Staff burnout in a psychiatric hospital: a cross-lagged panel design

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Summary

Previous research has shown that burnout in staff members at psychiatric hospitals is significantly associated with state anxiety and collegial support. The directionality of these relationships may be inferred using a cross-lagged panel design. To do this, 35 staff members representing various clinical disciplines completed measures of burnout, support, and anxiety twice, eight months apart. Burnout comprised three factors: emotional exhaustion, depersonalization, and personal accomplishment. Findings from one cross-lagged panel suggested that emotional exhaustion causes state anxiety. The second panel showed that lack of collegial support caused depersonalization. Understanding causes and effects of burnout for inpatient psychiatric staff may lead to training and resource development that will improve the quality of their work environment.

Introduction

The quality of inpatient care for severely mentally ill patients is closely linked to the quality of staff charged with carrying out this care. Clinical staff who are overwhelmed or emotionally exhausted with their jobs are less likely to provide optimal patient care. Research has described several burnout-related stressors specific to yeoman staff working at inpatient settings (Hackman and Oldham, 1975; Numeroff, 1983). For example, interviews with 13 psychiatric technicians uncovered several stressors including poor communication with other professionals, inability to affect work schedules, and unnecessary paperwork (Browner, Ellis, Ford, Silsby, Tampoya, and Yee, 1987). A factor analysis of a survey of 332 staff members in another psychiatric hospital showed that job-related stressors clustered into two factors: lack of administration control, perceptions that treatment decisions were made by administrators with little input or communication from yeoman staff, and practice-related stressors, stress that resulted from day-to-day duties (Corrigan, 1993).
Maslach (1982) has theorized that burnout has a deleterious effect on the physical and mental health of the job force. Studies on work populations have shown burnout to be associated with health problems (Golembiewski and Munzenrider, 1988; Hamburg, Elliott and Parron, 1982) and work-specific dysphoria (Mattingly, 1977). These effects may result from generalized anxiety that pervades the staff member's life; results of a study with inpatient mental health workers showed burnout to be significantly associated with anxiety levels outside the job place (Corrigan, Holmes and Luchins, 1992). Unfortunately, these findings do not indicate the direction of the relationship. Does worker burnout lead to generalized anxiety? Or, is anxiety primary such that nervous workers are more likely to burnout?

Causal relationships might be inferred by utilizing a cross-lagged panel design in which variables are collected at least twice over time (Kenny, 1975; Marmor and Montemayor, 1977; Rogosa, 1980). Components of a cross-lagged panel are outlined in Figure 1. In this quasi-experimental design, correlations of dependent and predictor variables at time 2 serve as replications of time 1 associations. Of more importance, conclusions about the direction of these associations can be determined by comparing the correlation coefficients representing burnout at time 1 with variables at time 2 (cross-lagged correlation 1–2) versus anxiety at time 1 with burnout at time 2 (cross-lagged correlation 2–1), a goal of this study. Assuming that causal variables precede effect variables, hypotheses regarding level of burnout causing state anxiety are supported if cross-lagged correlation 1–2 is significantly greater than correlation 2–1.

Research has also identified variables that affect burnout. For example, the quality of relationships among workers have been argued to be an important variable in burnout (Golembiewski and Munzenrider, 1988; Leiter, 1991; Miller, Ellis, Zook and Lyles, 1990). Burnout tends to be diminished in work settings where employees are viewed as friendly and management as supportive (Golembiewski and Munzenrider, 1988). Collegial support has a theoretically complex relationship with burnout; support may alternatively represent a resource which a burned out individual does not avail or a buffer that prevents burnout. Social support has alternatively been measured as the size of a person's support network (e.g. how many individuals does a person receive support from) or perceived satisfaction with this system (Sarason, Sarason and Pierce, 1990).

Two studies found that subjects who reported their support network as being satisfactory were less likely to be burned out (Leiter, 1991; Miller et al., 1990). However, path analyses conducted in these investigations were unable to establish causal relationships between the variables. Corrigan and colleagues (1992) also showed burnout to be negatively correlated with perceived collegial support. However, results of subsequent partial correlations conducted in this study suggested that perceived collegial support affected burnout. A second purpose of the present investigation is to examine causal relationships between burnout and collegial support using a cross-lagged panel design. Findings would promote collegial support causing burnout if correlation 2–1 (in Figure 1) is significantly greater than correlation 1–2.

Burnout has been described in terms of three composite factors: emotional exhaustion (feeling overextended and worn out from work), depersonalization (lack of reactivity or impersonal responses to patients), and personal accomplishment (feeling competent and successful on the job) (Maslach and Jackson, 1986). Use of these factors in a cross-lagged panel design may provide convergent and divergent validity for our predictions. For example, state anxiety would be associated specifically with the prolonged weariness implied in emotional exhaustion, but not with depersonalization or diminished personal accomplishment. Similarly, the impoverished interpersonal qualities of diminished collegial support should lead to depersonalization. Lack of collegial support is not expected to be related to emotional exhaustion or personal accomplishment.
Method

Subjects for this study were recruited from the day and evening shift working the extended care units at a state psychiatric hospital located in the south suburbs of Chicago. Extended care staff included nursing, clinical, and administrative personnel. In particular, a subset of subjects \( n = 35 \), comprising staff members who completed dependent measures twice, was drawn from a larger sample \( n = 47 \) who had completed the measures only once at time 1 as part of an earlier study (Corrigan et al., 1992). The larger sample represented 82.5 per cent of the extended care staff. Subjects in the subsample were not found to be significantly different from the original larger sample on any demographic variable, nor on the time 1 variables \( (p > 0.20) \).

Informed subjects who agreed to participate in the study provided information about age, marital status, ethnicity, level of education, and job history. They also completed pencil-and-paper measures of burnout, collegial support, and prolonged anxiety twice, with eight months intervening. And eight-month interval, at the high limit of appropriate time lags (Sims and Szilagyi, 1979), was selected because causal relationships between burnout, state anxiety, and collegial support are not expected to change quickly on relatively static, organizational systems like inpatient psychiatric units. Our previous research showed that the mean tenure of extended care staff was 10.2 years (Corrigan et al., 1992). Measures in the study included:

**Maslach’s Burnout Inventory (MBI)**

The MBI is a 22-item self-report measure that has been widely used to assess burnout in helping professions (Maslach and Jackson, 1986). When completing this measure, subjects rated the frequency with which they experienced job-related stressors on a seven-point Likert scale. Past analyses of the MBI have uncovered three factors: emotional exhaustion, depersonalization, and personal accomplishment. Scores representing personal accomplishment are reversed to compare them to the other two factors.

**Modified Social Support Questionnaire (SSQ)**

Sarason, Levine, Basham and Sarason (1983) developed the SSQ to measure an individual’s perceptions about size and satisfaction of their support network. When completing this pencil-and-paper measure, subjects provided the initials of individuals who support them in generic life problems that are described in seven test questions (e.g. Who can you really count on to be dependable when you need help?). Subjects also reported satisfaction with their network vis-à-vis each life problem on a six-point Likert scale (6 = very satisfied). For purposes of this study, the seven stimulus questions were rewritten slightly to reflect staff members’ perceptions of collegial support at the work setting (e.g. Who can you really count on at work to be dependable when you need help?). The satisfaction score was found to be internally consistent and to significantly correlate with burnout in inpatient staff members (Corrigan et al., 1992). Therefore, it was included in the analyses of the present study.

**State Trait Anxiety Inventory (STAI), state version**

Burnout was thought most likely to be associated with state anxiety; so this version was administered to subjects. Subjects rated 20 statements about their level of anxiety across several items on a Likert scale where 1 is ‘almost never’ and 4 is ‘almost always’ (Spielberger, 1983).
Data analysis

Kenny (Kenny, 1975; Kenny and Harackiewicz, 1979) has argued that two conditions — synchronicity and stationarity — must be demonstrated to assume that a causal model based on crossed-lagged panel correlations is valid. Synchronicity requires that dependent variables be collected at the same point of time 1 and time 2, a condition met in this study. Stationarity assumes that the structural equation for a variable is not different at the two measurement points. Perfect stationarity may be implied when synchronous correlations show no change over time whereas conditions of quasi-stationarity are assumed if changes are constant.

Several indices must be reported so that readers can adequately judge results of studies using cross-lagged panel correlations. Basic results of cross-lagged analyses include the complete correlation matrix: autocorrelations (or test–retest reliability), synchronous correlations, and cross-lagged correlations. Component correlations in these matrices should be significant to investigate differences in cross-lagged associations. Differences between cross-lagged correlation coefficients are tested using the Pearson-Filon test; results from this test are reported as z scores (Peters and Van Voorhis, 1940).

Figure 1. The cross-lagged panel design used in this study to evaluate causal relationships between burnout factors, collegial support, and state anxiety.
Results

The subsample was 48.6 per cent female with an average age of 46.2 years ($S.D. = 8.6$). Subjects were 28.6 per cent single, 51.4 per cent married, and 20.0 per cent widowed or separated. On average, the sample completed 16.0 years of education ($S.D. = 2.4$). Nursing staff (i.e. nurses, mental health technicians, and mental health specialists) comprised 40.0 per cent of the sample and clinical staff (i.e. social workers, activity therapists, psychiatrists, psychologists, and administrators) made up the remaining 60.0 per cent. Staff reported that 88.3 per cent worked a.m. shifts and 11.7 per cent worked p.m.s. The staff was 37.4 per cent African American, 34.5 per cent Euro-American, 10.1 per cent Latino, and 17.5 per cent Asian.

Kenny and Harackiewicz (1979) advised reporting means and standard deviations of dependent variables so that readers might compare results of the cross-lagged panel design to regression analyses that can be estimated from these indices; these values are provided in Table 1. Means of MBI subscale scores were in the middle third of mental health personnel norms for emotional exhaustion and depersonalization; means were in the lower third for personal accomplishment suggesting that this sample experienced less personal accomplishment from their jobs than a standardization group of 730 mental health workers (Maslach and Jackson, 1986). Interpretation of the cross-lagged panel design may be confounded by the reliabilities of component measures at time 1 and 2. Therefore, Cronbach alphas representing the internal consistencies of tests used in this study are also provided in Table 1. These coefficients were similar across time ($p > 0.20$), thereby not biasing interpretation of correlation coefficients in the cross-lagged panel.

| Table 1. Mean, standard deviations, and Cronbach alphas for the three burnout factors, state anxiety, and collegial support at time 1 and time 2 |
|-----------------|-----------|-----------|
| Emotional exhaustion | $M$ | 15.94 | 16.00 |
|                  | $S.D.$ | 12.44 | 11.42 |
|                  | alpha | 0.90 | 0.91 |
| Depersonalization | $M$ | 5.82 | 5.91 |
|                  | $S.D.$ | 5.30 | 5.83 |
|                  | alpha | 0.67 | 0.80 |
| Personal accomplishment | $M$ | 34.88 | 34.88 |
|                  | $S.D.$ | 7.90 | 7.78 |
|                  | alpha | 0.70 | 0.71 |
| State anxiety | $M$ | 32.62 | 30.94 |
|                  | $S.D.$ | 7.95 | 7.33 |
|                  | alpha | 0.66 | 0.77 |
| Collegial support | $M$ | 34.20 | 31.80 |
|                  | $S.D.$ | 10.40 | 10.19 |
|                  | alpha | 0.79 | 0.88 |
Burnout and anxiety

The panels representing the cross-lagged correlations between the three burnout factors and state anxiety are represented in Figure 2. High test–retest correlations ($p < 0.001$) were found for the MBI subscale scores and for state anxiety. However, synchronous correlations for both times 1 and 2 were significant for the emotional exhaustion–state anxiety panel alone. These findings suggest that significant relationships between burnout and state anxiety are specific to emotional exhaustion, and not the other component factors of burnout. Therefore, only findings from the emotional exhaustion panel were examined further.

Synchronous correlations between emotional exhaustion and state anxiety were moderate and not significantly different ($z = 0.31, p > 0.10$) thereby validating earlier findings about the relationship between burnout and state anxiety. Differences in synchronous correlations for this panel supported a quasi-stationarity model. Cross-lagged correlation coefficients are also included in the panel. Results of a Pearson-Filon test assessing differences between cross-lagged correlations were significant, with the correlation between emotional exhaustion at time 1 and state anxiety at time 2 larger than the complementary cross-lagged correlation ($z = 2.22, p < 0.01$).

Personal accomplishment was found to be negatively associated with state anxiety at time 2. Unfortunately, synchronous correlations were not equal across both times, thereby preventing a cross-lagged analysis of the data. However, trends suggested that state anxiety is likely to lead to diminished personal accomplishment at work; note the highly significant cross-lagged correlation between anxiety at time 1 and personal accomplishment at time 2.

Burnout and collegial support

The cross-lagged panel for the factors of burnout and collegial support are summarized in Figure 3. Autocorrelations were again found to be high ($p < 0.01$) and similar. Synchronous correlations at time 1 and 2 were only significant for the depersonalization–collegial support panel. High levels of perceived collegial support were found to be inversely related with reports of depersonalization. Given this pattern of synchronous correlations, only differences in cross-lagged correlations of the depersonalization panel were tested.

Small differences ($z = 0.74, p > 0.10$) between synchronous correlations support a quasi-stationarity model. The cross-lagged correlations between time 1 collegial support and time 2 depersonalization was highly significant, while the complementary correlation between time 1 depersonalization and time 2 collegial support was not significant. Results of a Pearson-Filon test showed a nonsignificant trend was apparent in the differences in cross-lagged correlations ($z = 1.27, p < 0.10$).

Discussion

The objective of this study was to investigate, within a causal inference framework, the relationships of the three component factors of burnout with state anxiety and collegial support. Significant correlations between emotional exhaustion and state anxiety at time 1 and time 2 suggested that the two constructs were highly associated. This finding alone does not suggest whether anxious people are likely to become burned out or emotional exhaustion precedes anxiety. Comparison of cross-lagged correlations, however, implied the direction of this association; i.e. emotional exhaustion leads to more generalized anxiety in inpatient staff.

Absence of correlation between state anxiety and the burnout factors of depersonalization
Figure 2. The correlation matrices representing the three cross-lagged panels for each burnout factor and state anxiety. (*p < 0.05)

and personal accomplishment provides divergent validity for these findings. Namely, the effects of burnout on anxiety were specific to emotional exhaustion. These findings make sense theoretically. Given the definitions of the burnout factors, feeling overwhelmed and worn out seems most consistent with the phenomenological descriptions and physical symptoms of anxiety. Relating anxiety effects specifically to emotional exhaustion also has value for understanding the development of burnout in individual staff members. According to a phase model, the three burnout factors are hierarchically related: depersonalization appears first as a worker is burned out, followed progressively by diminished personal accomplishment and emotional exhaustion (Golembiewski and Munzenrider, 1988). Therefore, burned out staff members show-
ing signs of anxiety are more likely to be emotionally exhausted and, therefore, may have been struggling with work for a relatively long time. The phase model also suggests indicators for which organizational psychologists might be vigilant to forestall deleterious effects of burnout. Staff members showing diminished personal accomplishment or depersonalization may be candidates for intervention that may prevent an even worse aftermath of burnout.

Findings about burnout and anxiety in inpatient psychiatric staff members replicated results of other studies examining the impact of burnout on helping professions (Maslach, 1982). Specific causal inferences would need to be validated on additional samples to test the external validity of these findings. Future research must also determine whether burnout in inpatient staff yields

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**Figure 3.** The correlation matrices representing the three cross-lagged panels for each burnout factor and collegial support. (*p < 0.05*)
poor work performance and frequent absenteeism. Research, in turn, would need to show that diminished work performance and frequent absenteeism lead to worse patient care. Organizational strategies that moderate burnout might be appropriate for diminishing these deleterious effects too.

Findings from this study suggest one variable that might be targeted for affecting burnout. Depersonalization was found to be significantly associated with collegial support at both time 1 and 2 of the study; subjects who perceived their peers as supportive were less likely to report themselves as depersonalized. Examination of differences in cross-lagged correlations suggested that lack of collegial support causes greater depersonalization. This finding is also consistent with a conceptual understanding of interpersonal support. Staff members who perceive their peers as disinterested and unconcerned are likely to adopt similar interactive styles towards their patients. Unfortunately, depersonalization may have a particularly detrimental effect on inpatient psychiatric care where the interpersonal climate of the treatment milieu is important for improved patient functioning (Moos and Houts, 1968; Mosher and Gunderson, 1972).

Enhancing staff perceptions of collegial support may diminish the level of depersonalization experienced by staff members. Moreover, such a strategy may help to thwart the progression of burnout at an early phase. Lack of perceived collegial support may represent a problem of the staff member or the system of staff members on the unit. Team building strategies may be helpful if poor collegial support represents a failure of the organization. For example, staff members who participate in ‘quality circles’ that foster participative decision-making demonstrate higher morale and optimism on the job (Dyer, 1977; Earley, 1985; Lawler, 1989; Deci, Connell and Ryan, 1989). Members of quality circles are trained in problem solving methods which include definition and clarification of the problem-to-be-solved, brainstorming possible solutions to the problem, and evaluation of these solutions. This training is also designed to increase members’ knowledge about and skill at conducting meetings and facilitating group decision-making.

Alternatively, perceived lack of collegial support may represent a deficiency in the burned out staff member. Individuals with poor social skills are less likely to perceive their peers as supportive (Galvin, 1985). Therefore, assertiveness and conversation skills training may equip depersonalized staff members with a repertoire of interpersonal behaviors that will help them obtain collegial support.

Collegial support alone will probably not decrease depersonalization. Other mitigating variables that might be the focus of future research include coping skills — staff members with large networks may have greater coping skills which they can call on to diminish burnout (Latack, 1986) — or leadership — those settings with good collegial support may have program champions who keep staff motivated and excited about their work (Howell and Higgins, 1990). Identification of other factors that mitigate burnout is important to further inform staff development.

References


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