Predeployment Family Concerns and Soldier Well-being

The Impact of Family Concerns on the Predeployment Well-being of Canadian Forces Personnel

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ABSTRACT

Recent operational demands have meant that many soldiers spend an increasing amount of time away from home on long, overseas deployments Past research indicates that family concerns are an important source of stress throughout a deployment, and one of the most significant downsides of a military career The present study uses structural equation modeling to explore the impact of predeployment family concerns on indices of psychological well-being of Canadian Forces personnel about to deploy on a peacekeeping mission As expected, family concerns were associated with all measured dimensions of psychological well-being Family concerns explained 91% of the variance in depression, 68% of hyper-alertness symptoms, 55% of anxiety symptoms, and 60% of the variance in somatic complaints symptoms. Overall, the measurement model explained approximately 88% of the variance within the data for this sample

Frequent, and sometimes long, separations from family members are a fact of life for most military personnel (Blount, Curry, & Lubin, 1992; Ursano, Holloway, Jones, Rodriguez, & Belenky, 1989) For example, the present climate of international conflict has meant an increase in the total number of peacekeeping missions for many countries — missions that are typically 6 months in duration (Lamerson & Kelloway, 1996). Moreover, due to the downsizing of military forces, many soldiers now deploy more often over the course of their military careers (Castro & Adler, 1999, Lamerson & Kelloway, 1996), meaning even more time spent away from families. Not surprisingly, time away from family is considered to be one of the most significant downsides of a military career. In one study, 82% of respondents listed separation from loved ones as the most negative aspect of a military career (Aldwin, Levenson, & Spiro, 1994).

Several large-scale surveys of American troops have shown that family separation during a deployment can be very stressful (Bartone, 1998; Bartone, Adler, & Viatkus, 1998, Halverson, Bliese, Moore, & Castro, 1995) For instance, Halverson and colleagues found that over 33% of their sample of 3,205 soldiers rated being away from their family 'quite a bit' or 'extremely' stressful (Halverson, et al., 1995; see also Bartone et al., 1998) This same survey showed that over 50% of the married soldiers reported significant stress from concerns or problems regarding their spouses, and almost 66% of the respondents who had children reported significant stress was associated with problems with their children. In some cases, military personnel view family concerns in terms of the conflict between meeting their family's needs and meeting work demands (Bartone et al., 1998).

Interestingly, results also showed that thinking about family was considered by the overwhelming majority of deployed soldiers to be a positive way of

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14. ABSTRACT
Recent operational demands have meant that many soldiers spend an increasing amount of time away from home on long, overseas deploy~ ments Past research indicates that family con~ cerns are an important source of stress throughout a deployment, and one of the most signiflcant downsides of a military career The present study uses structural equation modeling to explore the impact of predeployment family concerns on indices of psychological well-being of Canadian Forces personnel about to deploy on a peacekeeping mission As expected, family concerns were associated with all measured dimensions of psychological well-being Family concerns explained 91% of the variance in depression 68% of hyper-alertness symptoms, 55% of anxiety symptoms, and 60% of the variance in somatic complaints symptoms. Overall, the measurement model explained approximately 88% of the variance within the data for this sample

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coping with the other stressors of the mission However, while both letters and telephone calls home are considered very positive and important means for coping with deployment stress, difficulties in establishing communications can be significant sources of frustration. Data from the United States showed that phone access in deployment mission theatres can be limited to very inconvenient hours and often is not subsidized This makes communication with home a difficult and expensive proposition, especially for those in the lower ranks (Halverson et al., 1995).

Family separation is similarly difficult for the spouses and children who remain behind (Blount, et al., 1992, Crumley & Blumethal, 1973). Indeed, at least one study showed that parents who remained behind experienced more distress than did their deployed spouses (Zeff, Lewis, & Hirsch, 1997). As one U.S. military spouse put it: *"[b]ased on the previous deployment I knew what to expect. long nights, long weekends and that I'd get every complaint"* (USAREUR Circular, 1999) Some military personnel note that they were willing to go on repeated tours, but were concerned about the strain that it put on their families *"I don't think any of us actually tire of going over, no matter what you do. It's your family that tires of it They're the ones that get worn out and get tired of it"* (Thompson & Gignac, 2001, p. 243).

Deployed members' concerns for their families are heightened by several factors For instance, stress due to family separation is greater for soldiers who are married, as well as for personnel who have been deployed multiple times (Halverson et al., 1995; Schumm & Bell, 2000). Additional concerns arise when formal or institutional supports for families do not exist or are not easily accessed This situation is often the case for soldiers drawn from outlying areas (Bartone et al , 1998), augmentees (Thompson & Gignac 2001), and for newly posted soldiers who may be deployed before their families have a chance to get settled into a new community

Deployed single parents may have special issues regarding childcare. For instance, they are faced with making alternate child care arrangements for an extended period of time. These arrangements may mean relocating children for the duration of the tour, causing further upheaval in the lives of these families Even the availability of an ex-spouse to care for a child does not completely alleviate these concerns and could even introduce additional insecurities. As one soldier put it: *"[S]omebody said ... to me, 'Well, what if [your kids] don't want to come back [from your ex-husband after your tour ends]?' And I'm thinking 'Whoa' and I said 'That's a chance I'm going to have to take and just hope that there's enough*

love there between all of us' But that's a scary thought for me" (Thompson & Gignac, 2001, p 243).

While the previous research clearly shows that family concerns are important for soldiers during a deployment, other findings suggest that family issues become an overriding consideration well before soldiers leave on deployment. Prior to deploying, soldiers and their families report anticipatory anxiety and feelings of bereavement (Ford et al., 1993). Family conflict also may increase at this point as families deal with financial, spousal, and parental role changes (Blount et al., 1992) Changing deployment dates, especially if departure dates are delayed at the last minute, exacerbates uncertainty. Bartone et al. (1998) found that conflicts arising from the deployment training schedule and preparing the family for deployment were significant predeployment stressors among members of a U S military medical mission to Bosnia. Moreover, Bartone & Adler (1999) showed that concerns about children, problems with having to move the family, and health problems of family members, were negatively correlated with feelings of group cohesion during the predeployment mission phase Blount at al (1992) concluded that predeployment was a crucial time when coping strategies are put into place and first tested out by soon-to-be deployed members and their families.

The resulting impact of family concerns on soldiers' health and well-being appears to be quite significant The United States data revealed that deployed soldiers who reported higher levels of family concerns and problems also reported higher levels of psychological and physical symptoms during deployment (Halverson et al , 1995). A further study conducted during a military deployment found that daily stressors including family separation were related to self-reported symptoms of Post-Traumatic Stress Disorder (PTSD; Bartone, 1998). Other work has demonstrated that soldiers who had higher levels of predeployment family concerns also reported more difficulties in their ability to perform operational tasks during a deployment (Schumm & Bell, 2000).

Family concerns and their effects can have important effects well after troops return home Ford and colleagues (Ford et al., 1993) showed that after returning from operation Desert Storm, individuals experiencing greater family concerns also reported more emotional problems, especially depression and PTSD symptoms. Moreover, approximately 40% of their sample that had sought counseling, continued to experience family distress one year after demobilization The relevance of family issues is also indicated by its explicit inclusion in

recent theoretical models of deployment (e.g., Lamerson & Kelloway, 1996, Castro & Adler, 2000).

Although the above findings are highly suggestive of a link between family concerns and soldier psychological adjustment during all phases of a deployment, there is relatively little empirical data on the relation between these variables during the predeployment phase of an operation Indeed, the vast majority of the prior research is largely anecdotal and descriptive The empirical data that does exist is often analyzed via univariate techniques and may suffer from a variety of statistical limitations

The present study was designed to address two of the limitations of the previous research: (1) a lack of emphasis on the predeployment phase of a mission and (2) the general over-reliance on anecdotal, or univariate and bivariate statistical analyses. Data were gathered from a group of Canadian peacekeepers about to be deployed on a six-month tour of Bosnia. Each member completed a commonly used measure of psychological well-being, as well as an index of operational military stressors However, because there is no commonly used measure of family concerns for the military context, four items from the military stress questionnaire that asked about family concerns were extracted for the purposes of this study. To address the measurement issue, we used structural equation modeling (SEM) to explore the relation between these family concerns and these indices of psychological adjustment A structural modeling approach was chosen for two reasons. First, the proposed model contains one independent variable (Family Concerns) and four dependent variables assessing psychological well-being (Depression, Anxiety, Hyperalertness, and Somatic Complaints). SEM allows this type of model to be tested all at once, whereas regression analyses would require four separate analyses Second, SEM uses covariance matrices to assess the unique relation between family concerns and each dimension of psychological well-being. In other words, each path is computed while simultaneously controlling for the associations between family concerns and the other three aspects of well-being. Based upon the foregoing literature, we expect SEM analyses will reveal that soldiers with higher levels of family concerns will also show higher levels of psychological symptoms

Method
Participants
The participants were 180 Canadian Forces (CF) military personnel (165 men, 12 women, 3 people who failed to report their gender) Respondents were from formed units, all of whom had both families and access to Canadian Forces Military Family Resource Centers. With regard to rank, 7% were Privates, 78% were Junior Non-Commissioned Members (NCMs), 12% were Senior NCMs, and 3% were Officers. This was the first tour of duty for 35% of the sample and the second tour for 34%. One third of the sample (34%) had been in the CF between 5 and 9 years, 31% had between 10 and 14 years experience in the CF, while 23% of the sample had been in the CF for 15 years or more.

Measures
As part of a larger pre-deployment questionnaire, each person completed questions assessing their family concerns and psychological well-being

Family Concerns Four items assessing family concerns were embedded in a questionnaire measuring stress in military service (1) *Time spent away from your family due to service,* (2) *Problems with or in your family,* (3) *Communication with your family,* and (4) *Concern about the impact of deployment on your relationship with your family* Respondents were asked to indicate how concerned they were about each stressor. Ratings were made on a 5-point interval scale, with scoring options ranging from "No Trouble or Concern" to "A Lot of Trouble or Concern".

Psychological Well-being. The SIGNS Profile was used to assess psychological well-being. The SIGNS contains a subset of items from the Hopkins Symptom Checklist (Derogitis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) and measures four aspects of well-being. depression-withdrawal (5 items); hyper-alertness (6 items); generalized anxiety (5 items), and somatic complaints (5 items). Participants were asked to describe the extent to which they experienced each item, using a 4-point scale· "Never" (0), "Sometimes" (1), "Often" (2), and "Very Often" (3).

Procedure
A Personnel Selection Officer, who was to deploy with the troops, administered the Predeployment questionnaire to CF personnel in a base training building approximately 48 hours before deploying to a peace support mission in Bosnia The survey was administered to all respondents simultaneously in a large group setting, but was completed individually.

Participants were told that the purpose of the survey was to examine the human aspects of military operations in order to enhance the effectiveness of future operations and to respond to the needs of CF

members and their families. In addition, respondents were assured that only research personnel would have access to the data, and that only group results would be reported. Participation was completely voluntary and anonymous.

Data Analysis

SEM analyses were conducted to assess the degree to which family concerns predict four dimensions of psychological well-being. Depression-withdrawal, Hyper-alertness, Generalized Anxiety, and Somatic Complaints These analyses were performed using the program EQS (Bentler, 1993), and followed the procedures outlined by Byrne (1994). Raw data were used as input, along with a maximum likelihood estimation procedure To prepare for these analyses, we first created indicators from the family concerns and psychological well-being measures using item parcelling. Item parcelling is commonly used to create a latent factor from items in a single scale while simultaneously maximizing the degrees of freedom in the measurement model (Bandalos, 2002). For the Family Concerns latent construct, we randomly paired the four individual family concerns items into two item parcels. To create the latent factors for the four dimensions of well-being, items from the Depression-withdrawal, Hyper-alertness, Generalized Anxiety, and Somatic Complaints subscales of the SIGNS were randomly grouped into three indicators per factor These indicators form the *measurement model* for the analysis (see Figure 1).

Once the measurement model was identified, the structural model was tested Following recommendations by Hu and Bentler (1999), model fit was determined using several indices. (1) chi-square (values should not be significant), (2) chi-square/df ratio (values should be < 2 0), (3) Comparative Fit Index (CFI; values should be close to 95), (4) Root Mean Square Error of Approximation (RMSEA; values should be close to 06), and (5) the Standardised Root Mean Square Residual (SRMR; values should be close to .08) (see also Browne & Cudeck, 1993, Marsh, Balla, & McDonald, 1988) Because chi-square statistics are inflated in larger samples, emphasis is placed on the latter four fit indices (Hu & Bentler, 1999).

Results

Descriptive Statistics
Means and standard deviations were computed for all indicators used to create the two structural models (see Table 1). Family concerns were generally low, as were scores on the four SIGNS subscales.

Table 1

Descriptive statistics for indicators used in structural modeling analyses (N = 179)
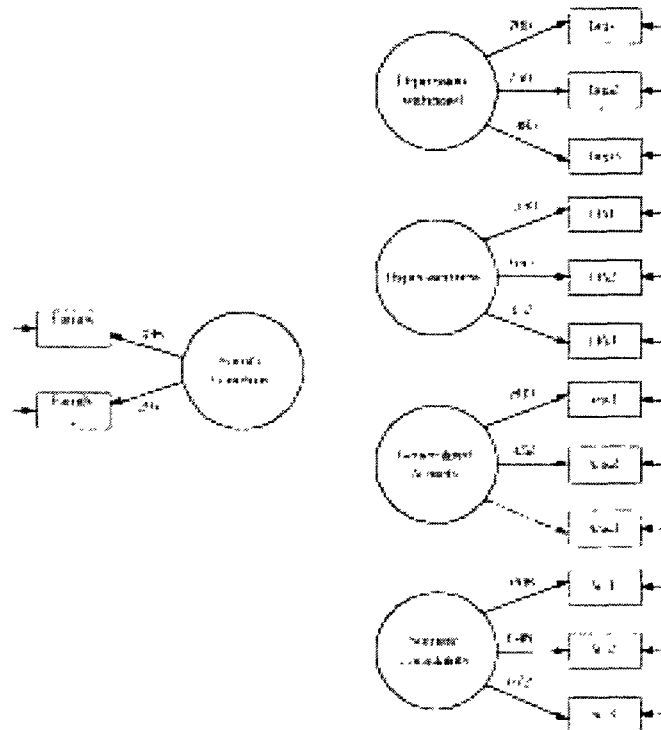
Variable	M	SD
Family Concerns		
Family 1	2.14	0 93
Family 2	1 52	0.72
Depression-withdrawal		
Depression 1	0.50	0.49
Depression 2	0.37	0.46
Depression 3	0.21	0.45
Hyper-vigilance		
Hyper-vigilance 1	0.19	0 33
Hyper-vigilance 2	0 41	0.42
Hyper-vigilance 3	0.13	0.32
Generalized Anxiety		
Anxiety 1	0 19	0.34
Anxiety 2	0 10	0.23
Anxiety 3	0 06	0.26
Somatic Complaints		
Somatic Complaints 1	0.69	0 47
Somatic Complaints 2	0.48	0 47
Somatic Complaints 3	0 55	0 63

Structural Modeling Analyses

An initial test of the measurement model showed that the degree of univariate skewness and kurtosis was high for most indicators, and that the degree of multivariate kurtosis was similarly high. To address these issues, we first transformed all the indicators using a logarithmic procedure (Tabachnick & Fidell, 1996). This transformation reduced the degree of univariate skewness and kurtosis substantially for all variables but one (i.e., the third indicator for Generalized Anxiety). The indicator with the extreme univariate skewness and kurtosis scores was removed from the measurement model Next, we identified and removed three multivariate outliers that had a negative impact on the model's degree of multivariate kurtosis. Finally, we applied the Satorra-Bentler (S-B) correction (Bentler, 1993) to control for the remaining multivariate kurtosis (Mardia's normalized estimate = 6.36).

Once all aspects of the measurement model were corrected for both univariate and multivariate non-normality, we tested the proposed measurement model shown in Figure 1 All remaining indicators loaded significantly onto their respective latent factors and both the variances associated with all the latent
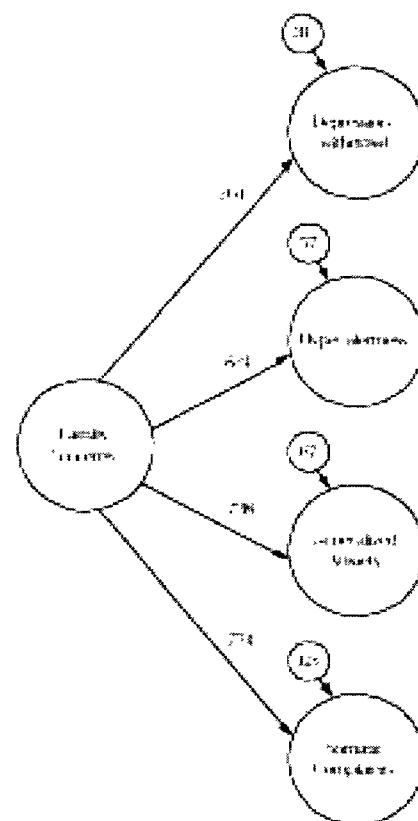
Figure 1

Measurement model Large circles are latent constructs, rectangles are measured variables, directional arrows are factor loadings, and small sourceless arrows represent indicator error terms All given parameter estimates are standardized and statistically significant (p < 01). . The indicator outlined in dots (i e , Anx 3) was excessively non-normal and was removed from the analysis Family = Family Concerns, Dep = Depression-withdrawl, HA = Hyper-alertness, Anx = Generalized Anxiety, SC = Somatic Complaints

factors, as well as the residuals for each indicator, were significant (all ps < 01). Thus, the measurement model is reliable

Next we tested the structural model; that is, the directional paths between latent factors. The observed data fit the proposed model well. All the directional paths between Family Concerns and the four SIGNS subscales were significant (all ps < 01). The disturbance terms (i.e., residual variances) for the Depression-withdrawal and Hyper-alertness latent factors were not significantly different from zero (both ps > 05), suggesting that Family Concerns explained most of the predicted variance in those factors. The model's fit indices were within the acceptable range for all statistics except the CFI: S-B χ^2 = 111.76 (df = 61,p < 001), S-B χ^2/df = 1 82, CFI = .89, SRMR = 07,

Figure 2

Structural model exploring the extent to which Family Concerns predict four dimensions of psychological well-being Large circles are latent constructs, single-headed arrows are directional paths, and small circles are residual or disturbance terms All given parameter estimates are standardized and significant (p < 01), except the disturbance terms for Depression-withdrawl and Hyper-alertness

RMSEA = 07 The results of the model are displayed in Figure 2 As can be seen, Family Concerns predicted all four dimensions of Personal Well-being Family Concerns had the strongest relation with Depression, explaining 91% of that latent construct (1 00 minus the squared latent residual). However, Family Concerns also explained between 55% and 68% of the remaining constructs As indicated by the Adjusted Goodness of Fit index, the final model explained approximately 86% of the variance within the data.

Discussion

The present study sought to determine the relation between perceived family concerns and self-reported stress symptoms in a sample of CF military personnel Results of a structural equation modeling analysis showed that the observed data fit our proposed model well concerns about family were associated with all

four dimensions of psychological well-being that were measured. The strongest association occurred between family concerns and depression, in which family concerns explained 91% of the variability in depression scores Family Concerns also explained 68% of Hyper-alertness symptoms, 55% of Anxiety symptoms, and 60% of the variance in the Somatic Complaints symptoms reported by these about-to-be-deployed CF peacekeepers.

These results corroborate other descriptive research by Bartone and colleagues (Bartone, 1998, Bartone, et al., 1998) as well as that of Halverson et al (1995), indicating that family concerns are related to increased psychological and physical symptoms. However, the present research builds on this earlier work as it employed SEM to explore the relation between these variables. As noted in the introduction, SEM techniques are considered superior because SEM measures the unique associations between the independent and dependent variables in one analysis. Thus, the use of SEM allowed us to test a more parsimonious model without increasing the probability of making a Type I error.

In general, it is heartening to note that mean levels of family concerns as well as psychological and physical symptoms were quite low in this sample, similar to results of previous studies (e g , Ford et al , 1993). For family concerns items, mean scores were generally below the mid-point, indicating that most individuals reported relatively few concerns about problems within their family or concerns about communication with their family. Of the four family concerns items, respondents in this sample were most concerned by the time they spent away from their families, although even in this case they reported only minimal concerns. As well, respondents reported rarely being bothered by psychological and physical complaints over the proceeding two months This is encouraging, in that the previous two months would have been quite a hectic time devoted to last minute deployment training and administrative details.

These soldiers were deploying to a mission theatre (i.e., Bosnia) that was quite well established and thus had reliable communication links with rear guard and home which perhaps contributed to the low levels of family concerns evident here, Moreover, as members of a formed unit, respondents and their families would have relatively easy access to the military family resource centers, providing additional supports to family members. Family concerns may be substantially higher for regular force augmentees, reservists, and military personnel whose families live a distance from the base, or for personnel and families who have only recently moved to the base before deploying.

Regarding the low levels of symptoms reported, it may be that only individuals who were coping well and feeling positive about the upcoming deployment volunteered to complete these questionnaires. General social desirability concerns may also be at work here As well, although soldiers completed the questionnaires individually and anonymously, the questionnaires were administered in a group setting The presence of others who might have an opportunity to see answers may have influenced people to underreport their family concerns, as well as their symptoms. This influence may be a particular factor in a military culture that traditionally places great value on physical rigor, discipline, courage, and toughness (Noy, 1991; Ulmer, Collins, & Jacobs, 2000) A final, and perhaps the most parsimonious, interpretation is that the low family concern and symptom scores are simply an accurate reflection of these soldiers level of concerns about family issues, as well as the psychological health of the sample. Nonetheless, the results here confirm a link between family concerns and psychological and physical symptoms among CF personnel. Indeed, the present results are perhaps all the more compelling because the relation between family concerns and psychological and physical symptoms was apparent even though mean levels of concerns and symptoms were low We would expect all the observed relations to be higher in a sample that had greater family concerns or were less well adjusted

Methodological Issues

It is important to note that all data collected at the same point in time and is correlational in nature. Thus, although we know that there is a relation between family concerns and psychological symptoms as assessed by the SIGNS scale, the present findings do not establish a definitive cause and effect relationship Although elevated family concerns could lead to increases in depression and other psychological symptoms, higher levels of psychological symptoms such as depression or anxiety could also lead one to express more concerns about family Moreover, both psychological symptoms and family concerns could be manifestations of a macro-level variable, for instance a general tendency to view events negatively. The ideal experimental design to address the issue of causality would be to determine if predeployment family concerns have a significant effect upon later symptomology, after controlling for the effects of predeployment symptomology

Despite the statistical advantages of using SEM techniques, there is at least one other measurement issue to consider with respect to the present findings. SEM assesses the associations between latent variables defined by specific indicators; changing the indicators may change the associations between latent variables. Thus, the strong associations between family concerns and psychological well-being (especially Depression/Withdrawal) may be a function of the four family concerns items selected, or a function of the use of the SIGNS scale. Thus, replication of these results with other measures and in other samples is warranted

Directions for Future Research

Future research should explore potential mediators of the associations identified here. Blount et al. (1992) have suggested that factors associated with the nature of the separation (e.g., length, frequency, degree of danger) could affect level of family concerns. Other factors, such as formal and informal social support, specific coping style, and personality factors may also affect the family concern-stress outcome relation. Also important to determine is the extent to which predeployment family concerns affect soldiers' operational readiness before a peace support mission, and whether predeployment family concerns affect soldiers' well-being and operational effectiveness during a mission. Other research has shown a link between family concerns and self-reports of operational effectiveness while deployed (Schumm & Bell, 2000). The present research suggests that family concerns were linked to increases in physical and psychological symptomology during predeployment These symptoms, in turn, may well affect operational readiness and effectiveness indicators

Future research may also wish to explore the associations among these variables in other occupational contexts. For example, while we have focused on military personnel because of their frequent deployments, many other police and security service employees spend extended periods of time away from home on work-related business For example, some police associations routinely require members to serve a designated period of time in a remote posting. In many instances the officers cannot bring their family with them because of logistical concerns (e g , spouses' jobs, children's schooling, mortgages) As well, after initial military stabilization or peacekeeping forces depart a country (e g., Haiti), police officers often are asked to deploy to those countries to train local police forces. In these instances, the empirical question is whether police officers in remote or overseas postings experience similar family-related concerns and whether those concerns are related to poor psychological well-being.

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