidents per 30-day period represented one data point. Data collection began on all six wards a minimum of 18 months before the course and continued for the same amount of time after the course. Thus there were eighteen 30-day periods both pre- and postcourse for each ward pair. Because of high variability within ward pairs, these data were analyzed by totaling the assaults in each 30-day period for all of the three ward pairs. As illustrated graphically in Figure 1, the time series analysis revealed no trend over the precourse period for assaults on patients ($Z = -0.171$), assaults on staff ($Z = -0.358$), or total assaults ($Z = -0.454$). There was, however, a significant increasing trend in the postcourse data for assaults on staff ($Z = 1.87, p < .05$), and for total assaults ($Z = 2.56, p < .01$). The trend for assaults on patients was in the same direction but was not significant ($Z = 0.795$). Also shown in Figure 1 are the best-fit lines for each set of data. The intercepts of the best-fit lines for the

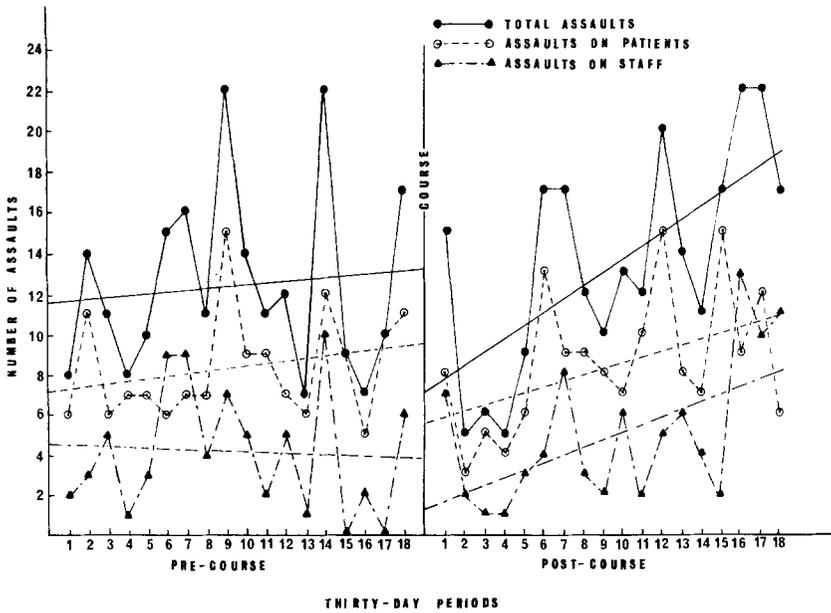


Fig. 1. Assaults on staff and patients and total assaults by 30-day periods pre- and post-course. Straight lines indicate lines of best fit.

postcourse data are below those of the precourse data in all cases, suggesting that the immediate effect of the course was to lower the number of assaults.

The number of workdays lost as a result of patient-caused staff injuries were analyzed by means of time series analyses similar to those described above using the number of workdays lost by 30-day blocks for 18 months pre- and postcourse for the study wards and for a comparable period for the wards not involved in the study. The data are presented in Figure 2 along with the best-fit lines. Although the lines of best fit present a pattern suggestive of an immediate postcourse drop in workdays lost for the study wards, but not for the control wards, the time series analyses revealed no significant trends for any of the lines. For the experimental wards, there were a total of 10 incidents which resulted in 318 days lost in the precourse period, and a total of 18 incidents and 231 days lost in the entire postcourse period. For a comparable period on the wards not involved in the study, there was 1 incident which resulted in 6 days lost in the precourse period and 13 incidents and 414 days lost in the postcourse period. A chi-square analysis of these data revealed a highly significant reduction in the number of incidents ($\chi^2(1) = 3.94, p < .05$), and in the number of workdays lost on the study wards relative to the nonstudy wards ($\chi^2(1) = 341.24, p < .001$).

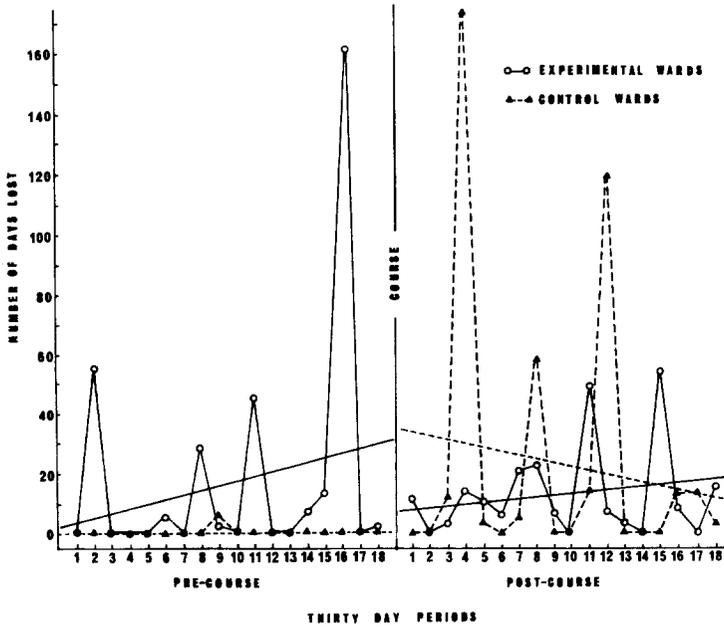


Fig. 2. Workdays lost due to patient-caused staff injuries on experimental and nonstudy wards. Straight lines indicate lines of best fit.

The number of times medication was ordered for upset patients went up during the period of data collection. However, the same increase was observed on wards not involved in the study, and the course appeared to have had no effect on this measure.

Patient Data. The scores of the three patient questionnaires were moderately intercorrelated (the intercorrelations ranged from 0.58 to 0.73, Pearson r). In order to reduce the amount of data for analysis, scores from each of the three questionnaires were converted to standard scores and summed to provide one score per patient per test. These data were then analyzed by means of a $2 \times 2 \times 2$ analysis of variance in which the factors were Group (experimental and control), Time (precourse and postcourse), and Security Level (more secure wards and less secure wards). This analysis yielded a significant Group \times Time \times Security Level interaction, $F(1, 690) = 4.26, p < .05$. Further analysis of simple effects revealed a significant Group \times Time interaction for the more secure wards, $F(1, 690) = 5.14, p < .05$, but not for the less secure wards, $F(1, 682) = 0.396$. For patients on the more secure wards, the overall affect score improved significantly 6 weeks following the time when staff on their wards received the course relative to patients on the other wards. For patients on the less secure wards, the results were in the same direction but were not significant.

DISCUSSION

The course was designed to teach staff skills in dealing with violent and potentially violent patients. The tests of knowledge and skill included both verbal and physical measures of behavior in simulated crisis situations. The tests required that participants apply the knowledge gained from the course to situations different from those studied during the course itself. On all four measures, we were able to demonstrate statistically significant increases that could confidently be attributed to the course. Trainees showed significant improvements in their abilities to respond verbally in potential crisis situations, to recognize effective and ineffective ways to deal with crises, to defend themselves in the event of patient attacks, and to restrain patients safely and effectively. The control groups helped rule out practice effects as a possible alternative explanation; and the finding that very similar results were obtained from each of the ward pairs although the staff were trained at different times makes it unlikely that the observed improvements could be attributed to extracourse variables.

A second set of measures had to do with the acceptance of the program. The Crisis Prevention and Intervention Course clearly met with the approval of the staff trainees who judged the course to be relevant and useful in their daily work with patients on the wards. We were particularly encouraged by the finding that staff still rated the course as very useful 15 months after taking it, and that most subjects stated that it had definitely or probably saved themselves or co-workers from being injured. These data as well as informal comments suggested that the course led to increased levels of self-confidence which lessened the atmosphere of fear which others have noted seriously interferes with treatment (Paul & Lentz, 1977). In addition, the course also met with the approval of the management of the hospital who had expressed support for the project throughout its duration, who were aware of the positive responses of the staff, and who instituted the course as a regular component of staff training after the completion of the project.

A third set of measures was assault-related. It was hypothesized that the course would reduce the number of assaultive incidents and the number of workdays lost due to patient-caused injuries. On these measures, the course had a modest but positive effect. On both measures, the data revealed immediate postcourse decreases, followed by increases. For the workdays lost measure, the decrease in days lost in the postcourse period was significant relative to the changes on control wards. Because of the significance of this measure to hospital authorities, this was an extremely important result. However, because these data were highly variable, and because of the large precourse difference in days lost on the study and comparison wards, we believe this result should be interpreted cautiously.

For the assaultive incident data, the line representing the postcourse incidents had a steeper increasing slope than the precourse line. Although this was somewhat disturbing, we believe that two factors were operating to mitigate the positive effects of the course. First, from a research point of view, we would have been more likely to have found a positive effect of the course on the assaultive incident data if we had looked for reductions in our measures for staff who took the course rather than looking for reductions on the wards on which the staff worked. However, the unions which represented the staff made it very clear from the beginning that they would support the study only if we would not keep records of the individual staff who were involved in assaultive incidents, and we believed that in order for the course to be effective we needed full support and cooperation from the union. We also believed that certain individuals might be involved in more assaultive incidents than others because they were highly skilled and were therefore called in when assaults were imminent and that individual data might therefore be meaningless. Because the staff were willing to cooperate with the project if we collected only ward data, and because staff turnover was believed to be very low, we opted to collect only the ward data. Unfortunately, despite assurances from nursing management that no staffing changes would be made on the wards involved in the study unless absolutely necessary, there were many staff changes over the period from the beginning of the course to the end of our data collection period. In fact, although almost all of the staff on the four maximum security wards took the course when it was offered, a year later just over half of the staff on these wards had received training. Thus, we believe that staff turnover may possibly account for the fact that the drop in assaultive incidents after the course was not permanent.

A second explanation of the postcourse increase in assaultive incidents, suggested by several of the staff, was that patients entering the hospital during the postcourse period were more difficult and more assaultive than patients admitted prior to the course. While we have no way of verifying these reports, it was noted that the number of incident reports (filled out by staff on all wards whenever any difficulty was encountered by staff) showed very large increases over the postcourse period in all areas of the hospital. This explanation is also supported by the finding that the number of times medication was ordered for upset patients went up after the course on both study and nonstudy wards, and by the finding that the number of workdays lost by staff on the nonstudy wards was near zero in the precourse period but was substantial in the postcourse period.

As a final test of the course effectiveness, we evaluated whether or not the effects of the course were detectable by the patients on the wards where the staff worked. On a global measure of patient affect, we found that patients on the more secure wards rated themselves as having significantly more

positive affect 6 weeks after the course than 6 weeks before compared to control patients. For the patients as well as the staff, then, the ward atmosphere seemed to have changed so that they felt better about themselves.

We believe that the combined results of all our measures support the conclusion that crisis prevention and intervention training is an important component of an assault reduction strategy in psychiatric institutions. Trainees learned relevant skills, their morale and that of patients improved, and there was a modest improvement on assault-related measures. We believe our data should provide encouragement for those who are interested in developing programs to reduce institutional violence.

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