Determinants of Incidents in a Forensic Psychiatric Program

Michael W. Decaire (c.

M.A. Thesis

Lakehead University

June, 2002

Dr. Michel Bedard

Canada

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Abstract

Nursing staff in forensic psychiatric contexts are significantly more likely to be the victims of assault-related incidents than patients.   Evidence in the scientific literature warrants the consideration of interpersonal factors between nursing staff and patients and these factors relationship to incidents.   The purpose of this study was to further investigate the nature of this relationship. Consistent with previous investigations, a disproportionate number of patients were responsible for the majority of incidents.   The high frequency of schizophrenia related incidents was however, inconsistent with the literature.   An examination of nursing team incident involvement showed significant frequency of incident variation with only non-violent categorized incidents.   A number of correlational relationships were observed between incidents, personality, and individually perceived work environment factors, relationships which are explored further within this paper.

Determinants of Incidents in a Forensic Psychiatric Program

All psychiatric-type institutions have clear and relevant concerns regarding the issue of client/inpatient-based incidents. Estimates regarding the frequency and severity of violent incidents vary. There is currently no generally accepted definition of violence within the literature (Soliman & Hashim, 2001). Definitions have varied in their inclusion of attack on nursing staff, attack on others, verbal and threatening behavior, self harm, and property damage (Armond, 1982; Dietz & Rada, 1982; Fottrell, Baley, & Squizzonni, 1978; Haller & Deluty, 1988; Owen, Tarantello, Jones, & Tennant, 1998a). Undoubtedly, such variation makes the synthesis or meta-analysis of inpatient violence data difficult.

Considering the criminal and potentially aggressive nature of the inpatients being treated, forensic based psychiatric institutions, in particular, have increased rationale for incident-based concerns. Larkin, Murtagh, and Jones (1988) investigated the nature of incidents within a secure psychiatric facility. Of 1144 incidents investigated, 61% were characterized as serious. Additionally, 31 of these incidents were identified as life-threatening to either staff or clients.

Several studies have shown that nursing staff in these forensic contexts are significantly more likely to be the victims of assault-related incidents than patients (Kennedy, Harrison, Hillis, & Bluglass, 1995; Larkin, Murtagh, & Jones, 1988; Owen, Tarantello, Jones, & Tennant, 1998b). Staff-related injuries in forensic institutions have been shown to be of greater frequency and seriousness than those found in high-risk labor occupations (Love & Hunter, 1996).

Injuries from work related incidents in these forensic contexts may reach levels as high as sixteen injuries per one hundred nurses per year (Carmel & Hunter, 1989). Forty-three percent of psychiatric nursing staff involved in violent patient related incidents felt that their work environment was unsafe (Gordon, Goedon, & Gardner, 1996). Inpatient violence has also proven to be a significant drain on the financial resources of health care systems. Whittington (1994) stated that in the United Kingdom the annual cost of patient assault on nursing staff is estimated to be in excess of 45 million dollars.

Estimates on the number of incidents occurring per patient have varied greatly, with violent incidents per patient ranging between 0.07 to 7.9 annually (Fottrell, Bewley, & Squizzonni, 1978; Torpy & Hall, 1993). However, the majority of incidents appear to be the result of a

disproportionately small number of patients (Aiken, 1984;
Hardie, 1999; Kennedy, Harrison, Hillis, & Bluglass, 1995;
Owen, Tarantello, Jones, & Tennant, 1998a; Owen, Tarantello,
Jones, & Tennant, 1998b). Kennedy, Harris, Hillis, and
Bluglass (1995) analyzed 981 incidents occurring within a
secure forensic unit during a four year period. The authors
noted that the primary inpatient population displayed little
or no aggressive behaviors and incident involvement.
However, a distinct group, identified as markedly
unmanageable, was found to be significantly over-represented
in incident frequency. Seventy-two percent of incidents
occurring over the four year period were perpetrated by only
27 inpatients (8% of the patient population). It was noted
that only 4% of documented incidents involved a non-repeat
offender.

Research has shown the existence of several patient-
based warning signs regarding the potential occurrence of
incidents (Owen, Tarantello, Jones, & Tennant, 1998b;
Powell, Caan, & Crowe, 1994). The profile of the high-risk
offending patient has consistently been shown to be one of a
young male who typically displays a history of inappropriate
behavior and multiple psychiatric hospitalizations (Ball,
Young, Dotson, Brothers, & Robbins, 1994; Grosz, Lipschitz,
Eldar, Finkelstein, Blackwood, Gerbino-Rosen, Faedda, &

Plutchik, 1994; Kennedy, Harrison, Hillis, & Bluglass, 1995; Rabinowitz & Mark, 1999; Walker & Seifert, 1994).

Volavka, Mohammad, Vitrai, Connoly, Stefanovic, and Ford (1995) retrospectively evaluated documentation regarding the arrests of psychiatric patients for offenses occurring within the hospital inpatient setting. Of 830 incidents identified by the authors as serious, 73 inpatient arrests were made within the patient population, which averaged approximately 1740 inpatients through the 30-month period of retrospective analysis. Sixty-eight percent of incidents were perpetrated by repeat offenders, 79% of which were identified as violent.

Compared to inpatient controls, the arrested inpatient was significantly more likely to be a young male, of ethnic minority, with a shorter length of stay. When compared to the control inpatient population, the offending patients could not be differentiated using the presence, or nature of, Axis I diagnosis, with the exception of substance abuse disorder. The existence of a personality disorder or a substance abuse disorder was significantly predictive of offending behavior, with 90% of arrested inpatients having met the diagnostic criteria for either disorder. Volavka and colleagues (1995) noted that the offending inpatient is demographically more representative of membership within the

general criminal offending population than a psychiatric inpatient population.

While some incident based findings appear to be consistent and thereby potentially generalizable across multiple geographic and cultural contexts, the numerous differences that remain within the literature questions the applicability of these findings outside of the test population. The lack of Canadian data reflects the need for investigations within Canadian forensic institutions, so that the generalizability of such data can be further determined.

Whittington and Wykes (1994a) stated that research in the area of psychiatric incidents has been viewed within an individualistic framework, examining incidents as a manifestation of the patients' psychopathology. However, they have suggested that theoretical evidence exists to warrant the consideration of interpersonal factors between nursing staff and patients and their relationship to within hospital incidents. The occurrence and severity of incidents is proposed to be the result of a series of interactions between patient attributes, nursing staff attributes, and the environmental context.

Owen and colleagues (1998a) completed a prospective analysis of five psychiatric units in order to help predict

aggressive and violent behavior. One thousand two-hundred and ninety-eight incidents were examined during a seven-month period in which incident frequency and seriousness, as well as the interactions between staff and patients were examined. Of the 1298 recorded incidents, 78% were directed towards nursing staff. Factors significantly predictive of violence included increased number of nursing staff, increased number of staff on leave, patients with a history of violence instigation, and the increased use of detainment and seclusion. Fifty-eight percent of recorded incidents were identified as serious. However, the seriousness of the incident was not correlated with the rate of reporting of such incidents. Therefore, appropriate actions were not consistently applied to serious incidents (Owen, Tarantello, Jones, & Tennant, 1998a).

Numerous studies have shown that certain psychiatric nursing staff members are more likely to be the victims of assault by inpatients (Whittington & Wykes, 1994a; Whittington & Wykes, 1994b; Whittington & Wykes, 1996). Wittington and Wykes (1994b) found that few nursing staff are repeatedly assaulted. However, those who had been assaulted on multiple occasions were significantly more likely to have been assaulted by the same individual. Such studies suggest that beyond individual patient

characteristics, staff attributes and the unique staff-patient relationship may be key factors in the development, type, frequency, and severity of incidents. Wittington and Wykes (1994b) stated that the nature of staff and patient relationships may be the key factor in inpatient related violent incidents.

Nursing staff personality attributes, stress levels, and work environment perception may contribute, both individually and interpersonally, to work related behaviors, and thereby to patient related incidents. It is clear that personality traits play an important role in job performance (Miner, 1992). The trait position states that, "built in personality pre-dispositions which, because of their rigid, compulsive nature, result in the same kind of action, regardless of situation" (Miner, 1992, p. 145). In reality, an interactional view, in which job performance is a result of both personality traits and environmental context, is more likely (Schneider, 1987). This interaction, which includes interpersonal relations, may be predictive of a staff members' involvement in incidents and likelihood of victimization.

Variations in personality have recently been explained sufficiently by a five dimensions of personality model (Costa & McCrae, 1994). The five factor personality model

entails neuroticism, extraversion, openness, agreeableness, and conscientiousness. Many of the five dimensions of personality have been linked to work satisfaction, performance, and aggression (Barrick & Mount, 1993; Caprara, Barbaranelli, Pastorelli, & Perugini, 1994). Those identified as low agreeableness and high neuroticism have shown a tendency to present with high levels of irritability, rumination, and emotional reactivity, often externalized as hostile aggression (Baron & Byrne, 1997).

Stress may also play a role in staff behavior, and thereby influence the relationship between nursing staff members and patients. Stress hypotheses suggest that up to a certain level, stress is beneficial to job performance (Miner, 1992). At an optimum level stress leads to arousal and increased attention. However, when stress increases beyond optimum levels, there is evidence of a performance decrease, job dissatisfaction increase, and a rise in employee absenteeism (Ivancevich & Matteson, 1980; Miner, 1992).

Clearly related to stress is the concept of burnout. Burnout involves a chronic stress reaction including emotional exhaustion, loss of interest and trust, and increased feelings of concern (Maslach, 1982). Practitioners experiencing burnout tend to display a decline

in their ability to effectively deal with clients by reducing idealism and increasing irritability (Miner, 1992).

Beyond the evaluation of violence predictors, there is a potential applicability of the knowledge regarding the staff-client violence dynamic to nursing staff management. Nursing staff provide the front-line support and management for psychiatric inpatients. Without high-quality nursing care, the provision of an effective and valuable psychiatric care-system is difficult (Ito, Eisen, Lloyd, Yamada, & Tachimori, 2001).

The maintaining of a consistent and qualified nursing team is of particular concern to any health-care environment. Lower job satisfaction has often, and not surprisingly, been significantly linked to high nursing-staff turn-over rates (Ito, et al., 2001). A significant negative relationship has also been observed between levels of perceived supervisory support and ones' intention to leave his/her job (Ito et al., 2001). Tai and Robinson (1998) showed that in a non-psychiatric nursing context, such intentions to leave ones job due to low supervision support was significantly related to job turn-over.

Risk of assault has also been found to be a significantly predictive factor in nursing turn-over, with a high perceived risk of assault being significantly related

to individual psychiatric nursing staff members intention to leave their current position (Ito et al., 2001). Approximately 85% of psychiatric nursing staff subjects perceived themselves as being at risk of assault within their work environment. Interestingly, actual rates of assault were not a significant predictor of nursing team members' intention to leave their job. The relationship between risk of assault and nursing job turnover may in fact be an effect of individual perception and personality rather then a reflection of actual risk within the work environment.

While it is clearly suggestive that personality, stress, and burnout may be predictive of incident involvement, the exact relationships of these factors upon nursing staff members' interaction with patients, and the incidents that occur within these relationships, have not yet been thoroughly explored. The purpose of this study was to investigate the nature of this relationship. The proportion of incidents occurring within unique nursing staff teams was examined. Additionally, an exploration of the nature of the relationship underlying the distribution of incidents was performed. The proportion and type of incidents that occur were compared across individual nursing staff teams. It was hypothesized that there would be a

disproportionate number of incidents distributed between the nursing team groupings, due to previously described variations in staff member incident frequency and the expected uniqueness of each of these staff teams. The nature of this interaction was further examined using an exploratory analysis. Staff personality attributes (neuroticism, extraversion, openness, agreeableness, and conscientiousness), work satisfaction-burnout, demographics, patient attributes (psychiatric history, demographics), and the environmental context (work environment) were explored. Regarding staff member personality characteristics, it was hypothesized that agreeableness would be negatively correlated with incidents, while neuroticism would be positively correlated. Additionally, low levels of work satisfaction and high levels of burnout were expected to be correlated with the occurrence of incidents.

Method

Participants

Approximately 25 full-time registered nursing staff working within a minimum security forensic psychiatric facility at Lakehead Psychiatric Hospital were approached to participate in the study on a voluntary basis. Additionally, the medical records of approximately 80

current and previously institutionalized (within the one-year retrospective period) forensic psychiatric patients were accessed.

Approximately 50 nurses from two non-forensic wards within the same institution were approached to compare staff attributes, work satisfaction, and burnout across different types of psychiatric wards.

Measures

Staff Personality. Personality was determined using the 60-item NEO Five-Factor Inventory (NEO-FFI) (see Appendix D). Psychometric analysis of the NEO-FFI has shown it to be a valid and highly reliable measure of neuroticism, extraversion, openness, agreeableness, and conscientiousness. Significant correlations between the NEO-FFI and the NEO-Personality Inventory, a more comprehensive measure of the same five factors, suggest strong convergent validity (Costa & McCrae, 1989).

Work Satisfaction. Work satisfaction and employee burnout was measured using the twenty-two item Maslach Burnout Inventory-Human Services Survey (MBI-HSS) (see Appendix B). The MBI-HSS evaluates the manifestation of employee burnout within such human services institutions and health care settings as nursing, psychology, and ministry,

along with additional socially-relevant occupations. Items
are evaluated upon a six-point Likert scale resulting in
overall scores on three sub-scales: emotional exhaustion,
depersonalization, and personal accomplishment. The authors
define emotional exhaustion as emotional over-extension and
exhaustion as a result of one's work.

Depersonalization is defined as an unfeeling and
seemingly impersonal response towards the recipients of
one's services. Personal accomplishment includes feelings
of competence and the successful achievement within the work
setting (Maslach & Jackson, 1986). Maslach and Jackson
(1986) characterize employee burnout within these three
domains as a continuous variable.

Burnout is indicated by high levels of emotional
exhaustion and depersonalization with low levels of personal
accomplishment.

Psychometric evaluations of the MBI-HSS have showed
that the instrument possesses both acceptable reliability
and validity (Maslach & Jackson, 1986). The internal
consistency of the three scales ranges between .71 and .90.

Work Environment. Quality of the work environment was
evaluated using the Work Environment Scale (WES), a 90-item
true or false questionnaire (see Appendix C). The WES is a
ten sub-scale measure of social climate within work

settings.   Social climate is defined as a measure of an environments task orientation, rigidity, support availability, and environmental control (McCainey, 1998).

Environmental task orientation, rigidity, support, and control, have been shown to be related to morale, achievement, psychological well being, and productivity (Moos, 1986).

For the purpose of this study the "real form" of the WES was utilized.   The WES-"real form" is a measure of employee perception regarding the current work environment (Moos, 1994).   The WES is initially sub-divided into three domain areas: (1) relationship domain, (2) personal growth domain, and (3) system maintenance and system change.   The relationship domain considers an individual's involvement within his/her setting, including his/her assistance of others, and the spontaneity of his/her outward emotional expressions.   This domain is derived from three sub-domains: involvement, peer cohesion, and supervisor support.   The personal growth domain assesses ways in which the work environment promotes personal growth.   Sub-domains evaluated include autonomy, task orientation, and work pressure.   The system maintenance and system change domain evaluates the orderliness of the environment, the level of control, and the environments' responsiveness to change.   This final

domain is derived from the job clarity, control, innovation, and physical comfort sub-domains (Moos, 1994). For the purpose of this study, the sub-domain level of category division was used for analysis.

The WES sub-scales have displayed internal consistency, with Cronbach's alphas ranging from .69 to .86.

Staff demographics. The demographic information of nursing staff volunteers was collected with the Human Services Demographic Data Sheet, a comprehensive demographic checklist that is part of the MBI-HSS.

Absenteeism. Absenteeism rates were determined for all full-time staff upon the three comparison units. Absenteeism data was categorized in four exclusive ways: (1) sick days, (2) absent without pay, (3) workers' compensation, and (4) special absences.

Special absences included bereavement and other reasons not appropriately categorized into the other groupings. Total absences was derived from the sum of the aforementioned categories.

Incidents. Incidents were categorized, non-exclusively, by the following typologies: non-violent incidents, violent incidents, verbal incidents, and self-harm incidents. Non-violent incidents included actions such as failure to return from a leave of absence, violation of

ward rules, and other non-aggressive or non-self-harming behaviors. Violent incidents included any outward physical expressions of aggression, either directed towards another individual, or towards property in an attempt at intimidation. Verbal incidents entailed any non-physical expressions of aggression such as verbal threats. Self-harm incidents included actions resulting from attempts at suicide or self mutilation.

These independent categorizations were also combined in three unique ways: (1) total incidents; (2) total incidents excluding non-violent incidents; and (3) aggressive incidents. Total incidents was derived from the sum of the four initial incident categorizations, while the exclusion of incidents characterized as non-violent from this total derived the second combined category. This second combination was used due to an expectation that non-violent incidents may be less related to specific staffing teams. The final categorization, aggressive incidents, included a combination of verbal and violent incidents into a category that represented all external presentations of aggressive behavior.

Individual incident data was determined for each staff member by examining the frequency at which each staff member was present on the ward during an incident. Additionally,

this raw incident frequency value was balanced by an
incident ratio conversion for each staff member. The ratio
variable was derived in order to control for the number of
days worked, by dividing the frequency of incidents by the
number of days worked in the year for that staff member.

Incidents were analyzed according to the primary
diagnosis of the patient. The diagnostic categories were:
(1) mood disorders, (2) psychotic disorders, (3) personality
disorders, (4) substance abuse disorders, (5) deferred
diagnosis, and (6) other diagnosis. Mood disorders included
both unipolar and bipolar depressive diagnosis. Psychotic
disorders included patients with schizophrenia, unspecified
psychotic disorders, and acutely psychotic schizoaffective
disorders. Individuals with a primary diagnosis of an Axis
II disorder were categorized as personality disordered.
Substance abuse disorder included individuals with a primary
diagnosis of alcohol or narcotic substance abuse. Other
diagnoses included several, non previously categorized
diagnoses, such as anxiety, brain injury, bereavement, and
mental retardation. Patients were categorized exclusively
into a primary diagnostic category.

Procedure

Nursing staff participants were independently administered the psychometric evaluation package at the Lakehead Psychiatric Hospital. The package included: (1) the NEO-Five Factor Inventory, (2) the Maslach Burnout Inventory-Human Services Survey, (3) the Work Environment Scale, and (4) the Human Services Demographic Data Sheet.

Prior to completing the questionnaire package, staff participants were asked to read through and complete the package's cover letter and consent form. Staff participants were informed that they were participating in a study about the determinants of incidents and absenteeism in forensic programs within psychiatric hospitals, in which patient pre-disposition, staff attributes, and environment were all to be examined. Additionally, staff were informed of their right to refuse to participate in any portions of the study, or to withdraw at any time.

The questionnaire package was completed by staff participants at their own leisure, requiring approximately thirty minutes of their time.

Independent of the psychometric package, staff administration records were evaluated to assess the individual's rate of absenteeism over a one year period (September 1999 - September 2000).

Secondly, a retrospective analysis of incident records was carried out in order to characterize the type of incidents that occurred on the forensic unit during the previous year (September 1999 - September 2000).

Additionally, the demographic and diagnostic information of the forensic inpatients involved, which nursing staff team and team members were present during the incident, and which team was present prior to the incident were determined.

Statistical Analysis

Incidents. Incidents were first categorized by the diagnostic characteristics of the patient involved in the incident. The frequency of mood disorders, schizophrenic/psychotic disorders, substance abuse disorders, personality disorders, deferred diagnosis, and other exclusive disorders were analyzed for their frequency of involvement in incidents by a chi-square goodness of fit test. Expected values for the frequencies of incidents per disorder were determined by the actual ratio of each exclusive diagnosis within the forensic inpatient population during the retrospective year of analysis.

Team-based incident frequency relationships were analyzed by a second set of chi-square analyses, with the

frequency of each incident type being compared to the expected frequency for each team.

The frequency of incidents occurring following a team's shift was also examined in order to explore potential residual effects of a particular team on patient incidents. A related analysis followed this procedure but limited the incidents of interest to those occurring within evening shifts. The evening incident analysis was formed due to the possibility that the residual effects of the previous shift's team during day incidents might be minute due to limited exposure to the previous team during periods of sleep. A final chi-square analysis was carried out on the combination of the frequency of a team's direct incidents and incidents a team was the prior shift too.

Staff incident variables were examined by correlational analysis with a number of demographic variables. Due to misleading incident data from the unequal periods of employment for staff members the previously mentioned incident-ratio variable was used when applicable.

Absenteeism. Absenteeism variables were compared across the three distinct psychiatric ward types in order to identify any variation between forensic unit characteristics and the traditional acute care and psychogeriatric environments by a one-way ANOVA. Due to a noticeable

outlier presence in the absenteeism data, a natural log transformation was used for the majority of absenteeism related analysis. An inverse transformation was used if a variable persisted in producing outlier effects.

Individual staff variations on absenteeism were explored via correlational analysis with incident and demographic variables in order to identify any incident based and staff suitability relationships.

Personality and Environment. The three personality and work environment measures (HSS, NEO, and WES) were initially compared across wards to identify any variation between the staff and ward characteristics of the unit of primary interest (forensics) and the comparative units (acute care and psychogeriatrics) by a one-way ANOVA.

With the factors underling team-incident frequency variation being of primary interest, a one-way ANOVA comparing nursing teams and personality characteristics was warranted. However, due to a low response rate within specific nursing teams such an analysis was potentially misleading. A comparison between teams with satisfactory response rates was performed for exploratory purposes only.

The potential relationship between work environment and personality factors upon forensic incidents was explored by

a Pearson correlation. A comparison was made between the personality and work environment variables and absenteeism.

To explore the possible relationships between work environment and personality upon incidents, a median split was performed upon the incident data so that staff members with comparatively high and low incident frequencies could be contrasted upon these factors.

Results

Incidents-Patient. During the retrospective period, 80 unique inpatients were housed within the forensic unit. The population included primarily individuals with a diagnosed psychotic disorder, with 36% (n = 26) of the population having a primary diagnosis of either schizophrenia or a related psychotic disorder. Personality disorders were the second most common diagnosis (n = 11) representing 15% of the forensic patient population, followed by mood disorders (n = 9, 12.5%), substance abuse disorders (n = 8, 11%), deferred diagnosis (n = 7, 10%), and mental retardation (n = 4, 5.5%). Seven individuals (10%) were categorized diagnostically as "other" due to the comparatively low frequency of the included diagnosis. Eight individuals were undiagnosed, nor given the deferred label, due to the ward's policy of using working diagnoses with inpatients, providing official diagnoses only on discharge.

Thirty percent of this population ($\underline{n}$ = 24) were involved in at least one of the 52 categorized incidents. Of these individuals, 10 committed only a single incident. Fourteen multiple offending individuals were responsible for 43 of the 52 incidents (81%). Eight individuals, representing only 10% of the inpatient population, committed 30 (58%) incidents.

Patients involved in incidents included 15 male and 9 female inpatients ranging in age between 22 and 71 years ($\underline{M}$ = 38.21). Male inpatients involved with incidents were on average older ($\underline{M}$ = 40.33) than their female counterparts ($\underline{M}$ = 34.66). However, this difference was not significant, $\underline{F}(1, 22)$ = 1.143, $\underline{p}$ = .297.

Incidents were categorized by the diagnostic characteristics of the patient involved in the incident. There was significant variation in frequency of incidents per diagnosis when compared to the expected values, $\chi^2(5, \underline{N}$ = 52) = 14.691, $\underline{p}$ = .012. The diagnosis of schizophrenia and psychotic disorders were responsible for the greatest number of incidents ($\underline{f}$ = 29). While schizophrenia and psychotic disorders were the most common inpatient diagnosis, the frequency of incidents observed by the population was noticeably greater than the expected frequency ($\underline{f}_e$ = 17.7). Individuals with substance abuse and

deferred diagnosis were found to be less prone to incidents ($\underline{f}$ = 1) than expected ($\underline{f}_e$ = 5.4 and 4.8 respectively).

Due to the large difference between the expected and actual frequency of incidents involving inpatients with psychotic disorders, a phi-coefficient was determined for the strength of association between psychotic disorders and incidents. A significant association was found between the presence of a diagnosed psychotic disorder and the occurrence of incidents, phi coefficient = .3773 ($\underline{p}$ < .005). This pattern of association between psychotic disorders and incidents also occurred within violent incidents, phi coefficient = .3899 ($\underline{p}$ < .005).

Incidents - Team. Of primary interest to this study was the potential variation in frequency of specific incident types between different nursing teams within the forensic psychiatric ward.

The first analysis compared the frequency of each incident type by the expected frequency for each team using a chi-square analysis. With the exception of the non-violent incident category there was no significant difference in the frequency of incidents across forensic nursing teams (Table 1). The frequency of non-violent incidents, however, did vary between teams to an extent greater than expected by chance, χ^2 (3, $\underline{N}$ = 52) = 8.909, $\underline{p}$ = .031. The frequency of

non-violent incidents per team ranged between zero and nine (Table 2).

The frequency of incidents occurring following a team's shift was also examined, in order to explore potential residual effects of a particular team on patient incidents. As displayed in Table 3, there appeared to be no significant effects of the prior shift team on any of the incident categorizations. Similar results were found when chi-square analyses were carried out on the effects of prior team on when only evening incidents were included (Table 4).

A final chi-square analysis was carried out upon the forensic nursing teams and the combination of a team's incidents and the frequency of incidents when that teams was on duty in the shift prior to the incident. Like the initial analysis, non-violent incidents occurred at a significantly varied frequency between teams, χ^2(3, $\underline{N}$ = 40) = 7.800, $\underline{p}$ = .050. Consistent with the previously seen pattern of results, the frequency of the remaining incident categories were not significantly different between teams (Table 5).

Incidents - Staff. Staff participants included both males and females with a large range of departmental and organizational experience (Table 6). Several staff-related continuous variables were explored for their potential

relationships with patient incidents. All incident
categories, with the exception of self-harm incidents,
displayed a positively correlated relationship with the
amount of days a staff member worked (Table 7). As would be
expected, the greater number of days a staff member worked,
the higher the frequency of incidents to which they were
present for. Self-harm incidents, which did approach
significance, did display a positive trend relationship with
days on, $r(27) = .373$, $p = .055$. However, the limited
frequency of this event limits much of the ability to
interpret the self-harm findings. The positive relationship
between the number of days worked and incident data
justified the use of the absenteeism balancing incident-
ratio conversion.

When examining the relationship between staff tenure in
the department and incidents, a number of significant
relationships were uncovered. The total number of incidents
was negatively correlated with individuals' length within
the department, $r(11) = -.674$, $p = .023$. Explicitly, staff
with more years of experience in the department were
associated with fewer incidents. Non-violent incidents also
shared this negative relationship with departmental
experience, $r(11) = -.608$, $p = .047$. However, self-harm and
experience within the department were positively related,

$\underline{r}(11)=.699$, $\underline{p}=.017$. The negative relationships between tenure and violent or verbal incidents alone approached significance (Table 8).

The examination of the incident-ratio data with departmental experience suggests that absenteeism may have confounded a number of the aforementioned incident and departmental experience relationships. As presented in Table 9, the relationship between departmental experience and total number of incidents, aggressive incidents, violent incidents, and verbal incidents all declined to non-significance when a balanced ratio of incidents was used to control for the number of days worked in the year. Non-violent incidents did retain their relationship with departmental experience, in fact increasing in effect size when comparisons included the non-violent ratio factor, $\underline{r}(10) = -.727$, $\underline{p} = .017$. The relationship between one having greater levels of departmental experience coinciding with decreased frequency of reported non-violent incidents seems strong. While retaining only a trend level of probability, the self-harm ratio variable continued to show a positive relationship with departmental experience when compared to the non-ratio variable, $\underline{r}(10) = .601$, $\underline{p} = .066$.

Further examination of the incident ratio data also found several significantly positive correlations between

staff members' age and the frequency of incidents, suggesting that that the aforementioned decreased incident frequency in relation to departmental experience is not a product of staff members' age. The largest effect size (r^2 = .553) was displayed between age and the ratio-determined violent incidents, $r(10)$ = .744, p = .014. Thereby, the highest frequency of violent incidents occurred when older staff were present. This finding was repeated with the aggression incidents ratio, $r(10)$ = .649, p = .042, but not with verbal assaults alone, $r(10)$ = .486, p = .154. The total number of incidents with the exclusion of non-violent incidents did produce similarly significant, and positively related, results, $r(10)$ = .701, p = .024. Neither self-harm or non-violent incidents showed a significant relationship with age (Table 10).

Absenteeism. Patterns of absenteeism were examined across the different wards within the study and secondly within individuals. Sick days, absence without pay, special absences, and total absences were compared across wards by an analysis of variance. Variations in the rate of sick days approached significance, $F(2,74)$ = 2.490, p = .090. Rates of absenteeism without pay, workers compensation days, special absences, and total absences displayed no significant variation between wards (Table 11).

A positive relationship was observed between age and the natural transformation of sick days, in that older staff members tended to have a higher frequency of sick days, $r(24) = .521$, $p = .009$. No significant relationships were found between age and the remaining absenteeism categories, possibly an effect of the limited frequency of each of the remaining categories (Table 12).

Related somewhat to age, but not exclusively, an individual's length within the organization also appears to be positively related to the frequency of sick days. The previously used natural log of sick days was positively related to an individual's tenure within the organization, $r(27) = .674$, $p<.001$. The aforementioned relationship was replicated with departmental experience, with length in the department sharing a significant relationship with the natural log transformation of the sick days variable, $r(24) = .622$, $p<.001$. As was observed with the age based correlations, no significant relationships existed between organization or departmental experience and the remaining low frequency absenteeism variables (Table 13).

NEO five factor. The NEO-FFI was analyzed across wards and within individual subjects. Each of the five factors were analyzed for the forensic unit and the two comparison units by a one-way ANOVA. All but one of the factors

appeared to be relatively stable across units (Table 14).
The NEO-N factor that describes an individual's level of
neuroticism, however, displayed significant variation across
the studied wards, $F(2,29) = 6.176$, $p = .006$. Staff members
working in the forensic unit produced responses consistent
with lower neuroticism levels ($M = 11.539$) than those upon
comparison unit two ($M = 20.779$), Tukey $p=.004$. The mean
NEO-N score of comparison unit one ($M = 15.600$) was not
significantly different than either of the other psychiatric
units.

An analysis of team NEO variations focusing on full-
time, permanent staff, was completed by a one-way ANOVA.
However, an appropriate analysis seemed impossible due to
team-related survey response rates. Teams 3 and 4 both
achieved an approximately 80% response rate with four
subjects each. However, of Team 1 only a single staff
member responded, while no members of Team 2 completed the
questionnaire package. An analysis comparing the NEO factor
means was carried out upon Teams 3 and 4 alone. Due to the
limited sample size the analysis was performed only to
ascertain whether further exploration of team variations
would be warranted in future research. As shown in Table
15, analyses found no significant differences between any of
the five NEO personality factors of Teams 3 and 4.

The NEO personality factors did display a number of significant individual-based relationships. Most relevant to this study was the NEO factor relationships with incident data. Correlations were performed between the NEO factors and the incident categorization variables. Openness resulted in the only significant relationship, with staff openness levels being positively related to ratio controlled number of non-violent incidents, $r(10) = .729$, $p = .017$. No other relationships of statistical significance were observed (Table 16).

A final NEO-incident based analysis used a incident frequency median split to categorize staff as high or low incident groups. The only significant variation observed between the high and lower incident groupings was with the mean values upon the NEO extraversion factor, $F(1,8) = 7.848$, $p = .023$. Individuals in the low incident group displayed significantly higher extraversion scores ($M = 34.6$) than their high incident colleagues ($M = 27$).

The self-reported number of assaults was found to be significantly correlated to the NEO extraversion factor, $r(32) = .440$, $p = .012$. Staff with higher levels of reported extraversion tended to also be more frequently the victims of patient assault. These results appear

contradictory to the aforementioned self-report frequency of victimization results.

Work environment scale. Analysis of variance was completed in order to identify any relationships between the ten WES sub-scales (involvement, peer cohesion, supervisory support, autonomy, task orientation, work pressure, clarity, control, innovation, and physical comfort)and either of the nursing units or the four forensics nursing teams.

Clarity of the work environment was significantly different between the three units, $\underline{F}(2,32) = 6.851$, $\underline{p} = .003$. The forensic unit displayed a significantly greater work environment clarity ($\underline{M} = 6.77$) than comparison ward one ($\underline{M} = 3.60$), Tukey $\underline{p} = .002$, but not comparison unit two ($\underline{M} = 5.25$).

Responses regarding the level of supervisory support also varied significantly between the forensic units and comparison wards, $\underline{F}(2,32) = 5.081$, $\underline{p} = .012$. Post hoc comparisons again showed significantly higher ratings for the forensic unit ($\underline{M} = 6.23$) when compared to comparison ward one ($\underline{M} = 3.40$; Tukey $\underline{p} = .009$). No significant differences between the supervisor support means between comparison unit two ($\underline{M} = 4.67$) and the other units were displayed.

A final significant variation between ward and work environment measures displayed a significant difference between the levels of task orientation by nursing unit, $F(2,32) = 3.390$, $p = .046$. A Tukey HSD post hoc comparison again found significant difference between the forensic unit's responses ($M = 6.615$) and means for comparison unit one ($M = 4.20$; Tukey $p = .037$. As with the aforementioned WES sub-scales, post hoc comparisons found no significant difference between the means of comparison ward two ($M = 5.75$) and the other units. The remaining ANOVAS, comparing the other WES sub-scales between units, found no significant differences between the three wards (Table 17).

As with the NEO personality inventory, teams 3 and 4 were compared in a strictly exploratory analysis, in order to determine any directions for further research. A one-way ANOVA displayed significant variation between teams 3 and 4 on their mean responses on the WES autonomy variable, $F(1,6) = 8.727$, $p = .025$, in which Team 4 ($M = 7.75$) described their work environment as consisting of increased autonomy in comparison to group 3 ($M = 5.75$). No other WES sub-scale displayed similarly significant variations (Table 18).

Interestingly, the incident median split comparison displayed a trend, but non-significant relationship, with autonomy ratings and experiences of high compared to low

frequency of incidents, $\underline{F}$ (1,8) = 5.120, $\underline{p}$ = .053, suggesting that individuals with high levels of reported autonomy experienced more incidents than their low autonomy rated colleagues. Table 19 displays the remaining median split incident analysis on the WES sub-scale, none of which reached statistical significance.

Multiple analyses were performed to examine individual differences amongst scores on the WES sub-scales. Correlational analysis indicated a number of significant trends within the respondents. The WES's measure of physical comfort displayed significant relationships between an individual's experience at his/her current type of work, $\underline{r}$(35) = .434, $\underline{p}$ = .009. This increased level of physical comfort within one's work place was also displayed by one's length within his/her particular department, $\underline{r}$(33) = .430, $\underline{p}$ = .013. However, physical comfort was not significantly related to an individual's length of time working within the organization itself, $\underline{r}$(34) = .276, $\underline{p}$ = .114.

Several significant relationships between WES scales and incident data were observed (Table 20). The WES scale Autonomy was found to be positively related to the occurrence of the ratio controlled non-violent incidents variable, $\underline{r}$(10) = .673, $\underline{p}$ = .033.

Task Orientation was found to have a significant negative relationship to the self-reported frequency of the victim of assault variable, $r(35) = -.341$, $p = .045$. However, the low effect size ($r^2 = .116$), low frequency of the event ($M = 1.58$), and the reliance on self-reporting within the assault variable, make the actual practical significance of the variable questionable.

The WES sub-scale Clarity produced a number of significant correlations with ratio incident variables (Table 19). Clarity displayed a significant negative correlation with the total number of incidents (ratio), $r(10) = -.632$, $p = .050$. Individuals who perceived a higher level of job clarity within their work environment tended to be those individuals with experiencing a lower frequency of incidents. The same negative relationship existed when non-violent incidents were excluded, $r(10) = -.652$, $p = .04$. Greater effect sizes were found with individual incident types, with verbal incidents displaying a significant negative relationship with clarity, $r(10) = -.747$, $p = .013$. This relationship also existed when verbal incidents were combined with violent ones in the aggressive incident (ratio) categorization, $r(10) = -.695$, $p = .026$.

Maslach Burnout Inventory. The Human Services Survey, a component of the Maslach Burnout Inventory was also

administered to nursing staff across the three nursing units. A one-way ANOVA compared the mean scores of the survey's emotional exhaustion, depersonalization, and personal accomplishment sub-scales between the three units. As displayed in Table 21, no significant differences were observed between the mean HSS scores of each unit.

As with the NEO and WES questionnaires, an analysis of teams 3 and 4, who recorded acceptable response rates, was performed to determine whether future research is warranted. The HSS sub-scale means of teams 3 and 4 were compared by a one-way ANOVA. As shown in Table 22, no significant differences between the sub-scale means of the two teams were observed.

To examine the relationship between the HSS measures of burnout and incidents, the median split of incidents was examined to identify any differences in the HSS means between high and low incident experiencing staff (Table 23). While none of the variations in HSS scores between the high and low incident groupings reached significance, the difference between the mean values of Depersonalization bordered upon significance, $F(1,8) = 5.281$, $p = .051$. Subjects within the low incident group displayed a lower mean Depersonalization score ($M = 3.2$) than those in the high incident category ($M = 5.8$). The differences between

high and lower incident experiencing subjects Emotional

Exhaustion and Personal Accomplishment showed no variation

(Table 23).

Burnout measures were also examined at the level of the

individual by a series of correlational analysis. An

examination of the relationships between incidents and

burnout measures displayed a number of significant

correlations between depersonalization and incident types.

Depersonalization was positively related with the total

number of violent incidents, r(11) = .656, p = .028. The

significant relationship between burnout measures and

violent incidents also appeared within the violent and

verbal incident inclusive aggressive incidents category,

r(11) = .611, p = .046. Due to the non-significant

relationship between Depersonalization and verbal incidents,

r(11) = .401, p = .222, the aggressive incident relationship

may be an artifact of the significant violent incident

relationship. The total number of incidents excluding non-

violent incidents approached significance, r(11) = .600, p =

.051. No other significant relationships between the

burnout measures and incident frequency were observed (Table

24). While an examination of the incident frequency and

burnout measures seems to suggest that individuals

presenting responses consistent with higher feelings of

depersonalization in the work place are also those

experiencing an increased frequency of violent assaults, the

examination of the burnout measures relationships with the

incident ratio data complicates the interpretation. An

examination of the relationships between burnout sub-scales

and incident ratios showed no significant relationships,

including a loss of all significant findings between

incidents and depersonalization (Table 25).

Age appeared negatively correlated to both Emotional

Exhaustion, $r(31)$ = -.395, p = .028, and Depersonalization,

$r(31)$ = -.406, p = .024. Older individuals appeared to

respond in a manner suggestive of decreased feelings of

emotional exhaustion and depersonalization in the work place

than their younger colleagues. Personal Accomplishment did

not appear to have a significant relationship to age, $r(31)$

= .135, p = .470.

Depersonalization also appeared to have relationships

with an individual's length of time within the department

and the organization. Individuals who had more departmental

experience showed decreased levels of depersonalization,

$r(29)$ = -.425, p = .022. A similarly negative relationship

was displayed between Depersonalization and an individuals

length within the organization as a whole, $r(30)$ = -.411, p

= 024.

Discussion

Patient-related incidents have proven to be a significant concern within forensic psychiatric contexts. Incidents on forensic units have been shown to pose significant risk to nursing staff, influence staffs' decision to leave their jobs, and pose a significant drain on the financial resources of the health care system.

The purpose of this study was to explore the relationships between patients, nursing staff, and the forensic psychiatric environment in incidents. Comparisons were made between the forensic unit and two control non-forensic psychiatric wards.

Incidents. The ward of primary interest regarding incident analysis was the forensic inpatient ward of the Lakehead Psychiatric Hospital. During the year of analysis, 80 unique individuals were inpatients in the unit. The inpatient population was a predominantly schizophrenic and psychotic disordered sample. Personality disorders, mood disorders, substance abuse, and other low frequency disorders were also observed diagnoses on the unit.

A small group of inpatients were observed to be primarily responsible for incidents. In this study, 10% of the inpatient population was directly responsible for more

then half of the documented incidents. Multiple offenders committed all but 19% of incidents, a result that closely replicates previous studies of forensic psychiatric populations (Kennedy, Harrison, Hillis, & Bluglass, 1995).

With such a small disproportionate group being responsible for the majority of incidents, the question of potential similarities within members of this population is a viable one. Previous investigations have pointed towards a high-risk inpatient population that is typically more representative of the criminal offender population, with high frequencies of personality and substance abuse disorders (Volavka et al., 1995).   The results of this study's demographic and diagnostic analyses, however, found clearly opposite results. A chi-square analysis identified schizophrenic and psychotic clients as being disproportionately responsible for incidents than other diagnoses. Secondly, substance abusing individuals, who were found to be more likely involved in incidents in previous studies, were clearly involved in incidents at a frequency significantly lower than expected by the proportion of that diagnosis in the inpatient population.

There are a number of potentially unique factors that may explain the differences in the diagnosis-based incident ratio seen in this investigation. Both the ward environment

and the inpatient population participating in this study may have been unique in comparison to the inpatient-acuity, diagnosis types, treatment methods, ward policies, and the general context of those forensic units used in previous investigations. It may be in fact naive to expect high generalizability across international facilities, particularly due to the lack of Canadian studies within this area. A viable area of future research would be the comparison of incident-data across similarly organized forensic psychiatric units within the same ministry jurisdiction.

The primary purpose of this investigation was the examination of the four unique forensic psychiatric nursing teams for variations in the frequency of patient-based incident types. A significant variation was observed between nursing teams and the frequency of non-violent incidents, only partially supporting the hypothesized expectation of significant variation between team incident frequency. Non-violent incidents, a somewhat inclusive grouping, categorized such behaviors as violation of basic ward rules, failing to return as scheduled from authorized off-ward absences, and violation of smoking prohibitions.

Due to the nature of the incidents, an observed significant variation of team frequency with the seemingly

non-interpersonal non-violent incidents, combined with a lack of variation regarding the clearly interpersonal incidents such as verbal or physical assault, warrants further interpretation.

The significant variation of non-violent incident frequency between nursing teams can be explained by several potential phenomena: (1) the frequency of non-violent incidents did objectively vary between nursing teams, (2) the rate of reporting of such incidents varied between each team, (3) random error, and/or (4) Type I errors.

The first explanation could occur with teams varying in their levels of passivity and authoritarianism, with more passive teams experiencing clients more likely to act out and thereby lead to recorded incidents. One clear flaw within such an explanation is the high frequency of documented incidents that included failures to return on time from multiple day leaves of absence. It would be criticized if one suggested such clients would be aware of what staff members would be working at any one time, in order to consciously judge when to return from a leave of absence.

A more likely explanation is that variation in non-violent incident frequencies are in fact a variation in the rate of reporting between teams. It may be that some

nursing teams are more authoritarian in their reporting styles than others, consequently appearing to experience higher levels of non-violent incidents. The lack of variation within other incident types is not necessarily evidence against such a reporting-variation explanation. The nature of the violent assault, verbal assault, and self harm incidents are more critical than the non-violent categorization. Consequently, the rate of reporting of such incidents may be higher and more closely related to the actual frequency of those events. The non-violent categorization could potentially involve a greater level of staff discretion in reporting, and subsequently be more highly related to staff passivity and authoritarianism.

The random or Type I error explanation, as with any statistical investigation, is an additional potential explanation for the observed variation. Such an effect would suggest that the significant variations observed in the non-violent incident frequencies between nursing teams were a product of experimental error not actual significant variation. However, the number of observed incidents combined with the large range in incident frequency are suggestive that concerns about potential error are not founded.

A series of exploratory analyses examined incident frequencies in unique ways to identify possible team-incident relationships not previously detected. The first analysis examined the frequency with which each nursing team was the previous team upon the ward during each incident. The analysis was preformed to examine whether the interpersonal relationships between team members and clients had residual effects on incidents. For example, it was thought possible that an authoritarian team could have increased client hostility that was then expressed during the next nursing shift when a potentially more passive team, thereby producing a less constricted environment, was on the ward. The variation between incident frequencies and the previous nursing team, however, did not display any significant variations.

A combination of both a team's frequency of experienced incidents and those they were the prior nursing team to did retain the significant non-violent incident relationship. However, the decreased effect size of the incident combination variable, combined with the lack of significant differences between incident and previous team variables, suggests that this significant difference may be simply extraneous effects of the team-on variable.

The non-violent incident frequency displayed between nursing teams also appeared to vary at the level of the individual. Nursing staff with increased departmental experience appeared to be present during fewer non-violent incidents than their less experienced counterparts. As with the team variables a direct link between departmental experience and the actual frequency of non-violent incidents cannot be made. While the decreased frequency may indeed be a result of departmental experience, the possibility that this is a variation in the rate of reporting, not the frequency of actual incidents, is just as viable an explanation. Future investigations may benefit from an incident analysis that does not rely entirely on staff-based reporting methods.

Somewhat, but not exclusively related to nursing-staff tenure, is age. Staff member age was found to be positively related to the reporting of violent incidents. When older staff members were on the forensic unit, the rate of reported violent incidents was significantly greater in comparison to that of their younger counterparts. The expected low tolerance for violence on the units suggests that the age-violence relationship is potentially less likely a rate-of-reporting effect, though it may still exert some influence.

Absenteeism. In this investigation, staff absenteeism was examined in relation to incident and ward differences. The correlational relationships between absenteeism and incidents were unremarkable and in the expected direction, with staff members who were present on the unit more often experiencing a greater number of incidents. While not surprising, the finding did justify the use of an incident-absenteeism balancing ratio for comparing the incident variable relationships between individual staff members.

Variations between the absenteeism and workers compensation patterns of the forensic and comparison units were contrasted in order to identify any significant differences that could potentially be the result of the unique clients and ward environment of the forensics unit. No significant differences were observed, suggesting that the absenteeism and workers compensation patterns of the forensic nursing staff was not atypical of standard psychiatric units.

At an individual level, age and length within the organization were both found to be positively correlated with sick days. Whether this is a result of natural-aging absenteeism patterns or another factor, such as time-increasing work related stress or burnout, was not clear. Concerns regarding the potential inconsistency of care due

to high absenteeism rates, suggest that further research to identify any potential work-environmental roles in absenteeism upon psychiatric units may be warranted.

NEO. The NEO-Five Factor personality inventory was analyzed across psychiatric wards, between the forensic nursing teams, and at the level of the individual forensic nursing staff. As would be expected with personality characteristics in any comparatively similar populations, there was no significant differences between nursing team personality profiles. The forensics unit did, however, display significantly lower neuroticism levels than the comparison wards. The nature of this variation is not fully understood and would require further investigation that is beyond the scope of this study. At the level of the individual, where a wide distribution of NEO factor values would be expected, a relationship was observed between staff member openness and non-violent incidents. The staff-member NEO openness factor was observed to be positively correlated with non-violent incidents. Non-violent incidents occurred at a higher frequency when staff members of increased openness were present. One should be careful not to conclude that staff openness leads to a more disobedient forensic client population. The lack of any relationship

between staff openness and incidents defined as aggressive suggests that any interpretation of the openness results should consider the nature of the incident types. With non-violent incidents being somewhat minor violations, a more likely explanation may be that an open staff member is one perceived by patients as less strict and thereby less likely to report small indiscretions, a belief that may be unwarranted, as shown with the higher reported number of incidents when open staff members are present.

A median split analysis of high and low incident frequency experiencing staff displayed significantly different NEO Extraversion scores between the high and low incident groups. It was observed that the low incident grouping displayed significantly higher extraversion levels than their high-incident frequency colleagues. One possible explanation that may warrant further investigation is that the more extraverted staff spent significantly more time on the ward with the forensic clients, providing increased supervision, and potentially greater client satisfaction.

The relationship between nursing staff self-reported experiences of patient violence and staff extraversion indicators displayed an opposite, and significant, relationship than the incident split group analysis. However, the extremely low range of self reported

victimization, combined with little evidence of the validity of staff self reporting in this study, suggests that this finding may be misleading.

Work Environment Scale. As with the NEO-Five Factor, the Work Environment Scale was examined across psychiatric wards, between teams, and between individuals. As with the aforementioned scale, only a single significant difference was observed between the forensic unit and the comparison wards. The nursing staff on the forensics unit generally reported higher levels of clarity towards their jobs. The increased clarity levels could potentially be the result of the unique nature of the forensic psychiatric unit. Unlike departments that care for a bevy of clients with highly variable needs, forensic units are often goal-specific and consistent, following a legal or court ordered perspective that is perhaps more precisely defined.

High departmental levels of clarity could also be due to the quality of the ward's management. A more experienced and staff-oriented manager could be responsible for increased clarity of his or her nursing teams. A comparison of clarity levels across uniquely managed but similar forensic units could provide evidence supporting such a hypothesis.

Clarity was also found to share a significantly negative correlational relationship with incidents at an individual staff level. Those individuals with increased work environmental clarity tended to experience a lower frequency of aggressive incidents. It is important, however, to not assume a causal relationship, for there has been no direct evidence presented at this point that could allow such a conclusion.

WES Autonomy levels also displayed relationships with incident frequency at the level of the individual. Individuals with high levels of autonomy tended to experience a higher frequency of incidents. An examination of supervisory support, structured policies, and management styles may be a beneficial area of future interest in identifying any causal relationships between autonomy and incidents. It may be found that when individual nursing staff act in a highly self-directed manner, in that they do not follow well supported structural methods of practice, that the potentiality of incidents occurring increases.

Maslach Burnout Inventory. As with the previously mentioned self-report questionnaires, the Maslach Burnout Inventory's Human Services Survey was compared across psychiatric units, forensic teams, and individuals. No significant differences were observed between the three

units on measures of depersonalization, personal

accomplishment, and emotional exhaustion. The environmental

context of the forensic psychiatric ward would thereby not

appear to be one of greater environmental stress, despite

the unique challenges of these departments and client

populations.

At the individual level, depersonalization appeared to

be related to a number of incident variables. A comparison

of high versus low incident experiencing individuals

revealed that highly depersonalized individuals experienced

a greater frequency of incidents.

Correlational analysis displayed the depersonalization

effect directly upon violent incidents, with

depersonalization levels sharing a significantly positive

relationship with violence.

Consistent with this study's findings, burnout, of

which depersonalization is a key component, has been shown

to be highly related to inappropriate behavior and

irritability towards clients (Minder, 1992). It is not

surprising that such client-directed behaviors would be

reciprocated in a comparable manner.

Conclusion. The current investigation presented

evidence of a number of complex relationships between

inpatient violence and forensic nursing staff. First, the schizophrenic and psychotic inpatient appeared, in this investigation, to be disproportionately involved in on-ward incidents. As predicted, a number of staff related variables appeared to be related to staff involvement in incidents, a result that is suggestive of the role of a complex interpersonal relationship between staff members and inpatients in incident frequency. Staff personality variables of openness and extraversion, work environment factors such as clarity and autonomy, and measures of stress related depersonalization all appeared to be related to staff involvement in incidents. While the aforementioned relationships involved incidents of both an aggressive and non-violent nature, the only incident type that significantly varied among nursing teams was non-violent incidents. Considering the nature of non-violent incidents, a rate-of-reporting effect should be considered and may be an area of future research.

While a number of relationships were observed, the hypothesized personality, work environment, and burnout patterns often were not found. Before dismissing previous research within these areas, one should consider the limited, and fairly positive, range of self-report results provided by the forensic nursing teams. The usage of

measures with accurate validation scales may be warranted, and could potentially clarify some of this study's exploratory results.

One should also consider the limited effect size of this particular investigation. Due to the somewhat small sample size, the limited response rate, and the potential heterogeneity of the nursing participants there is a possibility that some relevant findings were unable to reach statistical significance.

The potential existence of Type I errors (a false rejection of the null hypothesis) also exists. A great deal of analyses were considered within this investigation, in an attempt to better understand the depth of the inpatient-staff relationship. However, the usage of the 0.05 alpha level of significance combined with the numerous analyses suggests that caution in result interpretation may be warranted.

Statistical factors aside, the possibility also exists that the forensic unit of interest in this study may be an especially good ward, and thereby not generally representative of the typical forensic unit presented in the current forensic-incident literature. A comparison of multiple forensic units, in order to determine the overall

generalizability of forensic psychiatric units may be warranted.

Any reproduction or similar research upon forensic-psychiatric incidents should consider the usage of a more objective measure of incident frequency. Inconsistencies between retrospective analysis of incident reports and self-reported incident questions in the questionnaire package administered to nursing staff participants are suggestive of potentially misleading responses. A comparison of objective incident data with nursing incident reports could provide interesting results that may confirm a number of the aforementioned hypothetical result explanations.

The finding of clearly significant relationships within this investigation and previous research within the area of forensic incidents warrants continued research into the area. The observation of some contradictory findings when comparing this study's results with those previously performed suggest that there is a high necessity of investigations that included multiple institutions and ward types. Such research could add a higher level of validity and overall generalizability to findings within the forensic-incident literature.

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Tables

Table 1

Chi-Square For Incident Frequency Between Nursing Teams

	Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
χ^2	4.462	8.909	2.333	1.429	4.778	.667	2.000
df	3	3	3	3	3	3	3
p	.216	.031	.506	.699	.189	.881	.572

Table 2

Actual and Expected Frequency of Non-Violent Incidents
Between Nursing Teams

Team	Observed (N)	Expected (N)	Residual
1	5	5.5	-.5
2	8	5.5	2.5
3	0	5.5	-5.5
4	9	5.5	3.5

Table 3

<u>Chi-Square For Previous Shifts Incident Frequency Between</u>
<u>Nursing Teams</u>

	Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
χ^2	.308	3.091	1.267	.231	3.000	1.733	1.200
Df	3	3	3	3	3	3	3
p	.959	.378	.737	.972	.392	.630	.753

Table 4

Chi-Square For Previous Shifts-Evening Incident Frequency
Between Nursing Teams

	Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
χ^2	.182	1.000	2.000	3.800	3.800	2.455	2.714
df	3	3	3	3	3	3	3
p	.980	.801	.572	.284	.284	.484	.438

Table 5
Chi-Square For Combined Actual and Previous Shift Incident .
Frequency Between Nursing Teams

	Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
χ^2	2.846	7.800	.667	2.565	.222	.750	2.472
df	3	3	3	3	3	3	3
p	.416	.050	.881	.464	.974	.861	.480

Table 6
Demographic Characteristics of Forensic and Comparative Unit
Nursing Staff

		Forensics Unit	Comparison Unit 1	Comparison Unit 2
Age	Mean	39.77	41.50	40.25
	Range	30 - 54	28 - 52	32 - 58
	N	13	10	12
Departmental Experience	Mean	9.56	9.37	11.48
	Range	.66 - 19	.68 - 20	1.17 - 17
	N	12	8	9
Organizational Experience	Mean	10.49	10.21	11.41
	Range	.66 - 19	3.17 - 21	6.17 - 17
	N	13	8	9
Sex	Male	4	5	1
	Female	5	3	8

Table 7
Correlation Between Nursing Staff Tenure and Incident Frequency

		Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
Length in Department	r	-.660*	-.608*	-.580	-.586	.699*	-.252	-.674*
	p	.027	.047	.061	.058	.017	.454	.023
	N	11	11	11	11	11	11	11

*   Correlation is significant at the 0.05 level (2-tailed).
**   Correlation is significant at the 0.01 level (2-tailed).

Table 8

Correlation Between Nursing Staff Tenure and Incident
Frequency

		Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
Length in Department	r	-.660*	-.608*	-.580	-.586	.699*	-.252	-.674*
	p	.027	.047	.061	.058	.017	.454	.023
	N	11	11	11	11	11	11	11

*   Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 9
Correlation Between Nursing Staff Tenure and Ratio
Controlled Incident Frequency

		Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
Length in Department	r	-.459	-.727*	-.343	-.402	.601	.025	-.401
	p	.182	.017	.332	.249	.066	.946	.250
	N	10	10	10	10	10	10	10

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 10
<u>Correlation Between Nursing Staff Age and Ratio Controlled</u>
<u>Incident Frequency</u>

		Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
Age	r	.573	.207	.744*	.486	.422	.701*	.649*
	p	.084	.567	.014	.154	.224	.024	.042
	N	10	10	10	10	10	10	10

*   Correlation is significant at the 0.05 level (2-tailed).
**   Correlation is significant at the 0.01 level (2-tailed).

Table 11

Variation Between Absenteeism and Nursing Units

		Sum of Squares	df	Mean Square	F	Sig.
Sickdays	Between Groups	5654.684	2	2827.342	2.490	.090
	Within Groups	84039.976	74	1135.675		
	Total	89694.659	76			
Absent without pay	Between Groups	2341.384	2	1170.692	.974	.382
	Within Groups	88939.235	74	1201.882		
	Total	91280.618	76			
Workers comp. days	Between Groups	919.983	2	459.992	1.597	.209
	Within Groups	21317.291	74	288.071		
	Total	22237.274	76			
Special Absences	Between Groups	9.976	2	4.988	1.174	.315
	Within Groups	314.337	74	4.248		
	Total	324.314	76			
Total Absences	Between Groups	470.629	2	235.315	.073	.930
	Within Groups	238091.628	74	3217.454		
	Total	238562.257	76			

Table 12

Correlations Between the Natural Log Conversion of Staff
Absenteeism and Staff Age

		Sick Days	Absence Without Pay	Workers Compensation	Special Absences
Age	Pearson Correlation	.521**	-.138	-.100	.269
	Sig. (2-tailed)	.009	.521	.643	.203
	N	24	24	24	24

** Correlation is significant at the 0.01 level (2-tailed).

Table 13
Correlations Between the Natural Log Conversion of Staff
Absenteeism and Departmental Experience

		Sick Days	Absence Without Pay	Workers Compensation	Special Absences
Length in Department	Pearson Correlation	.622**	.064	.228	.252
	Sig. (2-tailed)	.001	.765	.284	.235
	N	24	24	24	24

** Correlation is significant at the 0.01 level (2-tailed).

Table 14

Analysis of Variance of the NEO Five Factors Between Nursing

		Sum of Squares	df	Mean Square	F	p.
Neuroticism	Between Groups	454.532	2	227.266	6.176	.006
	Within Groups	1067.186	29	36.800		
	Total	1521.719	31			
Extraversion	Between Groups	57.960	2	28.980	1.106	.344
	Within Groups	759.915	29	26.204		
	Total	817.875	31			
Openness	Between Groups	9.831	2	4.915	.233	.794
	Within Groups	611.669	29	21.092		
	Total	621.500	31			
Conscientiousne ss	Between Groups	58.770	2	29.385	1.470	.247
	Within Groups	579.699	29	19.990		
	Total	638.469	31			
Agreeableness	Between Groups	25.372	2	12.686	.437	.650
	Within Groups	842.097	29	29.038		
	Total	867.469	31			

Table 15
Analysis of Variance of the NEO Five Factors Between Nursing Teams

		Sum of Squares	df	Mean Square	F	p.
Neuroticism	Between Groups	28.125	1	28.125	1.839	.224
	Within Groups	91.750	6	15.292		
	Total	119.875	7			
Extraversion	Between Groups	45.125	1	45.125	1.695	.241
	Within Groups	159.750	6	26.625		
	Total	204.875	7			
Openness	Between Groups	66.125	1	66.125	3.082	.130
	Within Groups	128.750	6	21.458		
	Total	194.875	7			
Conscientiousness	Between Groups	2.000	1	2.000	.071	.799
	Within Groups	170.000	6	28.333		
	Total	172.000	7			
Agreeableness	Between Groups	18.000	1	18.000	.931	.372
	Within Groups	116.000	6	19.333		
	Total	134.000	7			

Table 16

Correlations Between NEO Factors and Ratio-Controlled
Incident Frequencies

		Total Incidents	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incidents (non-violent excluded)	Aggressive Incidents
Neuroticism	r	-.194	-.324	.067	.234	-.077	.162	.175
	p	.567	.330	.845	.488	.821	.634	.608
	N	11	11	11	11	11	11	11
Extraversion	r	-.243	-.136	-.168	.100	-.233	-.235	-.039
		.472	.690	.622	.770	.491	.486	.910
	N	11	11	11	11	11	11	11
Openness	r	.552	.718*	.187	.216	-.292	-.128	.233
	p	.078	.013	.582	.523	.384	.707	.490
	N	11	11	11	11	11	11	11
Conscientiousness	r	-.368	-.268	-.274	.326	-.076	-.256	.032
	p	.266	.425	.415	.328	.824	.447	.927
	N	11	11	11	11	11	11	11
Agreeableness	r	-.097	-.209	.178	.391	-.107	.158	.329
	p	.776	.537	.600	.235	.755	.643	.323
	N	11	11	11	11	11	11	11

 * Pearson Correlation is significant at the 0.05 level (2-tailed).
 ** Pearson Correlation is significant at the 0.01 level (2-tailed).
 Note: Significance is measured as 2-tailed

Table 17
Analysis of Variance Between Nursing Units on the WES
Factors

		Sum of Squares	df	Mean Square	F	p
Involvement	Between Groups	3.910	2	1.955	.332	.720
	Within Groups	188.490	32	5.890		
	Total	192.400	34			
Peer Cohesion	Between Groups	15.391	2	7.696	2.487	.099
	Within Groups	99.009	32	3.094		
	Total	114.400	34			
Supervisory Support	Between Groups	46.168	2	23.084	5.081	.012
	Within Groups	145.374	32	4.543		
	Total	191.543	34			
Autonomy	Between Groups	8.409	2	4.204	1.409	.259
	Within Groups	95.477	32	2.984		
	Total	103.886	34			
Task Orientation	Between Groups	33.245	2	16.622	3.390	.046
	Within Groups	156.927	32	4.904		
	Total	190.171	34			
Work Pressure	Between Groups	7.696	2	3.848	1.280	.292
	Within Groups	96.190	32	3.006		
	Total	103.886	34			
Clarity	Between Groups	56.928	2	28.464	6.851	.003
	Within Groups	132.958	32	4.155		
	Total	189.886	34			
Control	Between Groups	6.752	2	3.376	1.182	.320
	Within Groups	91.419	32	2.857		
	Total	98.171	34			
Innovation	Between Groups	1.906	2	.953	.151	.861
	Within Groups	202.494	32	6.328		
	Total	204.400	34			
Physical Comfort	Between Groups	4.420	2	2.210	.839	.442
	Within Groups	84.323	32	2.635		
	Total	88.743	34			

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Table 18

Analysis of Variance Between Nursing Teams on the WES Factors

		Sum of Squares	df	Mean Square	F	p
Involvement	Between Groups	6.125	1	6.125	1.374	.286
	Within Groups	26.750	6	4.458		
	Total	32.875	7			
Peer Cohesion	Between Groups	2.000	1	2.000	1.600	.253
	Within Groups	7.500	6	1.250		
	Total	9.500	7			
Supervisory Support	Between Groups	2.000	1	2.000	.600	.468
	Within Groups	20.000	6	3.333		
	Total	22.000	7			
Autonomy	Between Groups	8.000	1	8.000	8.727	.025
	Within Groups	5.500	6	.917		
	Total	13.500	7			
Task Orientation	Between Groups	.000	1	.000	.000	1.000
	Within Groups	33.500	6	5.583		
	Total	33.500	7			
Work Pressure	Between Groups	.125	1	.125	.059	.816
	Within Groups	12.750	6	2.125		
	Total	12.875	7			
Clarity	Between Groups	2.000	1	2.000	3.429	.114
	Within Groups	3.500	6	.583		
	Total	5.500	7			
Control	Between Groups	8.000	1	8.000	3.097	.129
	Within Groups	15.500	6	2.583		
	Total	23.500	7			
Innovation	Between Groups	3.125	1	3.125	.265	.625
	Within Groups	70.750	6	11.792		
	Total	73.875	7			
Physical Comfort	Between Groups	1.125	1	1.125	.360	.570
	Within Groups	18.750	6	3.125		
	Total	19.875	7			

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Table 19

Analysis of Variance Between the Median Split of Incidents
on WES Factors

		Sum of Squares	df	Mean Square	F	p
Involvement	Between Groups	8.100	1	8.100	1.705	.228
	Within Groups	38.000	8	4.750		
	Total	46.100	9			
Peer Cohesion	Between Groups	2.500	1	2.500	2.105	.185
	Within Groups	9.500	8	1.188		
	Total	12.000	9			
Supervisory Support	Between Groups	2.500E-02	1	2.500E-02	.007	.933
	Within Groups	26.875	8	3.359		
	Total	26.900	9			
Autonomy	Between Groups	6.400	1	6.400	5.120	.053
	Within Groups	10.000	8	1.250		
	Total	16.400	9			
Task Orientation	Between Groups	1.000E-01	1	1.000E-01	.017	.898
	Within Groups	46.000	8	5.750		
	Total	46.100	9			
Work Pressure	Between Groups	2.025	1	2.025	.795	.399
	Within Groups	20.375	8	2.547		
	Total	22.400	9			
Clarity	Between Groups	.400	1	.400	.400	.545
	Within Groups	8.000	8	1.000		
	Total	8.400	9			
Control	Between Groups	4.225	1	4.225	1.235	.299
	Within Groups	27.375	8	3.422		
	Total	31.600	9			
Innovation	Between Groups	5.625	1	5.625	.518	.492
	Within Groups	86.875	8	10.859		
	Total	92.500	9			
Physical Comfort	Between Groups	4.225	1	4.225	1.446	.264
	Within Groups	23.375	8	2.922		
	Total	27.600	9			

Table 20

Correlations Between Ratio Controlled Incident Frequency and
WES Factors

		Total Incidents	Non Violent	Violent	Verbal	Self Harm	Total (Excluding non- violent)	Aggressio n
Involvement	r	.293	.243	.172	.260	.132	.215	.234
	p	.412	.499	.636	.469	.716	.550	.515
	N	10	10	10	10	10	10	10
Peer Cohesion	r	.359	.337	.264	.150	-.009	.223	.217
	p	.308	.341	.461	.680	.980	.536	.546
	N	10	10	10	10	10	10	10
Supervisory Support	r	-.115	.075	-.341	-.129	-.251	-.262	-.244
	p	.752	.837	.335	.722	.485	.464	.497
	N	10	10	10	10	10	10	10
Autonomy	r	.540	.673	.484	.233	-.305	.162	.374
	p	.107	.033	.157	.517	.391	.656	.286
	N	10	10	10	10	10	10	10
Task Orientation	r	-.055	-.124	-.248	-.024	.269	.041	-.137
	p	.880	.733	.490	.947	.452	.909	.705
	N	10	10	10	10	10	10	10
Work Pressure	r	.040	-.149	-.002	.140	.320	.220	.079
	p	.912	.680	.996	.700	.368	.541	.828
	N	10	10	10	10	10	10	10
Clarity	r	-.632	-.345	-.535	-.747	-.295	-.652	-.695
	p	.050	.329	.111	.013	.408	.041	.026
	N	10	10	10	10	10	10	10
Control	r	.187	-.286	.272	.108	.623	.599	.198
	p	.604	.423	.447	.766	.054	.067	.584
	N	10	10	10	10	10	10	10
Innovation	r	-.177	-.086	-.349	-.113	.071	-.194	-.239
	p	.624	.813	.323	.756	.845	.591	.507
	N	10	10	10	10	10	10	10
Physical Comfort	r	-.259	-.429	-.145	-.374	.485	.033	-.286
	p	.470	.216	.689	.288	.155	.929	.422
	N	10	10	10	10	10	10	10

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 21

Analysis of Variance Between Nursing Units on the MBI-HSS Factors

		Sum of Squares	df	Mean Square	F	p
Emotional Exhaustion	Between Groups	156.866	2	78.433	1.024	.372
	Within Groups	2221.853	29	76.616		
	Total	2378.719	31			
Depersonalization	Between Groups	56.926	2	28.463	.941	.402
	Within Groups	877.292	29	30.251		
	Total	934.219	31			
Personal Accomplishment	Between Groups	1.404	2	.702	.011	.989
	Within Groups	1824.315	29	62.907		
	Total	1825.719	31			

Table 22

Analysis of Variance Between Nursing Teams on the MBI-HSS
Factors

		Sum of Squares	df	Mean Square	F	p
Emotional Exhaustion	Between Groups	126.150	2	63.075	1.965	.210
	Within Groups	224.750	7	32.107		
	Total	350.900	9			
Depersonalization	Between Groups	3.000	2	1.500	.266	.774
	Within Groups	39.500	7	5.643		
	Total	42.500	9			
Personal Accomplishment	Between Groups	61.350	2	30.675	.470	.643
	Within Groups	456.750	7	65.250		
	Total	518.100	9			

Table 23

Analysis of Variance Between the Median Split of Incidents
and MBI-HSS Factors

		Sum of Squares	df	Mean Square	F	p
Emotional Exhaustion	Between Groups	22.500	1	22.500	0.548	.480
	Within Groups	328.400	8	41.050		
	Total	350.900	9			
Depersonalization	Between Groups	16.900	1	16.900	5.281	.051
	Within Groups	25.600	8	3.200		
	Total	42.500	9			
Personal Accomplishment	Between Groups	8.100	1	8.100	0.127	.731
	Within Groups	510.000	8	63.750		
	Total	518.100	9			

Table 24

Correlations Between Incident Frequency and MBI-HSS Factors

		Total Incident	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incident (non-violent excluded)	Aggressive Incidents
Emotional Exhaustion	r	.369	.271	.353	.531	-.435	.254	.512
	p	.265	.421	.287	.093	.182	.451	.108
	N	11	11	11	11	11	11	11
Depersonalization	r	.383	.074	.656*	.401	-.286	.600	.611*
	p	.246	.828	.028	.222	.394	.051	.046
	N	11	11	11	11	11	11	11
Personal Accomplishment	r	.125	-.015	.134	.397	-.001	.260	.307
	p	.714	.965	.694	.227	.998	.440	.358
	N	11	11	11	11	11	11	11

** Pearson Correlation is significant at the 0.01 level (2-tailed).
* Pearson Correlation is significant at the 0.05 level (2-tailed).

Table 25
Correlations Between Incident Frequency and MBI-HSS Factors

		Total Incident	Non-Violent Incidents	Violent Incidents	Verbal Incidents	Self Harm Incidents	Total Incident (non-violent excluded)	Aggressive Incidents
Emotional Exhaustion	r	.360	.431	.291	.465	-.345	.127	.412
	p	.307	.214	.414	.175	.329	.727	.237
	N	10	10	10	10	10	10	10
Depersonalization	r	.447	.418	.406	.301	-.139	.279	.374
	p	.195	.229	.245	.398	.702	.435	.286
	N	10	10	10	10	10	10	10
Personal Accomplishment	r	.082	.010	-.019	.249	.130	.120	.133
	p	.822	.977	.958	.488	.719	.740	.714
	N	10	10	10	10	10	10	10

** Pearson Correlation is significant at the 0.01 level (2-tailed).
* Pearson Correlation is significant at the 0.05 level (2-tailed).

Appendix A

Cover Letter and Consent Form

COVER LETTER - UNIT STAFF

Dear _____

Thank you for agreeing to participate in a study of the determinants of incidents within psychiatric hospitals.

You will be asked to complete questionnaires on personal and work environment attributes. It is expected that this will require about one half hour.

Your participation is voluntary, and you may terminate your participation at any time.

The information you provide will be treated in a confidential manner. There will be no disclosure of the data to anyone other than the researchers conducting the study. In any scientific presentation or publication your name will be not be used. Moreover, the findings will be presented in such a way that information about your forensic unit will not be identifiable.

When the study has been completed you can receive a copy of the findings by contacting the principal investigator listed below. The data will be stored in a secure filing cabinet in the research department at the Lakehead Psychiatric Hospital.

Thank you for agreeing to participate.

Dr. Michel Bédard   Michael Decaire
Principal Investigator,   Principal Investigator,
Lakehead Psychiatric Hospital   Lakehead University

FOR INFORMATION OR QUESTIONS CALL:
Dr. MICHEL BEDARD, 807-343-4300 ext. 4403,
or MICHAEL DECAIRE, ex. 4404

Consent Form - Forensic Staff

Determinants of incidents in forensic programs across Ontario psychiatric hospitals
Principal investigators: Michel Bédard, PhD
Michael Decaire, MA (candidate)

My signature below indicates that I agree to participate in a study about the determinants of incidents within psychiatric hospitals. I understand that the purpose of the study is to compare rates and severity of incidents and absenteeism within forensic units looking at the effects of patient pre-disposition, staff attributes and environment. I understand the following:

I can refuse to answer any questions which make me uncomfortable

I can withdraw from the study at any time.

The data collected will be confidential and only used for the stated research purposes.

The questionnaire to be completed by staff will take about one hour per staff and will need to be completed twice during a one year period.

When the study is completed, I will be able to receive a summary of the findings.

Signature of Participant   Date

Signature of Witness   Date

FOR INFORMATION OR QUESTIONS CALL:
Dr. MICHEL BEDARD, 807-343-4300 ext. 4403,
or MICHAEL DECAIRE, ext. 4404

Appendix B

Human Services Survey

And

Human Services Demographic Data Sheet

Christina Maslach • Susan E. Jackson

Human Services Survey

The purpose of this survey is to discover how various persons in the human services or helping professions view their jobs and the people with whom they work closely. Because persons in a wide variety of occupations will answer this survey, it uses the term *recipients* to refer to the people for whom you provide your service, care, treatment, or instruction. When answering this survey please think of these people as recipients of the service you provide, even though you may use another term in your work.

On the following page there are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way *about your job*. If you have *never* had this feeling, write a "0" (zero) before the statement. If you have had this feeling, indicate *how often* you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way. An example is shown below.

Example:

HOW OFTEN:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

<u>HOW OFTEN</u>

   0 - 6   Statement:

_____   I feel depressed at work.

If you *never* feel depressed at work, you would write the number "0" (zero) under the heading "HOW OFTEN." If you *rarely* feel depressed at work (a few times a year or less), you would write the number "1." If your feelings of depression are fairly frequent (a few times a week, but not daily) you would write a "5."

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Human Services Survey

HOW OFTEN:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

HOW OFTEN
0 - 6

Statements:

1. _____ I feel emotionally drained from my work.

2. _____ I feel used up at the end of the workday.

3. _____ I feel fatigued when I get up in the morning and have to face another day on the job.

4. _____ I can easily understand how my recipients feel about things.

5. _____ I feel I treat some recipients as if they were impersonal objects.

6. _____ Working with people all day is really a strain for me.

7. _____ I deal very effectively with the problems of my recipients.

8. _____ I feel burned out from my work.

9. _____ I feel I'm positively influencing other people's lives through my work.

10. _____ I've become more callous toward people since I took this job.

11. _____ I worry that this job is hardening me emotionally.

12. _____ I feel very energetic.

13. _____ I feel frustrated by my job.

14. _____ I feel I'm working too hard on my job.

15. _____ I don't really care what happens to some recipients.

16. _____ Working with people directly puts too much stress on me.

17. _____ I can easily create a relaxed atmosphere with my recipients.

18. _____ I feel exhilarated after working closely with my recipients.

19. _____ I have accomplished many worthwhile things in this job.

20. _____ I feel like I'm at the end of my rope.

21. _____ In my work, I deal with emotional problems very calmly.

22. _____ I feel recipients blame me for some of their problems.

(Administrative use only)	cat.	cat.	cat.
	EE: _____ _____	DP: _____ _____	PA: _____ _____

Human Services Demographic Data Sheet

Your sex: _____ (1) male   _____ (2) female

Your age: _____ years

Your height _____ cm   or _____ ft. and in.

Your weight _____ kg   or _____ lbs

Your ancestry (check only one group)
_____ (1) Asian
_____ (2) Black
_____ (3) Latino, Hispanic
_____ (4) Native Canadian
_____ (5) White, Caucasian
_____ (6) Other (please specify _____)

What is your religion?
_____ (1) Protestant (specify denomination _____)
_____ (2) Roman Catholic
_____ (3) Jewish
_____ (4) Other (please specify _____)
_____ (5) None, no religion

How religious do you consider yourself to be? (Circle the appropriate number.)
     1   2   3   4   5   6   7
   Very religious   not at all religious

Marital Status:
_____ (1) single   _____ (4) widowed
_____ (2) married   _____ (5) Other (please specify _____)
_____ (3) divorced

If married, for how long have you been married to your current spouse?
_____ years

If you have children, how many of them are now living with you?
_____ children live with me
_____ I have no children

How many times have you been the victim of a physical ~~assault on the ████ unit in~~ the last year?

_____ times

Home many days of lost time resulted from these incidents?

_____ days

What was the **highest** level you completed in school? (Check only one answer.)

_____ (1) completed high school
_____ (2) completed community college
_____ (3) completed university degree
_____ (4) completed graduate degree
_____ (5) other (please specify _____)

Please check all the degrees you have received:

_____ (1) B.A. / B.Sc.   _____ (5) R.P.N
_____ (2) M.A. / M.Sc.   _____ (6) M.D.
_____ (3) M.S.W.   _____ (7) Ph.D.
_____ (4) R.N.   _____ (8) Other (please specify _____)

What is the level of your primary position (check one)

_____ (1) management
_____ (2) nursing
_____ (3) other (please specify _____)

How many hours per week do you work at the job indicated above?

_____ hours per week

How long have you been at your present job?

_____ years

How long have you been employed for this general type of work?

_____ years

Appendix C

Work Environment Scale

WORK ENVIRONMENT SCALE

PAUL M. INSEL & RUDOLF H. MOOS

DIRECTIONS

Look at your test booklet and check the Form printed on it here:

Form R ____ E ____ I ____

Please provide the information requested below.

███████_____ Age _____

Name of Organization _____ Sex: M F
                                                                    (circle)

Department _____ Job Title _____

How long have you been with this organization? _____ _____
                                                    years   months

How long have you been in this department? _____ _____
                                                years   months

Today's Date _____ Other _____

Now, please read each statement in your booklet and then, in the boxes on the other side of this sheet, mark T (true) if you think the statement is true of your work environment, and F (false) if the statement is not true of your work environment.

EXAMPLE ONLY

Use a heavy X, as in the example: Please use a pencil with an eraser, not a pen. Be sure to match each number in the booklet with each one on this sheet.

	1		2
T	X		
F			X

WORK
ENVIRONMENT SCALE
FORM R

Rudolf H. Moos and Paul N. Insel
Instructions

There are 90 statements in this booklet. They are statements about the place in which you work. The statements are intended to apply to all work environments. However, some words may not be quite suitable for your work environment. For example, the term supervisor is meant to refer to the boss, manager, department head, or the person or persons to whom an employee reports.

You are to decide which statements are true of your work environment and which are false. Make all your marks on the separate answer sheet.

If you think the statement is *true* or mostly *true* of your work environment, make an X in the box labeled T (true).

If you think the statement is *false* or mostly *false* of your work environment, make an X in the box labeled F (false).

Please be sure to answer every statement.

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1. The work is really challenging.
2. People go out of their way to help a new employee feel comfortable.
3. Supervisors tend to talk down to employees.
4. Few employees have any important responsibilities.
5. People pay a lot of attention to getting work done.
6. There is constant pressure to keep working.
7. Things are sometimes pretty disorganized.
8. There's a strict emphasis on following policies and regulations.
9. Doing things in a different way is valued.
10. It sometimes gets too hot.
11. There's not much group spirit.
12. The atmosphere is somewhat impersonal.
13. Supervisors usually compliment an employee who does something well.
14. Employees have a great deal of freedom to do as they like.
15. There's a lot of time wasted because of inefficiencies.
16. There always seems to be an urgency about everything.
17. Activities are well-planned.
18. People can wear wild looking clothing while on the job if they want.
19. New and different ideas are always being tried out.
20. The lighting is extremely good.
21. A lot of people seem to be just putting in time.
22. People take a personal interest in each other.
23. Supervisors tend to discourage criticisms from employees.
24. Employees are encouraged to make their own decisions.
25. Things rarely get "put off till tomorrow."
26. People cannot afford to relax.
27. Rules and regulations are somewhat vague and ambiguous.
28. People are expected to follow set rules in doing their work.
29. This place would be one of the first to try out a new idea.
30. Work space is awfully crowded.
31. People seem to take pride in the organization.
32. Employees rarely do things together after work.
33. Supervisors usually give full credit to ideas contributed by employees.
34. People can use their own initiative to do things.
35. This is a highly efficient, work-oriented place.
36. Nobody works too hard.
37. The responsibilities of supervisors are clearly defined.
38. Supervisors keep a rather close watch on employees.
39. Variety and change are not particularly important.

40. This place has a stylish and modern appearance.

41. People put quite a lot of effort into what they do.

42. People are generally frank about how they feel.

43. Supervisors often criticize employees over minor things.

44. Supervisors encourage employees to rely on themselves when a problem arises.

45. Getting a lot of work done is important to people.

46. There is no time pressure.

47. The details of assigned jobs are generally explained to employees.

48. Rules and regulations are pretty well enforced.

49. The same methods have been used for quite a long time.

50. The place could stand some new interior decorations.

51. Few people ever volunteer.

52. Employees often eat lunch together.

53. Employees generally feel free to ask for a raise.

54. Employees generally do not try to be unique and different.

55. There's an emphasis on "work before play."

56. It is very hard to keep up with your work load.

57. Employees are often confused about exactly what they are supposed to do.

58. Supervisors are always checking on employees and supervise them very closely.

59. New approaches to things are rarely tried.

60. The colors and decorations make the place warm and cheerful to work in.

61. It is quite a lively place.

62. Employees who differ greatly from the others in the organization don't get on well.

63. Supervisors expect far too much from employees.

64. Employees are encouraged to learn things even if they are not directly related to the job.

65. Employees work very hard.

66. You can take it easy and still get your work done.

67. Fringe benefits are fully explained to employees.

68. Supervisors do not often give in to employee pressure.

69. Things tend to stay just about the same.

70. It is rather drafty at times.

71. It's hard to get people to do any extra work.

72. Employees often talk to each other about their personal problems.

73. Employees discuss their personal problems with supervisors.

74. Employees function fairly independently of supervisors.

75. People seem to be quite inefficient.

76. There are always deadlines to be met.

77. Rules and policies are constantly changing.

78. Employees are expected to conform rather strictly to the rules and customs.

79. There is a fresh, novel atmosphere about the place.

80. The furniture is usually well-arranged

81. The work is usually very interesting.

82. Often people make trouble by talking behind others' backs.

83. Supervisors really stand up for their people.

84. Supervisors meet with employees regularly to discuss their future work goals.

85. There's a tendency for people to come to work late.

86. People often have to work overtime to get their work done.

87. Supervisors encourage employees to be neat and orderly.

88. If an employee comes in late, he can make it up by staying late.

89. Things always seem to be changing.

90. The rooms are well ventilated.

Appendix D

NEO Five-Factor Inventory

NEO

Five-Factor Inventory

Form S

Paul T. Costa, Jr., Ph.D., and Robert R. McCrae, Ph.D.

Instructions

Write only where indicated in this booklet. Carefully read all of the instructions before beginning. This questionnaire contains 60 statements. Read each statement carefully. For each statement fill in the circle with the response that best represents your opinion. Make sure that your answer is in the correct box.

Fill in (SD) if you *strongly disagree* or the statement is definitely false.

Fill in (D) if you *disagree* or the statement is mostly false.

Fill in (N) if you are *neutral* on the statement, you cannot decide, or the statement is about equally true and false.

Fill in (A) if you *agree* or the statement is mostly true.

Fill in (SA) if you *strongly agree* or the statement is definitely true.

For example, if you *strongly disagree* or believe that a statement is definitely false, you would fill in the (SD) for that statement.

Example

● (D) (N) (A) (SA)

Fill in only one response for each statement. Respond to all of the statements, making sure that you fill in the correct response. DO NOT ERASE! If you need to change an answer, make an "X" through the incorrect response and then fill in the correct response.

Note that the responses are numbered in *rows*. Before responding to the statements, turn to the inside of the booklet and enter your name, age, and sex and the date.

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Name _____ Age_____ Sex_____ Date_____

1. I am not a worrier.
2. I like to have a lot of people around me.
3. I don't like to waste my time daydreaming.
4. I try to be courteous to everyone I meet.
5. I keep my belongings clean and neat.

6. I often feel inferior to others.
7. I laugh easily.
8. Once I find the right way to do something, I stick to it.
9. I often get into arguments with my family and co-workers.
10. I'm pretty good about pacing myself so as to get things done on time.

11. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.
12. I don't consider myself especially "light-hearted."
13. I am intrigued by the patterns I find in art and nature.
14. Some people think I'm selfish and egotistical.
15. I am not a very methodical person.

16. I rarely feel lonely or blue.
17. I really enjoy talking to people.
18. I believe letting students hear controversial speakers can only confuse and mislead them.
19. I would rather cooperate with others than compete with them.
20. I try to perform all the tasks assigned to me conscientiously.

21. I often feel tense and jittery.
22. I like to be where the action is.
23. Poetry has little or no effect on me.
24. I tend to be cynical and skeptical of others' intentions.
25. I have a clear set of goals and work toward them in an orderly fashion.

26. Sometimes I feel completely worthless.
27. I usually prefer to do things alone.
28. I often try new and foreign foods.
29. I believe that most people will take advantage of you if you let them.
30. I waste a lot of time before settling down to work.

31. I rarely feel fearful or anxious.
32. I often feel as if I'm bursting with energy.
33. I seldom notice the moods or feelings that different environments produce.
34. Most people I know like me.
35. I work hard to accomplish my goals.

36. I often get angry at the way people treat me.
37. I am a cheerful, high-spirited person.
38. I believe we should look to our religious authorities for decisions on moral issues.
39. Some people think of me as cold and calculating.
40. When I make a commitment, I can always be counted on to follow through.

41. Too often, when things go wrong, I get discouraged and feel like giving up.
42. I am not a cheerful optimist.
43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.
44. I'm hard-headed and tough-minded in my attitudes.
45. Sometimes I'm not as dependable or reliable as I should be.

46. I am seldom sad or depressed.
47. My life is fast-paced.
48. I have little interest in speculating on the nature of the universe or the human condition.
49. I generally try to be thoughtful and considerate.
50. I am a productive person who always gets the job done.

51. I often feel helpless and want someone else to solve my problems.
52. I am a very active person.
53. I have a lot of intellectual curiosity.
54. If I don't like people, I let them know it.
55. I never seem to be able to get organized.

56. At times I have been so ashamed I just wanted to hide.
57. I would rather go my own way than be a leader of others.
58. I often enjoy playing with theories or abstract ideas.
59. If necessary, I am willing to manipulate people to get what I want.
60. I strive for excellence in everything I do.

Enter your responses here—remember to enter responses *across the rows*.
SD = *Strongly Disagree*; D = *Disagree*; N = *Neutral*; A = *Agree*; SA = *Strongly Agree*

1 SD D N A SA	2 SD D N A SA	3 SD D N A SA	4 SD D N A SA	5 SD D N A SA
6 SD D N A SA	7 SD D N A SA	8 SD D N A SA	9 SD D N A SA	10 SD D N A SA
11 SD D N A SA	12 SD D N A SA	13 SD D N A SA	14 SD D N A SA	15 SD D N A SA
16 SD D N A SA	17 SD D N A SA	18 SD D N A SA	19 SD D N A SA	20 SD D N A SA
21 SD D N A SA	22 SD D N A SA	23 SD D N A SA	24 SD D N A SA	25 SD D N A SA
26 SD D N A SA	27 SD D N A SA	28 SD D N A SA	29 SD D N A SA	30 SD D N A SA
31 SD D N A SA	32 SD D N A SA	33 SD D N A SA	34 SD D N A SA	35 SD D N A SA
36 SD D N A SA	37 SD D N A SA	38 SD D N A SA	39 SD D N A SA	40 SD D N A SA
41 SD D N A SA	42 SD D N A SA	43 SD D N A SA	44 SD D N A SA	45 SD D N A SA
46 SD D N A SA	47 SD D N A SA	48 SD D N A SA	49 SD D N A SA	50 SD D N A SA
51 SD D N A SA	52 SD D N A SA	53 SD D N A SA	54 SD D N A SA	55 SD D N A SA
56 SD D N A SA	57 SD D N A SA	58 SD D N A SA	59 SD D N A SA	60 SD D N A SA

Have you responded to all of the statements?   _____Yes _____No

Have you entered your responses in the correct boxes? _____Yes _____No

Have you responded accurately and honestly?   _____Yes _____No