The effects of employee perceptions of organizational change on health and well-being.

by

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Abstract

The effects of employee perceptions of organizational change on health and well-being.

By Sarah N Crown

As organizations experience rapid change, employee health and well-being has emerged as an important issue. Changes in health districts are prevalent in Canada (OHA, 2002) and can result in psychological and physical stress among employees (Hylton, 2004). Organizational characteristics, such as increased support, job control, and justice can reduce stressors due to organizational change (e.g., Bond & Bunce, 2001). However, research has not examined the effectiveness of these organizational characteristics to reduce strain and the negative health effects of change-related stressors on health outcomes in the mental health-care setting. Therefore, I investigated how change-related stressors are related to strain, burnout, and well-being and how justice, social support and job control may moderate the relationship between change-related stressors and negative health outcomes. I examined whether the relationship between stressors and strain was mediated by resistance to change. Staff (N=202) who were involved in a large-scale organizational change at a District Health Authority in Atlantic Canada completed surveys about their attitudes toward the change, the impact of the change on their work, and their perceived levels of burnout and strain. Supervisor support, job control, and procedural justice moderated some of the relationships between change-related stressors and burnout, but not between change-related stressors and strain. Also, the data showed a good fit of the model of change-related stressors, resistance to change, and psychosocial health outcomes and support for partial mediation of resistance to change in the stressor-strain relationship. Implications for organizations and the health-care sector and suggestions for future research are discussed.

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The effects of organizational change on the health of their employees have gained increased attention. Many studies have shown that organizational changes, such as restructurings and mergers, can result in increased job stressors, such as role overload, role ambiguity (i.e., unclear expectations), and role conflict (Mak, 2001). Stress is the most costly of all modifiable risk factors to an employee's health (Goetzel, 2001), and these costs have been estimated to be $1.5 billion yearly in Canada alone (Colman, 2002). Cost for organizations include lost dollars in employee disability claims, employee absenteeism, and lost productivity (Spector, Chen & O’Connell, 2000; Xie & Schaubroek, 2001).

Because the hospital sector is the single largest component of health-care funding in Canada (CIHI, 2001), the government has devised ways to change spending of hospitals, most commonly by hospital restructuring (Barer, 1995). This type of organizational change has led to elimination of available hospital beds, merging of units, and consolidation of hospitals (Barer, 1995). With the introduction of District Health Authorities and changing funding priorities, organizational change has been prevalent across health districts in Canada (Ontario Hospital Association, 2002). Changes in the health-care setting have resulted in negative psychological and physical health, such as stress due to job loss, new working environments, and uncertain job security (Hylton, 2004). Despite the inevitability of various changes in the organization, negative strain and health outcomes are preventable. Various organizational characteristics may help alleviate these negative outcomes. Therefore, the goal of this study is to examine the impact of organizational change on the health and well-being of health-care workers and
the organizational characteristics that may help mitigate the negative effects of changes in
the workplace.

*Stressors, Stress and Strain*

Pratt and Barling (1988) proposed a general model of the stressor-strain relationship, suggesting that stressors are external objective events that the individual encounters on a daily basis. That is, stressors are concrete situations or factors that, when perceived as being negative or harmful (i.e., perceived stress), have the potential to create strain in an individual (Barling, 1990). Stress occurs when the individual experiences an internal response to persistent stressors. Thus, stress is a subjective state of appraising concrete and objective stressors in the environment as being negative or a threat (Day & Livingstone, 2003). A person’s perceived stress is when a stressor is “appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus & Folkman, 1984, p. 19). Stress has the potential to cause physical, cognitive and emotional displeasure for the individual in the form of strain (Kristensen, 1996). Strain occurs as a result of prolonged exposure to stress. Forms of strain can manifest in various psychological, behavioural, and physical symptoms (Bartone, Ursano, Wright, & Ingraham, 1989; Jex & Beehr, 1991). Behavioural strains are actions people take in response to stressors, such as drinking alcohol or staying home from work when not ill (Quick et al., 1997). Physical strains are manifestations of health, such as disease or physiological symptoms (e.g., headaches; Quick et al., 1997). Psychological strains are affective reactions, including attitudes (e.g., job dissatisfaction) or emotions (e.g., anxiety or frustration; Quick et al., 1997). A number of studies have shown that high levels of stressors are related to health complaints (Day & Livingstone, 2001; Jamal, 1999).
Organizational change

Stress and Burnout

Chronic stressors in the workplace can lead to burnout (Maslach & Jackson, 1981). Burnout refers to a drain of mental/emotional resources and is a work-related indicator of psychological health (Schaufeli & Enzmann, 1998). Burnout manifests itself in the form of emotional exhaustion (i.e., the depletion or draining of emotional resources), cynicism (i.e., negative, cynical attitude toward one’s job), and reduced professional efficacy (i.e., the tendency to evaluate oneself negatively with regard to one's accomplishments at work; Schaufeli, Leiter, Maslach, & Jackson, 1996). Burnout tends to be associated with many organizational stressors, such as high job demands, high workload, increased time pressure (Janessen et al, 1999), role ambiguity or role conflict (Elman & Dowd, 1997, Kilfedder et al., 2001), staff conflicts (Payne, 2001), and decreased autonomy or loss of control (Schnitz et al., 2000).

In the health-care setting, professionals such as therapists, social workers, and doctors, are susceptible to burnout (Minirth, Hawkins, Meir, & Flournoy, 1986). More specifically, particularly high levels of emotional exhaustion are prevalent among mental health staff (Prosser et al., 1996). Mental health workers tend to report increased levels of anxiety, depression, and stress (Deary et al., 1996). In addition, community staff report poorer mental health than hospital staff (Carson et al., 1996; Prosser et al., 1996). High patient caseloads among mental health nurses are associated with increased emotional exhaustion (Coffey & Coleman, 2001). Additionally, mental health units are often faced with few resources and high job demands, and often workers have difficulty maintaining quality service in light of long waiting lists and lack of job control (e.g., many interruptions in their day to day work; Burnard et al., 2000). In a qualitative study of
mental health workers, common organizational stressors included lack of control, work overload, administrative demands, lack of resources, and work-life spillover (Reid et al., 1999). Additionally, work intensity, understaffing, job insecurity, and continuous, rapid organizational change within the profession have all been identified as major sources of stress among mental health workers (Edwards et al., 2000).

Organizational change as a stressor

Organizational change can have a negative impact on employees' psychological well-being (Bourbonnais et al., 2005; Greenglass et al., 2002; Terry & Jimmieson, 2003). Organizational change is also associated with increased occupational stressors (Cartwright & Panchal, 2001), such as increased role conflict, role ambiguity, and increased workload (Swanson & Power, 2001). Organizational changes can also result in increased emotional exhaustion and work-family conflict (Burke & Greenglass, 1996). Kivimaki et al. (2000) reported that downsizing among municipal employees resulted in increased job demands, job insecurity, decreased job control, and poorer social relationships. Organizational changes in health-care settings have also resulted in negative outcomes. In a study of hospital nurses, negative appraisal of changes was related to decreased job satisfaction and an increase in absenteeism due to illness (Verhaeghe et al., 2006). In a longitudinal study among hospital employees going through re-engineering, there was a significant increase in depression, anxiety, emotional exhaustion, and job insecurity (Woodward et al., 1999). However, the negative outcomes of changes within the health-care setting may be alleviated by organizational factors such as increased organizational justice, job control and social support.
Organizational justice

Organizational justice theory (Greenberg, 1987) focuses on perceptions of fairness in organizations, by categorizing employees' views and feelings about how the organization treats them and their co-workers. Procedural justice is the perceived fairness of the procedures used to determine organizational outcomes (Cropanzano & Greenberg, 1997). Interactional justice is the interpersonal treatment people receive as procedures are enacted (Bies & Moag, 1986). Low levels of both dimensions of organizational justice have been implicated in various forms of employee stress and strain including difficulties concentrating, nervousness, and depression (Elovainio et al., 2001); emotional exhaustion, anxiety, and depression (Tepper, 2001); poor health, minor psychiatric morbidity, and work absence due to sickness (Elovainio et al., 2002). Negative worker reactions to organizational change are commonly seen as a result of perceptions of injustice; these perceptions have been associated with resistance to change, dissatisfaction, mistrust, and increased turnover intentions (Greenberg, 1990). Therefore, procedural and interactional justice may alleviate the negative effects of change-related stressors.

Research has demonstrated that giving employees the opportunity to provide input to decision makers (i.e., a “voice”) and offering justifications for decisions are effective methods of enhancing perceptions of procedural justice (Bies & Shapiro, 1988) and tend to have a positive effect on employees’ attitudes (Kernan & Hanges, 2002). Therefore, organizations undergoing changes have been advised to ensure that process fairness (i.e., procedural justice) is maintained and communicated to the workforce (Greenberg, 1990).
Similarly, in the context of organizational change, honest and direct communications with employees can reduce negative employee outcomes, such as stress (Schweiger & DeNisi, 1991). Justification of organizational decisions through effective explanations is a method of enhancing interactional justice and tends to give employees a greater sense of control (Daly & Geyer, 1994). Specifically, employees are more likely to accept decisions, even unfavourable ones, when given an adequate and genuine reason for it (Brockner & Greenberg, 1990; Daly & Geyer, 1994). Employees who receive timely, informative, and useful information about an organizational change are less likely to resist the change and present a more positive evaluation of the change (Wanberg & Banas, 2000). A study of reactions to a pay cut showed that adequate explanations reduced resistance to change and turnover intentions (Greenberg, 1990). A study of organizational change in a chemical facility concluded communications from management (from a variety of sources, including e-mail, staff meetings, and personal interactions) helped employees understand the events relating to the organizational change and increased employees’ perceptions of the procedural justice of the changes (Gopinath & Becker, 2000). In a study examining employees undergoing a change in pay, those who did not receive explanation for the change in pay (i.e., low procedural justice) showed decreased job satisfaction, lack of commitment, and increased turnover intentions (Schaubrock, May, & Brown, 1994).

*Organizational, supervisor, and co-worker support*

In general, sources of work support have been found to be predictive of reduced levels of job strain (Corrigan et al., 1995; Leiter, 1990). Appraisal of work demands are likely to be more favourable if one has support from co-workers, his or her supervisor, or
both, than if such support did not exist (Lazarus & Folkmann 1984). In an organizational context, support can come from supervisors, co-workers, and the organization itself.

Supervisors have the ability to influence the job satisfaction and health of employees. Supervisors’ supportive treatment leads to favourable outcomes for both the employee and the organization, such as decreased levels of negative health symptoms (Ganster, Fusilier, & Mayes, 1986), reduced work overload, emotional exhaustion, lower turnover intentions (Brotheridge & Lee, 2005), reduced work stress, and enhanced performance (Rhoades & Eisenberger, 2002; Viswesvaran, Sanchez, & Fisher, 1999). In a study examining community mental health nurses, supportive clinical supervisors predicted lower levels of depersonalization (i.e., negative attitudes towards patients; Edwards et al., 2006). Similarly, within the same sample of mental health nurses, supportive management predicted lower levels of both emotional exhaustion and negative work attitudes (Hannigan et al., 2000).

Supervisor support may be even more important during times of organizational changes within an organization. In a study examining the effects of worksite relocation on retail employees, perceived social support from managers was associated with decreased psychological stress (Moyle & Parkes, 1999). In a study of employees at a UK public utility plant, low levels of support from managers and colleagues was associated with increased levels of role conflict, role overload, and role ambiguity (Swanson & Power, 2001).

Additionally, supervisor support is associated with increased organizational support. Research has concluded that employees view supervisors’ support as representative of the organization’s favourable or unfavourable orientation toward them.
Organizational change (Eisenberger et al., 2002). Organizational support can reduce strain and stress by indicating the availability of resources and support required to face high demands at work (George et al., 1993).

Finally, in addition to supervisor and organizational support, research indicates that having well established sources of social support from co-workers is associated with positive individual outcomes (Gottlieb, 1981; Wang & Patten, 2001). Support from co-workers may reduce the negative effects of workplace stressors (House, 1981). In a study examining Dutch workers, social support was shown to reduce risks for the incidence of depressive and anxiety disorders when workers had high levels of job control (Plasier, de Bruijn, de Graaf, 2007). In mental health workers, support from co-workers can reduce symptoms of burnout (Corrigan, Holmes, & Luchins, 1995). Social support from coworkers can also be helpful to an individual attempting to cope with an organizational change that has impacted on his or her daily work life (Shaw, Fields, Thacker, & Fisher, 1993). In addition to the support one receives at work, the degree of control over one's work (i.e., job control) has been associated with a positive psychological health, positive work related attitudes and behaviours

Job Control

Job characteristics such as autonomy, deciding one's own working method and strategy (i.e., job control, Hackett & Oldman, 1975), are associated with increased motivation and positive mental health among employees (Fried & Ferris, 1987; Kelloway & Barling, 1991). High levels of control are directly associated with a wide range of positive outcomes, including decreased anxiety and depression (e.g., Mullarkey et al., 1997), burnout (Kushnir & Melamed, 1991), somatic health complaints (Fox, Dwyer &
Organizational change

Ganster, 1993), and increased job satisfaction (Day & Jreige, 2002, Tetrick & LaRocco, 1997) and worker health (Dwyer & Ganster, 1991). Bond and Bunce (2001) showed that job control predicts, one year later, mental health, job satisfaction, and job performance. Low levels of job control are often present in health-care settings, particularly among mental health staff (Reid et al., 1999). In a study of physicians, low control over work increased the level of stress experienced (Linzer et al., 2002). Additionally, increased job control can reduce negative health effects (e.g., sickness, absenteeism) related to organizational changes (Bond & Bunce, 2001; Kivimaki et al., 2001). In addition to the direct effects of these organizational factors on strain and burnout, these factors may buffer the negative impact of change-related stressors on health.

Moderating effect of organizational factors

Some studies have shown that social support may moderate the relationship between stressors and strain outcomes (e.g., Parkes et al., 1994, Stetz & Stetz, 2006). For example, organizational support moderated the relationship between role conflict and burnout for employees at a software development company (Jawahar, Stone, & Kisamore, 2007). Specifically, employees who experienced showed high levels of role conflict, but had high levels of organizational support, showed less emotional exhaustion than employees who had low organizational support. Additionally, in a study of clerical employees, high levels of supervisor and co-worker support moderated the relationship between job stressors and symptoms of depersonalization (i.e., impersonal feelings towards recipients of the employee’s services; Sargent & Terry, 2000). Specifically, employees faced with high job stressors and high levels of supervisor or co-worker support showed decreased symptoms of depersonalization, compared to employees with
low levels of supervisor or co-worker support. However, several studies have not shown any evidence for moderating effects of social support (e.g., Ganster, Fusilier, & Mayes, 1986; Kaufmann & Beehr, 1986).

Although few studies have examined interactional and procedural justice as potential moderators of the stressor-strain relationship, it is feasible that they may buffer the negative impact of stressors on individual health outcomes. Therefore, I will examine these forms of justice as moderators in the relationship between change-related stressors and health outcomes.

There has been mixed support for the ability of job control to moderate the stressor/strain relationship (Beehr & Glazer, 2005). Beehr, Walsh, and Taber (1976) found that autonomy over one’s work moderates the relationship between role ambiguity and depression. In a meta-analytic review, job control has been shown to moderate the relationship between work demands and health outcomes (see Van der Doef & Maes, 1999 for review). However, other researchers have found that job control does not moderate the stressor/strain relationship (e.g., O’Driscoll & Beehr, 2000). Although the relationship between job control and stressors and strain is unclear, job control may buffer the negative outcomes of organizational changes. In addition to the direct and buffering effects of organizational characteristics on employee health, employee’s attitudes towards organizational changes may play an important role in predicting negative health outcomes resulting from organizational changes.

*Resistance to change*

Resistance to change has been defined as a three-dimensional negative attitude towards change, which includes affective, behavioural, and cognitive components.
Organizational change (Piderit, 2000). The affective component is how an employee feels about the change (e.g., angry, anxious). The cognitive component involves what the employee thinks about the change (e.g., will it be beneficial?). The behavioural component involves actions or intentions to act in response to the change (e.g., complaining about the change; Piderit, 2000). Attitudinal reactions to change are thought to be driven, in part, by feelings of uncertainty, loss of control, and fear of failure engendered by the change events (e.g., Ashford, Lee, & Bobko, 1989; Coch & French, 1948; Oreg, 2003). Employees experiencing high levels of stress during organizational change report increased resistance to change (Wanberg & Banas, 2000). This resistance is associated with lower levels of job satisfaction and with greater intention to quit (Wanberg & Banas, 2000). Additionally, employees' lack of faith in the organization's change (i.e., cognitive resistance) is linked to increased frustration and anxiety (Oreg, 2003). Therefore, resistance to change may play an important part in predicting negative health outcomes. This study will examine how employee's resistance to change may predict negative health outcomes.

Summary and hypotheses

Some studies have examined the effects of organizational change on the well-being of nurses (Greenglass et. al, 2002), mental health nurses (Reid, 1999), and physicians (Caplan, 1995), but few studies have examined its effects on other mental health workers (e.g., employees in administrative, education, and research positions). These staff members may not be directly involved in patient care, but they provide direct support to health professionals and are integral to the health-care system. Therefore, my
research will provide a practical contribution to the literature in examining this often forgotten group of the health-care sector.

Few studies, especially in the health-care setting, have examined the effectiveness of organizational characteristics to alleviate the negative health effects of change-related organizational stressors. Specifically, I will examine the extent to which organizational characteristics (i.e., support, justice, and job control) are directly related to strain and burnout, as well as the extent to which they may buffer the negative effects of change-related stressors. I will investigate how perceptions of organizational change and change-related stressors directly influence strain and burnout. Finally, I will examine the concept of resistance to change and its association with change-related stressors and negative health symptoms.

Past research on mental health workers has indicated that workplace stressors are associated with negative health outcomes (Coffey & Coleman, 2001) and mental health workers view organizational change as stressors (Edwards et al., 2000). I will further examine the relationship between stressors and negative health outcomes in mental health workers, but will examine change-related stressors and their association with negative health outcomes.

Hypothesis 1: Higher levels of change-related stressors will be associated with increased symptoms of strain and burnout.

Low levels of procedural and interactional justice have been associated with negative health outcomes among employees (Elovainio, 2001). These negative health outcomes due to low procedural and interactional justice are also present during time of organizational change (Kernan & Hanges, 2002). Research also indicates that forms of
support, such as supervisor support (Moyle & Parkes, 1999), organizational support (George et al., 1993), and co-worker support (Corrigan, Holmes, & Luchins, 1995) can reduce negative health outcomes in employees. Lastly, increased job control has been associated with decreased negative health outcomes (Fox, Dwyer & Ganster, 1993). Therefore, I will examine the relationship between these organizational characteristics and their association with negative health outcomes with a sample of mental health workers undergoing organizational changes.

**Hypothesis 2:** Low levels of justice, job control, and social support will be associated with increased negative health outcomes (i.e., increased strain symptoms, emotional exhaustion, cynicism, and decreased professional efficacy).

In addition to these direct effects, low support, justice and control may moderate the stressor-strain relationship. Specifically, at high levels of support, justice and control, employees may experience reduced negative health outcomes, regardless of the level of change-related stressors. Conversely, at low levels of justice, support and control, increased change-related stressors will be associated with increased strain and burnout. There have been mixed results on the notion of job control (Beehr & Glazer, 2005) and social support (Kaufmann & Beehr, 1986) as moderators in the stressor-strain relationship. Additionally, these characteristics have not been examined as moderators with a sample of mental health workers. I will also examine these variables in the context of stressors due to organizational change.

**Hypothesis 3:** Justice, job control, and support will moderate the relationship between change-related stressors and health outcomes (i.e., strain burnout). That is, high levels of support, justice, and control will be associated with decreased negative health
symptoms, regardless of the degree of change-related stressors, whereas low levels of support, justice, and control will be associated with increased negative health symptoms, especially when stressors are high.

Finally, increased stressors have been associated with resistance to change (Wanberg & Banas, 2001), and resistance to change has been associated with increased negative health symptoms (Oreg, 2003). However, because this multidimensional model of resistance to change is relatively new, no studies have examined how resistance to change may mediate the relationship between stressors and negative health outcomes. This study will examine this relationship, but focusing on change-related stressors.

Hypothesis 4: Change-related stressors will predict resistance to change, which will in turn predict negative health outcomes. Higher levels of stressors will be associated with increased resistance to change and higher levels of resistance to change will predict increased strain and burnout negative psychosocial well-being (see Figure 1).

Method

Background

The present study examined organizational changes at a District Health Authority in Atlantic Canada. These changes were the result of the implementation of a five year strategic plan. Organizational changes were necessary in this setting to align mental health services with the provincial mandate for mental health. The changes affected over 600 employees in 15 mental health units across five work settings, thus the changes were widespread across numerous work groups. The changes within the mental health units were aimed at making mental health services more accessible to the public, to increase
Figure 1. Hypothesized model of resistance to change as a mediator between change-related stressors and negative health outcomes.
clinical care, to increase education and research on mental health issues, and to develop a person-focused approach. At the time of data collection, the organization was in its first year and a half of implementation of the strategic changes. Most of the employees, particularly in the inpatient and community settings, were facing numerous changes as a result of the implementation. Some of the common changes for employees included moving worksites to community settings, the set up of new units, merging with existing units, hiring of new academic and clinical managers, and changing the way employees approached their work (e.g., changing the focus from inpatient care to community focused care, development of new models of patient care).

Procedure

Data were collected using a confidential and anonymous mail-out questionnaire that was sent to 675 mental health workers employed under various mental health programs of a District Health Authority. Participants had the option of completing the paper and pencil or the online version of the questionnaire. The sample (N=202) represented a 30% response rate.

Participants

Participants were 202 staff members (81% female, 19% male) and ranged in age from 24 to 68, with a mean age of 45.40. The majority of the sample was employed full-time (85%) with the remaining employed part-time (11%), casual (3%) or other (1%; e.g., short assignment). The majority of the sample (i.e., 70%) was employed in a clinical setting, with 36.3% employed in clinical outpatient units and 34.8% employed in clinical inpatient units. The remaining sample was employed in administrative (15%) or research...
or education (5%) settings, or other (10%; e.g., program coordinator). The average tenure of the sample was 6-10 years. The majority of the sample (i.e., 80%) completed the paper and pencil version of the questionnaire, while the remaining (i.e., 20%) completed the online version of the questionnaire.

**Measures**

Participants responded to a paper and pencil or on-line survey that consisted of the following measures:

*Demographics.* Participants were asked to indicate their age, gender, employment status, employment position, and tenure with the organization.

*Organizational change-related stressors.* Organizational change-related stressors were measured using an 11-item scale designed by the researcher to measure job stressors related to the organizational change. This scale is based on existing validated job stressor scales (e.g., Beehr et. al, 1976; Rizzo et. al, 1970) that characterize job stressors as comprising the dimensions of role conflict, role overload, and job ambiguity. These concepts were modified to indicate stressors directly arising from the organizational change. The 11-item scale measures each of these dimensions (e.g., “Organizational changes have made it more difficult for me to get my work completed”) and is rated on a 7-point Likert-scale with responses ranging from “strongly disagree” (1) to “strongly agree” (7). Internal reliability of this scale was very good, with a Cronbach’s alpha of $\alpha = .84$, with all item-total correlations greater than $r = .35$.

*Resistance to change.* Employee resistance to change was measured using the Change Attitude Scale (Oreg, 2003). This scale measures affective, cognitive and

---

1 We were unable to identify the position (e.g., nurses, manager) of the employees surveyed because some units in the health authority were small and such identification would have jeopardized anonymity.
behavioural resistance to change. The scale contains five items that measure affective resistance (e.g. “I have a bad feeling about the changes”), five items that measure behavioural resistance (e.g., “I complain about the changes to my colleagues”), and five items that measure cognitive resistance (e.g., “I believe that the changes would make my job harder”). Responses are rated on a 7-point Likert-type scale with options ranging from “strongly disagree” (1) to “strongly agree” (7). Internal reliability of these scales were excellent. The cognitive resistance subscale showed a Cronbach’s alpha of $\alpha = .90$, with all item-total correlations greater than $r = .63$. The affective resistance subscale showed a Cronbach’s alpha of $\alpha = .86$, with all item-total correlations greater than $r = .53$. The behavioural resistance subscale showed a Cronbach’s alpha of $\alpha = .79$, with all item-total correlations greater than $r = .39$.

*Justice.* Procedural and interactional justice perceptions were measured using the procedural and interactional justice subscales of the four-dimensional justice measure created and validated by Colquitt (2001). The items were modified to reflect the procedures and information received in relation to the changes. Procedural justice was measured with seven items (e.g., “Have the procedures associated with the change been applied consistently?”). Responses are rated on a 7-point Likert-type scale with options ranging from “strongly disagree” (1) to “strongly agree” (7). Internal reliability of this scale was excellent, with a Cronbach’s alpha of $\alpha = .89$, with all item-total correlations greater than $r = .57$.

Interactional justice was measured with nine items (e.g., “The details of the changes have been communicated in a timely matter”). Responses are rated on a 7-point Likert-type scale with options ranging from “strongly disagree” (1) to “strongly agree”
Internal reliability of this scale was excellent, with a Cronbach's alpha of $\alpha = .94$, with all item-total correlations greater than $r=.49$.

*Organizational support.* Organizational support was assessed using Eisenberger, Cummings, Armeli, and Lynch's (1997) short version of the Survey of Perceived Organizational Support (SPOS). This version of the SPOS contains 8 of the 36 items that loaded highly on the main POS factor reported in the scale's source article by Eisenberger et al. (1986). This scale consists of 8 items (e.g., “The organizational really cares about my well-being.”), with a 7-point Likert-type response scale with options ranging from “strongly disagree” (1) to “strongly agree” (7). Internal reliability of this scale was very good, with a Cronbach's alpha of $\alpha = .88$, with all item-total correlations greater than $r=.55$.

*Supervisor support.* Consistent with Eisenberger et al. (2002), perceived supervisor support was measured using the same items in the SPOS but modified by replacing the words *organization* with the word *supervisor* (e.g., “My supervisor really cares about my well-being”). The same 7-point Likert scale is used as with the SPOS (i.e., 1= strongly disagree, 7= strongly agree). Internal reliability of this scale was excellent, with a Cronbach’s alpha of $\alpha = .93$, with all item-total correlations greater than $r=.69$.

*Co-worker support.* Consistent with Eisenberger et al. (2002), perceived co-worker support was measured using the same items in the SPOS but modified by replacing the words *organization* with the word *co-workers* (e.g., “My co-workers really care about my well-being”). The same 7-point Likert scale is used as with the SPOS (i.e.,
1 = strongly disagree, 7 = strongly agree). Internal reliability of this scale was very good, with a Cronbach’s alpha of \( \alpha = 0.88 \), with all item-total correlations greater than \( r = 0.60 \).

**Job Control.** Control was measured using an abbreviated version of Dwyer and Ganster’s (1990) job control scale. The scale consists of 16-item, with a 7-point Likert-type response scale ranging from “no control at all” (1) to “a great deal of control” (7). Internal reliability of this scale was very good, with a Cronbach’s alpha of \( \alpha = 0.87 \), with all item-total correlations greater than \( r = 0.37 \).

**Strain.** Psychological, behavioural, and physical strain will be measured with the 20-item Symptom Checklist (Bartone, Ursano, Wright & Ingraham, 1989). The prevalence of health symptoms and complaints (e.g. upset stomach, overly tired, headaches) are assessed on a 7-point Likert scale ranging from “never” (1) to “always” (7). Internal reliability of this scale was excellent, with a Cronbach’s alpha of \( \alpha = 0.92 \), with all item-total correlations greater than \( r = 0.37 \).

**Burnout.** Burnout was measured using the Maslach Burnout Inventory- General Survey (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996). Developed from the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1996), the MBI–GS evaluates burnout among professionals with and without the direct client contact that characterizes human service professions (Leiter & Schaufeli, 1996). Whereas the original MBI would have focused on the service roles of hospital staff providing direct patient care, use of the MBI–GS allowed assessment of all staff members, including those who provide indirect care or support services. This inventory has 16 items and participants are asked to provide a rating for each item, ranging from “never” (0) to “everyday” (7). The MBI measures three dimensions: (1) emotional exhaustion, (2) cynicism, and (3)
professional efficacy. The emotional exhaustion domain consists of five items (e.g., "I feel emotionally drained from my work"). Internal reliability of this scale was excellent, with a Cronbach’s alpha of $\alpha = .91$, with all item-total correlations greater than $r=.55$. The cynicism domain has five items (e.g., "I just want to do my job and not be bothered"). Internal reliability of this scale was very good, with a Cronbach’s alpha of $\alpha = .83$, with all item-total correlations greater than $r=.41$. The professional efficacy domain includes six items (e.g., "I have accomplished many worthwhile things in this job"). Internal reliability of this scale was adequate, with a Cronbach’s alpha of $\alpha = .71$, with all item-total correlations greater than $r=.55$.

Results

Prior to testing the hypotheses, the data were screened for outliers, data entry errors, non-random missing data, and violations of assumptions including non-linearity, non-normality, multicollinearity, and heteroskedasticity. Frequencies and descriptive statistics were run using SPSS 14.0 for Windows. No outliers or any violations of assumptions were identified. Missing data were treated using listwise deletion resulting in the removal from the analysis of any case missing a value on any of the variables included in that analysis.

Descriptive statistics of all study variables are presented in Table 1. Correlations among study variables are presented in Table 2. As expected, change-related stressors were associated with higher emotional exhaustion ($r=.41, p<.001$), cynicism ($r=.36, p<.001$), reduced professional efficacy ($r=-.25, p<.001$), and higher strain ($r=.45, p<.001$).
Organizational change

Moderated regression analyses were used to test the hypothesis that job control, social support, and justice would moderate the relationship between change-related stressors and negative health outcomes (Hypothesis 2). Six sets of regression analyses were conducted; one for each of the moderators (i.e., supervisor support, co-worker support, organizational support, procedural justice, interactional justice and job control; see Table 3 - Table 8). The moderators were tested on four health outcomes: strain, emotional exhaustion, cynicism, and professional efficacy. The procedures for moderation analysis as outlined by Aiken and West (1991) were used. Prior to analysis, all of the variables were standardized and interaction terms were created between the predictor and the moderator.

For all analyses, change-related stressors were entered in the first step. Each of the three aspects of social support, the two aspects of organizational justice, or job control were entered in the second step, and the interaction between each of these variables and change-related stressors was entered in the third step (see Tables 3-8).

Support

When entered on the first step, change-related stressors accounted for a significant amount of variance in strain ($R^2 = .17, \beta = .45, p < .001$). When social support was entered in the second steps, only organizational and supervisor support accounted for a significant amount of variance in strain ($R^2_{\text{change}} = .03$ and $.04, \beta = -.22$ and -.19 respectively, $p < .01$). However, neither of the interactions between change-related stressors and the three forms of support were significant.

\footnote{Aiken and West (1991) recommended that variables be centered. However, standardization accomplishes the same effect and also makes computation of the interactions easier because it changes the standard deviations to +/-1.}
Table 1.

Means and standard deviations of study variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
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</thead>
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<tr>
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<td>.92</td>
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</table>

Note: N=202, All measures are on a 1-7 scale.
Table 2.

Correlations among study variables. Reliability coefficients for each of the measures are shown in parentheses along the diagonal.

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<td>-.14*</td>
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<td>.34*</td>
<td>.50*</td>
<td>-.32*</td>
<td>-.32*</td>
<td>(.92)</td>
</tr>
</tbody>
</table>

*Note: N=202 for all correlations
*p<.001; *p < .01; *p < .05
When entered on the first step, change-related stressors accounted for a significant amount of variance in emotional exhaustion ($R^2 = .17, \beta = .41, p < .001$). When social support was entered in the second steps, organizational and supervisor support accounted for a significant amount of variance in emotional exhaustion ($R^2_{change} = .10$ and .01, $\beta = -.35$ and -.12 respectively, $p < .01$). Additionally, the interaction of change-related stressors and supervisor support was significant ($R^2_{change} = .02, \beta = -.16, p < .05$). Employees with low levels of supervisor support reported markedly higher levels of emotional exhaustion when faced with high change-related stressors compared to those with high supervisor support (see Figure 2). Co-worker support did not explain any additional variance in emotional exhaustion when entered in the second step ($R^2_{change} = .00, \beta = .01 p > .05$); the interaction between co-worker support and change-related stressors was also not significant ($R^2_{change} = .00, \beta = -.05, p > .05$).

When entered in the first step change-related stressors accounted for a significant amount of variance in cynicism ($R^2 = .13, \beta = .36, p < .001$). Organizational support accounted for a significant increase in variance in cynicism when entered on the second step ($R^2_{change} = .07, \beta = -.29, p < .001$). The interaction for organizational support was not significant ($R^2_{change} = .00, \beta = -.04, p > .05$). Supervisor support also accounted for a significant increase in variance in cynicism when entered on the second step ($R^2_{change} = .05, \beta = -.24, p < .01$). Additionally, the interaction of change-related stressors and supervisor support was significant ($R^2_{change} = .04, \beta = -.17, p < .01$). Specifically, employees with high levels of supervisor support reported lower levels of cynicism compared to those with low levels of supervisor support, regardless of the level of change-related stressors. However, employees with low supervisor support showed a markedly higher...
level of cynicism when faced with a high level of change-related stressors, compared to employees who reported high levels of supervisor support and high change-related stressors (see Figure 3). Co-worker support did not explain any additional variance in cynicism when entered in the second step ($R^2_{change} = .00, \beta = -.05, p > .05$); the interaction between co-worker support and change-related stressors was also not significant ($R^2_{change} = .00, \beta = -.07, p > .05$).

When entered in the first step change-related stressors accounted for a significant amount of variance in professional efficacy ($R^2 = .06, \beta = -.25, p < .001$). When social support was entered in the second steps, supervisor support, co-worker support, or organizational support did not account for a significant amount of variance in professional efficacy ($R^2_{change} = .00, .00, and .01, \beta = .01, .09, .09$ respectively, $p > .05$). Neither of the interactions between change-related stressors and supervisor, co-worker, or organizational support were significant ($R^2_{change} = .00, .01, 01, \beta = -.05, -.03, -.08$, respectively, $p > .05$).

Justice

When entered on the second step, interactional justice accounted for an increase in variance in strain ($R^2_{change} = .02, \beta = -.15, p < .05$), but not procedural justice ($R^2_{change} = .01, \beta = -.11, p > .05$). However, neither interactions were significant in the third step ($R^2_{change} = .01, .01, \beta = .09, -.21$ respectively, $p > .05$).

Procedural justice accounted for a significant increase in variance in emotional exhaustion when entered in the second step ($R^2_{change} = .05, \beta = -.25, p < .001$). Additionally, interactional justice also accounted for a significant increase in variance ($R^2_{change} = .09, \beta = $...
Organizational change

-32, p<.001). However, neither of the interactions were significant ($R^2_{change} = .00, .00, \beta = .06, -.00$ respectively, $p > .05$).

Procedural justice accounted for a significant increase in variance in cynicism when entered in the second step ($R^2_{change} = .05, \beta = -.25, p<.001$). Interactional justice also accounted for a significant increase in variance in cynicism ($R^2_{change} = .08, \beta = -.32 p<.001$). However, neither of the interactions between procedural justice, interactional justice and change-related stressors were significant in the third step ($R^2_{change}$ ranged from .003 to .004, $\beta = -.06, -.06, p > .05$).

When entered in the second step, procedural and interactional justice did not account for a significant increase in variance in professional efficacy ($R^2_{change} = .00$ and .01, $\beta = .02, .08$ respectively, $p>.05$). However, the interaction between change-related stressors and procedural justice was significant ($R^2_{change} = .03, \beta = -.18, p<.05$).

Specifically, employees with high levels of procedural justice reported increased levels of professional efficacy. However, employees with low procedural justice showed lower levels of professional efficacy when faced with a high level of change-related stressors, compared to employees who reported high levels of procedural justice and high change-related stressors (see Figure 4).

Job Control

Finally, job control accounted for significant amount of variance in strain when entered in the second step ($R^2_{change} = .08, \beta = -.30, p<.001$). However, the interaction between change-related stressors and job control was not significant ($R^2_{change} = .01, \beta = -.10, p>.05$). Job control accounted for significant amount of increase in variance in emotional exhaustion when entered in the second step ($R^2_{change} = .03, \beta = -.19, p<.001$) and
the interaction between change-related stressors and job control was significant ($R^2_{\text{change}} = .01, \beta = -.13, p < .05$). Specifically, employees with high levels of control reported lower levels of emotional exhaustion compared to those with low levels of control, regardless of the level of change-related stressors. However, employees with low job control showed a markedly higher level of emotional exhaustion when faced with a high level of change-related stressors, compared to employees who reported high levels of job control and high change-related stressors (see Figure 5).

Job control accounted for significant increase in variance in cynicism when entered in the second step ($R^2_{\text{change}} = .02, \beta = -.24, p < .05$), however the interaction between change-related stressors and job control was not significant ($R^2_{\text{change}} = .01, \beta = .15, p > .05$). Job control accounted for significant amount of increase in variance in professional efficacy in the second step ($R^2_{\text{change}} = .03, \beta = -.17, p < .05$). However, the interaction between change-related stressors and job control was not significant ($R^2_{\text{change}} = .02, \beta = .11, p = .06$).

Model Testing

The measurement model for this study was comprised of three factors (i.e., change-related stressors, resistance to change, and negative health outcomes). Stressors due to organizational change were indicated by three variables, role ambiguity, role overload and role conflict. This change-related stressors scale is based on existing validated job stressors scales (e.g., Beehr et. al, 1976; Rizzo et. al, 1970) that are comprised of these dimensions. However, in this study they were operationalized in the context of organizational change. Resistance to change was indicated by cognitive resistance, affective resistance, and behavioral resistance, consistent with its theoretical
dimensions (Oreg, 2003). Negative health outcomes were indicated by strain, emotional
exhaustion and cynicism. Professional efficacy was not included with the negative health
outcomes as it tends to show lower correlations with the other burnout dimensions (e.g.,
Leiter et al., 1994; Toppinen-Tanner, Kalimo, & Mutanen, 2002). Also, the model
examined immediate health outcomes resulting from stressors. Specifically, it follows the
format of past research (e.g., Leiter, 1991; 1993) in that emotional exhaustion is an
immediate reaction to stressors in the organization. Increased exhaustion, in turn, is
related to increased cynicism as well as physical symptoms of stress. Thus, cynicism and
strain occur in conjunction with feelings of exhaustion (Kahill, 1988; Leiter, 1993).
Professional efficacy is generally argued to follow cynicism sequentially (Leiter, 1993,
Toppinen-Tanner, Kalimo, & Mutanen, 2002). Therefore, this study only examined the
immediate health outcomes of stressors (i.e., strain, emotional exhaustion and cynicism).
Table 3.
Summary of regression analyses for the interaction effects between change-related stressors and supervisor support on negative health outcomes (N=202).

<table>
<thead>
<tr>
<th></th>
<th>Strain</th>
<th>Emotional Exhaustion</th>
<th>Cynicism</th>
<th>Professional Efficacy</th>
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<tbody>
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<td></td>
<td>B</td>
<td>β</td>
<td>R²</td>
<td>Total R²</td>
</tr>
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<td>Step 2: Supervisor support</td>
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<td>- .22b</td>
<td>.04b</td>
<td>.24b</td>
</tr>
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<td>Step 3: Change-related stressors: Supervisor support</td>
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<td>.01</td>
<td>.01</td>
<td>.25</td>
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</tbody>
</table>

*p <.001;  b p < .01;  c p < .05
Table 4.

Summary of regression analyses for the interaction effects between change-related stressors and co-worker support on negative health outcomes (N=202).

<table>
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<tr>
<th></th>
<th>Strain</th>
<th>Emotional Exhaustion</th>
<th>Cynicism</th>
<th>Professional Efficacy</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>B</td>
<td>β</td>
<td>R²</td>
<td>Total</td>
</tr>
<tr>
<td><strong>Step 1: Change-related stressors</strong></td>
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<td>.45*</td>
<td>.20*</td>
<td>.20*</td>
</tr>
<tr>
<td><strong>Step 2: Co-worker support</strong></td>
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<td>-.05</td>
<td>.00</td>
<td>.20</td>
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<td><strong>Step 3: Change-related stressors and Co-worker support</strong></td>
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<td>.10</td>
<td>.01</td>
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*p < .001; † p < .01; ‡ p < .05
### Table 5.

Summary of regression analyses for the interaction effects between change-related stressors and organizational support on negative health outcomes (N=202).

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</tr>
<tr>
<td>Change-related stressors x Organizational support</td>
<td>-.09</td>
<td>-.10</td>
<td>.01</td>
<td>.25</td>
<td>-.06</td>
<td>-.04</td>
<td>.00</td>
</tr>
</tbody>
</table>

*p < .001; $^b$ p < .01; $^c$ p < .05
Table 6.

Summary of regression analyses for the interaction effects between change-related stressors and procedural justice on negative health outcomes (N=202).

<table>
<thead>
<tr>
<th>Strain</th>
<th>Emotional Exhaustion</th>
<th>Cynicism</th>
<th>Professional Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$\beta$</td>
<td>$R^2$</td>
</tr>
<tr>
<td>Step 1: Change-related stressors</td>
<td>.42*</td>
<td>.45*</td>
<td>.20*</td>
</tr>
<tr>
<td>Step 2: Procedural justice</td>
<td>.11</td>
<td>-.11</td>
<td>.01</td>
</tr>
<tr>
<td>Step 3: Change-related stressors Procedural justice</td>
<td>-.05</td>
<td>-.06</td>
<td>.00</td>
</tr>
</tbody>
</table>

*a p < .001; *b p < .01; *c p < .05
Table 7.

Summary of regression analyses for the interaction effects between change-related stressors and interactional justice on negative health outcomes (N=202).

<table>
<thead>
<tr>
<th></th>
<th>Strain</th>
<th>Emotional Exhaustion</th>
<th>Cynicism</th>
<th>Professional Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>R²</td>
<td>Total</td>
</tr>
<tr>
<td><strong>Step 1:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change-related</td>
<td>.42</td>
<td>.45</td>
<td>.20</td>
<td>.20</td>
</tr>
<tr>
<td>stressors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactional</td>
<td>-.14</td>
<td>-.15</td>
<td>.02</td>
<td>.22</td>
</tr>
<tr>
<td>justice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change-related</td>
<td>-.09</td>
<td>-.10</td>
<td>.01</td>
<td>.23</td>
</tr>
<tr>
<td>stressors +</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>justice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a p < .001; *b p < .01; *p < .05
Table 8.
Summary of regression analyses for the interaction effects between change-related stressors and job control on negative health outcomes (N=202).

<table>
<thead>
<tr>
<th>Strain</th>
<th>Emotional Exhaustion</th>
<th>Cynicism</th>
<th>Professional Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>(R^2)</td>
</tr>
<tr>
<td></td>
<td>(R^2)</td>
<td>change</td>
<td></td>
</tr>
<tr>
<td>Step 1: Change-related stressors</td>
<td>.42*</td>
<td>.45*</td>
<td>.20*</td>
</tr>
<tr>
<td>Step 2: Job control</td>
<td>-.28*</td>
<td>-.30*</td>
<td>.08*</td>
</tr>
<tr>
<td>Step 3: Change-related stressors</td>
<td>Job control</td>
<td>-.09</td>
<td>-.10</td>
</tr>
</tbody>
</table>

*a*p < .001; *b* p < .01; *c* p < .05
Figure 2. Interaction of change-related stressors and supervisor support on emotional exhaustion.
Figure 3. Interaction of change-related stressors and supervisor support on cynicism.
Figure 4. Interaction of change-related stressors and procedural justice on professional efficacy.
Figure 5. Interaction of change-related stressors and job control on emotional exhaustion.
Because the three dimensional model of resistance to change is relatively new and its factor structure has not yet been widely tested (e.g., Oreg, 2006), I conducted an Exploratory Factor Analysis (EFA) based on the theoretical three-factor model of resistance to change (i.e., affective, cognitive, and behavioural resistance; Oreg, 2006). Principal Component (PC) analysis was used using oblique rotation. Oblique rotation is the appropriate procedure to use when factors are highly correlated as in the present case. The scree plot and eigenvalues show evidence for a three-factor solution. Specifically, the scree plot indicated a change in slope at the third component. The three-factor solution explained 68.78% of the variance, with the three factors all showing eigenvalues greater than one. However, not all items loaded significantly onto their respective factors and there was evidence of items cross loading on more than one factor. Therefore, I also examined the 1-factor model, which explained 58.61% of the variance. However, because of the theoretical rationale for these three components, as well as the fit of the 1-factor model, I assessed resistance using a latent component, with the three separate factors as measured variables.

To examine the measurement model of change-related stressors, resistance to change, and psychosocial outcomes (i.e., Hypothesis 4), confirmatory factor analysis (CFA) using maximum likelihood estimation was conducted, using EQS, Version 6.1. A CFA was conducted based on the theoretical three-factor model of outcomes (i.e., change-related stressors, resistance to change, and negative psychosocial health). The fit indices for the model are presented in Table 9 and the measurement model is depicted in Figure 6.
Hu and Bentler (1998) advocated the use of at least two fit indices when presenting the results of a CFA and recommended always using the standardized root mean square residual (SRMR), because it is the most sensitive to misspecification error (i.e., the SRMR is generally low when the model is a good fit and generally high when the model is a poor fit). Furthermore, Tabachnick and Fidell (2001) stated that the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) are the most commonly reported fit indices. Therefore, in this study the SRMR, the CFI, and the RMSEA will be presented. Hu and Bentler (1999) suggested that a SRMR less than .08, a CFI greater than .95, and a RMSEA lower than .06 indicate a good fitting model.

For the three-factor measurement model, the SRMR was .05; the CFI was .93, indicating a good fit. However, the RMSEA was .14, indicating a poor fit (see Table 10). All loadings were significant and each variable accounted for at least 50.0% of the variance in the solution (see Figure 6).

Table 9.

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>SRMR</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Three-factor model measurement model</td>
<td>103.10.a</td>
<td>.05</td>
<td>.93</td>
<td>.14</td>
</tr>
<tr>
<td>2. Direct effects model</td>
<td>224.26.a</td>
<td>.26</td>
<td>.83</td>
<td>.21</td>
</tr>
<tr>
<td>3. Fully mediated model</td>
<td>115.04.a</td>
<td>.07</td>
<td>.92</td>
<td>.15</td>
</tr>
<tr>
<td>4. Fully specified indirect and direct effects model</td>
<td>104.58.a</td>
<td>.05</td>
<td>.94</td>
<td>.14</td>
</tr>
</tbody>
</table>

* $p < .001$
To examine the mediated structural path model of change-related stressors, resistance to change and psychosocial outcomes, structural equations modeling using maximum likelihood estimation was conducted. The use of structural equation modeling provides researchers with a good strategy to test for mediation when a model involves latent constructs (Baron & Kenny, 1986). In accordance with the four basic steps to establish mediation effects proposed by Baron and Kenny (1986), three models were tested and compared.

It was first necessary to determine if the hypothesized direct effects from change-related stressors and negative health outcomes, and resistance to change and negative health outcomes were significant (Baron & Kenney, 1986). The first model was a test of direct effects, with change-related stressors and resistance to change predicting negative health outcomes. This criterion was met in that the standardized coefficients of these pathways were statistically significant and each variable accounted for at least 48% of the variance in the solution (see Figure 7). For this model, the CFI was .83, the RMR was .26 and the RMSEA was .21, all indicating a poor fit.

The second model tested a fully mediated (indirect effects) model with change-related stressors predicting resistance to change, which, in turn, predicts negative health outcomes. For this model, the CFI was .92 and the SRMR was .07 indicating adequate fit. The RMSEA was .15 indicating a poor fit. All path coefficients were significant and each variable accounting for at least 53% of the variance in the solution (see Figure 8).

The third model tested a fully specified indirect and direct effects path model, where change-related stressors predicted negative health outcomes directly, as well as indirectly through resistance to change. For this model, the SRMR was .05 and the CFI
was .94, indicating a good fit. The RMSEA was .14, indicating a poor fit. All path coefficients were significant and each variable accounted for at least 41.0% of the variance in the solution (see Figure 9).

In order to test for mediation, the fully mediated and fully specified indirect and direct effects models must be compared. The underlying logic is that if mediation is present, goodness of fit should not significantly improve when the direct path is included in the model. In other words, the indirect or mediating paths provide a significantly better model fit when they are considered without the presence of the direct effect (Holmbeck, 1997). If this condition holds, it is indicative of partial mediation, which occurs when the direct effect is significantly reduced (mediated) by the indirect effect, but it is not reduced to zero. When the direct effect, however, is reduced to zero it represents full mediation.

Using a chi-square difference test (Tabachnick and Fidell, 2001), the fully specified indirect and direct effects model was compared to the full mediated model to examine if there was a significant difference in fit. The chi-square difference test indicated that the fully indirect and direct effects model fit the data better than the fully mediated model ($\chi^2_{\text{difference}} = 10.46, df = 1, p < .01$). Therefore, these results indicate evidence for a partial mediation. Also, when comparing the path coefficients for the fully specified indirect and direct effects model and the fully mediated model indicates the relationship between change-related stressors and health is reduced from .48 to .42 with the addition of the mediator. However, the path between change-related stressors and negative health outcomes remains significant with the mediator variable present, thus indicating partial mediation.
Figure 6. EQS estimates of the three-factor measurement model ($N=202$). ³

³ Standardized loadings are reported. Please note that * indicates loadings that are significant at $p < .05$. 

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Figure 7. EQS estimates of the direct effects path model ($N=202$).\textsuperscript{4}

\textsuperscript{4} Standardized loadings are reported. Please note that $\dagger$ indicates loadings that are significant at $p < .05$. 

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Figure 8. EQS estimates of the fully mediated structural path model ($N=202$).\(^5\)

\(^5\) Standardized loadings are reported. Please note that \(^*\) indicates loadings that are significant at $p < .05$. 

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Figure 9. EQS estimates of the fully specified indirect and direct effects structural path model ($N=202$).\textsuperscript{6}

\textsuperscript{6} Standardized loadings are reported. Please note that * indicates loadings that are significant at $p < .05$. 

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Organizational change

Discussion

Stress is a common problem within the workforce, and is particularly prevalent for mental health workers who often experience a multitude of stressors (e.g., high workloads, demands, low resources; Reid, 1999) and show high levels of burnout as a result (Prosser et al., 1996). Organizational change has been a stressor faced by healthcare employees, including mental health workers (Edwards et al., 2000) and can lead to negative health outcomes (Cartwright & Panchal, 2001). However, these outcomes may be preventable with the provision of adequate supports, fair treatment and procedures, and control over one’s job. The purpose of this study was to examine the impact of organizational change on the health and well-being of mental health workers and the direct and buffering effects of justice, social support, and job control. In addition, a model of organizational stressors, resistance to change, and negative health outcomes was tested.

The results provide support for the first hypothesis. Change-related stressors were significantly related to symptoms of strain and burnout in mental health workers. Specifically, high levels of change-related stressors were associated with increased negative health complaints (e.g., headaches, difficulty concentrating), emotional exhaustion (e.g., feeling emotionally drained from work), cynicism (e.g., feeling cynical about one’s job), and decreased professional efficacy (e.g., feeling little value in one’s work). This finding is consistent with previous research that stressors are associated with negative health complaints and burnout (Coffey & Coleman, 2001). This study extends previous research by examining these relationships in the context of organizational change, and with a broader sample of mental health workers, not limited to nurses (e.g.
Gilbody et al., 2006, Edwards & Burnard, 2003). It is clear that the stressors related to the strategic changes within this health authority are associated with negative health outcomes for employees.

The results provide some support for the second hypothesis. Low levels of supervisor and organizational support were associated with increased symptoms of strain, emotional exhaustion, cynicism, and lower professional efficacy. Contrary to our hypothesis, co-worker support did not show any significant associations with negative health outcomes. This finding was surprising; however some studies have found that co-worker support is not related to negative health outcomes in the context of organizational change (e.g., Dekker & Schaufeli, 1995). Additionally, research indicates that co-workers’ support may have a limited impact during organizational changes (Begley, 1998). Co-worker support also showed a significant positive association with behavioural resistance to change. This result may be due to solidarity among co-workers. Specifically, co-workers may feel more unified due to the changes occurring, and thus be more likely to resist the change as a group. This finding may warrant future research.

High procedural justice was associated with decreased strain, emotional exhaustion, and cynicism. High interactional justice was associated with decreased strain, emotional exhaustion, cynicism, and increased professional efficacy. High job control was significantly associated with decreased strain, emotional exhaustion, cynicism, and increased professional efficacy. Therefore, organizational and supervisor support play an important role during changes in predicting negative health outcomes. Additionally, providing employees with justification and appropriate communication of changes is
directly related to lower levels of strain and burnout. Also, providing employees with control over their job is directly related to health outcomes.

The results show partial support for the third hypothesis. After controlling for change-related stressors, supervisor and organizational support were negatively related to strain, emotional exhaustion, cynicism, but not professional efficacy. Co-worker support was not significantly related to any of the health outcomes. There was a significant moderating effect of supervisor support on cynicism and emotional exhaustion. High levels of supervisor support alleviated the negative effects (i.e., emotional exhaustion and cynicism) of change-related stressors. Specifically, employees with high levels of supervisor support showed lower levels of emotional exhaustion overall. Additionally, when change-related stressors were high, employees reporting high levels of supervisor support showed lower levels of emotional exhaustions than employees with low levels of supervisor support. Also, employees who showed high levels of supervisor support showed decreased levels of cynicism, overall, when compared to employees with low levels of supervisor support. Employees with low levels of supervisor support showed markedly higher levels of cynicism when faced with high change-related stressors compared to those with high supervisor support. Thus, employees with low levels of supervisor support, coupled with high levels of change-related stressors, showed higher symptoms of emotional exhaustion and cynicism, compared to those with high levels of supervisor support. These findings indicate that support from supervisors plays an integral role in assisting employees attempting to cope with high levels of stressors resulting from changes.
Co-worker support and organizational support did not moderate any of the stressor-strain relationships. This finding is contrary to previous research (e.g., Stetz & Stetz, 2006). However, the changes in this organization occurred in over 15 units, and some of these units are fairly small with few workers. Therefore, it may be that employees value support from their supervisor more so than their co-workers, particularly if they have few co-workers in their unit. Research shows that during organizational changes, supervisor’s support has more impact than coworkers’ support, because it potentially provides more resources to deal with situational demands resulting from organizational changes (Terry et al., 1996). Future research should examine this concept, particularly as it applies to health-care workers.

Procedural and interactional justice accounted for incremental variance, above change-related stressors, in predicting emotional exhaustion and cynicism, but only interactional justice accounted for incremental variance in predicting strain symptoms. Neither forms of justice accounted for incremental variance in predicting professional efficacy, although procedural justice significantly moderated the relationship between change-related stressors and professional efficacy. Therefore, employees who felt the organization had fair procedures related to the changes (i.e., high levels of procedural justice) showed higher levels of professional efficacy when change-related stressors were high. However, employees who perceived the procedures to be unfair (i.e., low levels of procedural justice) showed lower professional efficacy when change-related stressors were high. Interactional justice did not moderate the any of the relationships between change-related stressors and negative health outcomes. Therefore, although providing employees with adequate information regarding changes predicts reduced negative health
effects, it did not buffer the relationship between stressors and strain. This finding may be due to the large number of units in this organization and their varying locations. That is, the perceptions of justice may be different in units that are more centrally located within the District Health Authority (i.e., in a large hospital setting in an urban area) compared to those units in more rural settings. Additionally, this study showed a high the correlation between the procedural and interactional justice scales (i.e., $r=.84$); thus, the scales may not be discriminating among the two forms of justice. Research indicates that the correlation between procedural and interaction justice is usually moderate to high (Colquitt et al., 2001). Although some research suggests these constructs are independent (e.g. Moorman, 1991), others examined interactional and procedural justice as a unidimensional construct (e.g. Monsour-Cole & Scott, 1998). However, recent research suggests that interactional justice should be conceptualized as two facets, informational and interpersonal (e.g., Colquitt et al., 2001). Therefore, distinguishing interactional justice as two components may be necessary for future research. Also, future research examining procedural and interactional justice as distinct, versus unidimensional, constructs is needed.

Job control accounted for significant incremental variance in predicting all negative health outcomes, (i.e., strain, emotional exhaustion, cynicism and professional efficacy). Job control moderated the relationship between change-related stressors and emotional exhaustion. High levels of job control mitigated the negative effects of change-related stressors on exhaustion in mental health workers. More specifically, employees who reported more control over their job, and day-to-day tasks, reported lower levels of emotional exhaustion overall, compared to employees with low control, regardless of the
level of change-related stressors. Employees who reported less control in their job showed markedly higher levels of emotional exhaustion when change-related stressors were high. These results support the view that job control moderates the relationship between stressors and strain (Beehr & Glazer, 2005), and builds on previous research by examining the moderation effect with change-related stressors. This finding is particularly relevant as emotional exhaustion is prevalent among mental health workers (Prosser et al., 1996). Therefore, providing employees with greater control over various aspects of their job (e.g., tasks, scheduling) is beneficial in reducing symptoms of emotional exhaustion, especially when employees are attempting to cope with stressors resulting from organizational changes. Job control did not moderate the relationship between change-related stressors and strain, cynicism, or professional efficacy. Therefore, control may only be an effective buffer for certain types of individual health outcomes.

Results of the present study indicate that the hypothesized model of organizational change, that describes the mediating relationship of resistance to change in predicting negative health outcomes, fit the data relatively well, and shows evidence of resistance to change as a partial mediator in the relationship between change-related stressors and negative health outcomes. Change-related stressors showed a significant positive association with resistance to change and with psychosocial health outcomes. Specifically, change-related stressors predicted increased cognitive, affective and behavioural resistance to change. Resistance to change, in turn, significantly predicted increased negative psychosocial outcomes (i.e., increased emotional exhaustion, cynicism and negative health symptoms). This model is the first of its kind to test the relationships
among change-related stressors and their capacity to predict resistance to change in mental health workers. This model has implications for organizations that are planning organizational change because efforts should be focused on reducing the stressors associated with change as well as the factors that may lead to resistance to change, especially since resistance to changes predict increased emotional exhaustion, cynicism, and negative health symptoms.

However, the three-dimensional nature of resistance to change is questionable. Results from the EFA analysis show that although the three-factor appears reasonable, a number of the items did not load on their respective factors or cross loaded on multiple factors. Moreover, there were high correlations among the resistance components (i.e., affective, cognitive, and behavioural resistance to change). These findings may indicate a unidimensional construct of resistance to change. Research should examine the factor structure of this construct in more detail.

Implications

These results provide important implications for organization undergoing organizational change, particularly in the health-care setting. These findings support the notion that supervisors play an important role in the well-being of workers (Swanson & Power, 2001), particularly during times of change (Leiter & Harvie, 1997). Poor supportive supervisors and management styles are an increasing cause of distress and absenteeism in the health-care setting (Kivimaki et al. 2000). This study shows that supportive supervision is associated with reduced negative health symptoms (i.e., emotional exhaustions and cynicism) during times of change. Therefore, organizations should encourage supervisors to adopt leadership styles that engage and support
employees (Huy, 2001), particularly during times of change. These findings may have implications for organizations wishing to design interventions aimed at improving supervisor support. Indeed, most supervisors in the health-care setting have little to no formal leadership training (Edwards & Burnard, 2000). Studies show that participative leadership has an impact in overcoming resistance to change in employees (Chawla & Kelloway, 2002). Therefore, intervention strategies aimed at training supervisors in effective leadership strategies may help mitigate the negative outcomes associated with organizational change. Future research should examine further the relationship of supervisory support in alleviating the negative outcomes resulting from job changes.

The findings also support previous research that procedural justice has an effect on employee on well-being (Elovainio et al., 2001), particularly in times of change (Schweiger & DeNisi, 1991). Few studies have examined the effects of procedural justice on mental health workers and no research to date has examined procedural justice in the context of organizational change with mental health workers. Therefore, this study is a starting point in highlighting the importance of process fairness in the changing health-care environment, particularly in increasing employee’s sense of accomplishment in their work (i.e., professional efficacy). Organizations should allow employees greater opportunity to express their views and give input on organizational changes, and the procedures the organization adopts to implement the changes. For example, scheduling meetings with employees to discuss organizational changes, or having personal conversations with employees individually regarding changes, have been shown to increase procedural justice (Gopinath & Becker, 2000). Organizations should attempt to implement these practices of process fairness, not only during the organizational change,
but in the planning stages before changes are implemented. These practices will benefit employees. Future research should examine effective methods of improving procedural justice, not only in the day-to-day lives of mental health workers, but also leading up to and during organizational changes.

Job control is an important factor in reducing negative health outcomes resulting from organizational changes. Job control is a common stressor among mental health professionals (Reid et al., 1999) and may be particularly evident during changes. Studies examining intervention strategies aimed at improving job control, among other psychosocial variables, have indicated that it is difficult to increase job control in the mental health-care setting because resources (e.g., funding) and caseloads are always changing, and interventions strategies show little to no change in job control (e.g., Bourbonnais et al., 2006). However, some forms of job control may be increased, regardless of the changing nature of the health-care setting. For example, offering employees more control in their scheduling and work hours (e.g., flex time) may be simple methods of increasing job control. Also, improving social support and involvement in justice aspects of the organization may help to improve an employee’s sense of control (Daly & Geyer, 1994). Future research in this area is warranted.

Limitations & Future Research

Although this study has given insight into the relationship between change-related stressors and psychosocial outcomes and the role of organizational characteristics in moderating this relationship, certain limitations must be addressed. The primary limitation of this study is the reliance on cross-sectional survey data. A single sample cross-sectional data cannot establish a definitive case for a specific model, particularly
Organizational change when the sample size was fairly robust. The case for a specific model develops over a series of studies with various perspectives on different organizations. The analysis reported here is, however, a first step in that exploration; particularly in its examination of mental health workers and the relatively new three component model of resistance to change. This model should be tested in other health settings.

This study only allowed a snapshot of the organization at one time during a multitude of organizational changes. Although, this study highlighted important organizational characteristics that help alleviate strain and burnout, it did not follow the organization during periods of the organizational changes. A longitudinal approach to examining changes in health-care setting and their effects on health-care workers is needed. This approach will not only give more detail in the stressors present during organizational change but will also allow for the testing and evaluation of intervention strategies aimed at improving employee well-being.

Because the changes in the organization were ongoing, and units were in different phases of implementation, it was difficult to identify what specific changes were occurring to specific individuals. However, studying the employees’ perceptions of the changes (i.e., change-related stressors), allowed for some accuracy in the assessing the degree of changes occurring for each individual. In addition to the traditional job stressors (i.e., overload, ambiguity, and conflict) that may be created or exacerbated due to organizational change, future research should examine employees’ perceptions of specific physical changes to their job role and work environment that are a direct result of the overall organizational change.
In addition, we were unable to distinguish among occupations (e.g., nurses, managers) because some of the units in the district health authority were quite small; thus identifying specific jobs or occupations would have jeopardized anonymity. It would be beneficial for future research to examine the differences in social support, perceptions of justice, job control, and attitudes towards the change (i.e., resistance) among various occupations (e.g., nurses, physicians, unit managers).

Conclusion

This study provides important insight into how organizational related changes can increase strain and burnout of employees as well as the organizational characteristics that may directly and indirectly alleviate negative health outcomes during organizational change in a health-care. This study also successfully tested a unique model of stressors, resistance, and psychosocial health outcomes. Results from this study may help health-care organizations better understand the characteristics within an organization that can help improve the well-being of their employees, and provide them with the opportunity to ensure these supports are in place during organizational changes.
References


(Accessed April 25, 2005).


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Canadian Psychology, 29, 284-297.


Keman, M.C. & Hanges, P.J. (2002). Survivor reactions to reorganization: Antecedents 
and consequences of procedural, interpersonal, and informational justice. Journal 
of Applied Psychology, 87, 916-928.


Kivimäki M, Vahtera J, Pentti J. (2000) Factors underlying the effect of organisational 
downsizing on health of employees: a longitudinal cohort study. British Medical 
Journal 320:971–985.


distress in Type A/B industrial workers. Journal of Organizational Behavior, 12, 
155-168.

Publishing Company Inc.

Schaufeli W.B, Maslach C., Marek T., eds. Professional Burnout: Recent 
237–50.


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PERCEPTIONS OF ORGANIZATIONAL CHANGES &

WORKPLACE CHARACTERISTICS

February, 2007

Dr. Arla Day
&
Sarah Crown

Your responses are very important to our study. We appreciate you taking time to complete this survey.

NOTE: If you prefer to complete an on-line version of this survey, please go to:
http://www.surveymonkey.com/s.asp?u=845013259965
Note: This section is required to describe the group as a whole. No individual information will be released to Capital Health or any other group or individual.

1. Gender: □ Male □ Female

2. Age: _________

3. Employment status: □ Full-time □ Part-time □ Casual □
   Other: ____________________

4. Current employment position:
   □ Clinical outpatient □ Clinical inpatient □ Research □
   Education
   □ Administrative outpatient □ Administrative inpatient □ Other: _______________

5. How long have you been employed with this organization?
   □ Less than 1 year □ 1-5 years □ 6-10 years □ 11-15 years □ 16-20 years □ 20+ years

The following questionnaire will ask you a number of questions regarding your perceptions of various characteristics within your workplace. Please feel free to use the Comments Page to elaborate on any questions you have completed or to provide additional details on your perceptions of your workplace.

Think about the organizational changes that have occurred in the past 18 months. Using the 5-point scale below, please indicate your level of agreement or disagreement with each statement by writing the corresponding number in the space provided.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Slightly disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

   ___  1. My job duties have changed.
   ___  2. My work setting has changed.
   ___  3. The organizational changes have created conflict in my department/division.
   ___  4. As a result of the organizational changes, I receive incompatible requests from two or more people.
   ___  5. As a result of the organizational changes I work on unnecessary things.
   ___  6. Organizational changes have made it more difficult for me to get my work completed.
   ___  7. Organizational changes have created increased work for me.
Despite the organizational changes, I am given enough time to do what is expected of me in my job.

Organizational changes have created ambiguity in my job responsibilities.

Organizational changes have created unclear explanations of what has to be done in my job.

As a result of organizational changes I do not know what is expected of me.

Think about the organizational changes that have occurred in the past 18 months. Using the 7-point scale below, please indicate your level of agreement with each statement by writing the corresponding number in the space provided. In the statements below, the "organization" refers to the Capital District Mental Health Program.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Slightly disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. I have no choice but to go along with these changes.
2. I feel pressure to go along with these changes.
3. I have too much at stake to resist these changes.
4. Resisting these changes is not a viable option for me.
5. I feel a sense of duty to work toward these changes.
6. I would feel guilty about opposing these changes.
7. I do not feel any obligation to support these changes.
8. I believe the changes will negatively affect the way things are done in the organization.
9. I believe the changes will negatively impact patient care.
10. I think that it's a negative thing to go through with these changes.
11. I believe that the changes will make my job harder.
12. I believe that the changes will benefit the organization.
13. I believe that I can personally benefit from the changes.
14. These changes are a good strategy for this organization.
15. These changes serve an important purpose.
16. I believe these changes are needed.
17. I feel stressed out by the changes.
18. I feel comfortable about the changes.
19. The changes within my organization make me feel nervous.
20. I feel overwhelmed by these changes.
21 I enjoy these changes.
22 I think the changes are exciting.
23 I am afraid of the changes.
24 I have a bad feeling about the changes.
25 The changes make me upset.
26 I complain about the changes to my colleagues.
27 I look for ways to prevent the changes from taking place.
28 I present my objections regarding the changes to management.
29 I speak rather highly of the changes to others.
30 I protest against the changes.

The following items refer to the procedures used to carry out the organizational changes that have occurred in the past 18 months. Using the scale below, please indicate your level of disagreement or agreement with each statement by writing the corresponding number in the space provided. The "organization" refers to Capital District Mental Health Program.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Slightly disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. I have been able to express my views and feelings during the organizational changes.
2. I have had influence over the changes that are occurring.
3. The procedures involved in the change are being applied consistently.
4. The procedures followed throughout the changes have been fair.
5. There are procedures allowing me to question the changes.
6. The procedures used during the changes have been based on accurate information.
7. The procedures used during the changes uphold to ethical and moral standards.
8. I have been treated in a polite manner by the organization during the changes.
9. I have been treated with dignity by the organization during the changes.
10 I have been treated with respect by the organization during the changes.
11 The organization has refrained from making improper remarks during the organizational changes.
12 The organization has been candid in communications with me related to the changes.
13 The organization explained the procedures related to the changes thoroughly.
14 The explanations from the organization about the procedures related to the changes have been reasonable.
15 The details of the changes have been communicated in a timely matter.
The organization seemed to tailor the communications related to the changes to individuals' specific needs.

Using the scale below, please indicate your level of disagreement or agreement with each statement regarding (A) your supervisor, (B) your co-workers, AND (C) your organization (i.e., Capital District Mental Health Program; CDMHP). Please write the corresponding number in the space provided.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Slightly disagree</th>
<th>Neither agree nor disagree</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Supervisor</th>
<th>Co-workers</th>
<th>CDMHP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My (Sup/CW/MHP) strongly considers my goals and values.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>2. My (Sup/CW/MHP) really cares about my well-being</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>3. My (Sup/CW/MHP) shows very little concern for me.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>4. My (Sup/CW/MHP) would forgive an honest mistake on my part.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>5. My (Sup/CW/MHP) cares about my opinion.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>6. If given the opportunity, my (Sup/CW/MHP) would take advantage of me.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>7. Help is available from my (Sup/CW/MHP) when I have a problem.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
<tr>
<td>8. My (Sup/CW/MHP) is willing to help me when I need a special favor.</td>
<td>___</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

Below are listed a number of questions about different aspects of your job. Using the following 5-point scale, please indicate the extent to which each is an accurate or an inaccurate description of your job. Please write the corresponding number in the space provided.

<table>
<thead>
<tr>
<th>No control at all</th>
<th>Very little</th>
<th>Little</th>
<th>A moderate amount</th>
<th>Much</th>
<th>Very Much</th>
<th>A great deal of control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. How much control do you have over the variety of methods you use in completing your work?
2. How much can you choose among a variety of tasks or projects to do?
3. How much control do you have personally over the quality of work?
4. How much can you generally predict the amount of work you will have to do on any given day?
5. How much control do you have personally over how much work you get done?
6. How much control do you have over how quickly or slowly you have to work?

7. How much are you able to predict what the results of decisions you make on the job will be?

8. How much control do you have over how you do your work?

9. How much can you control when and how much you interact with others at work?

10. How much influence do you have over the policies and procedures in your work unit?

11. How much control do you have over the sources of information you need to do your job?

12. How much are things that affect you at work predictable, even if you can’t directly control them?

13. How much can you control the number of times you are interrupted while you work?

14. How much control do you have over the amount you earn at your job?

15. How much control do you have over how your work is evaluated?

16. In general, how much overall control do you have over your work and work-related matters?

The following is a list of health complaints that people sometimes have. Using the scale below, please indicate how often you have experienced each of these complaints in the past month.

<table>
<thead>
<tr>
<th>Never</th>
<th>Almost never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Fairly often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. General aches or pains

2. Sweating hands, feeling wet & clammy

3. Nervousness or tenseness

4. Muscle twitching or trembling

5. Rapid heartbeat (while not exercising or working hard)

6. Feeling down or blue or depressed

7. Loss of interest in things, such as TV, news, & friends

8. Taking medication to sleep or calm down

9. Dizziness or faintness

10. Common cold or flu

11. Upset stomach

12. Headaches

13. Skin rashes or itching

14. Trouble sleeping

15. Lack of appetite

16. Feeling life is pointless
9. Overly tired/lack of energy
10. Shortness of breath (while not exercising or working hard)
19. Crying
20. Difficulty concentrating

In order to match for potential future studies, and in case you would like to withdraw your responses from this study at any time, please provide a unique code that consists of:

<table>
<thead>
<tr>
<th>1st 2 letters of your mother's maiden name</th>
<th>Your day of birth</th>
<th>Last 2 digits of your home phone #</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

E.g., If your mother's maiden name is Smith, you were born on the 15th, and your phone number is 555-1234

E.g., S M 1 5 3 4

This information is voluntary and can NOT be used to identify your responses.

Comments Page

Please feel free to provide any comments about the study or about the organizational changes within CDMHP.
Thank you very much for your participation in this study!
Appendix B
Saint Mary’s University Research Ethics Board approval
Research Ethics Board Certificate Notice

The Saint Mary's University Research Ethics Board has issued an REB certificate related to this thesis. The certificate number is: 06-137

A copy of the certificate is on file at:

Saint Mary's University, Archives
Patrick Power Library
Halifax, NS
B3H 3C3

Email: archives@smu.ca
Phone: 902-420-5508
Fax: 902-420-5561

For more information on the issuing of REB certificates, you can contact the Research Ethics Board at 902-420-5728/ ethics@smu.ca.
Appendix C
Capital Health Research Ethics Board approval