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**“I feel good”: The measurement and prediction of Positive Well-being**

**Adriana Ariff Hess**

**A Thesis Submitted to  
Saint Mary's University, Halifax, Nova Scotia  
in Partial Fulfillment of the Requirements for the Degree of Masters of Science in  
Applied Psychology**

**September, 2005, Halifax, Nova Scotia**

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## **Abstract**

**“I feel good”: The measurement and prediction of Positive Well-being**

**By Adriana Ariff Hess**

Building upon Luthans' (2002) call on the need for a more positive approach in organizational psychology, the purpose of this study was to develop a scale measuring positive well-being. In Study 1, positive, high-arousal, emotion-related items adapted from the Job-related Affective Well-being Scale (JAWS - Van Katwyk et al., 2000) were used to measure affective well-being of 217 undergraduate students. Results indicated that the Positive Affective Well-being Scale was a reliable, valid, and unidimensional measure. A second study was conducted to determine if transformational leadership is predictive of positive affective well-being after accounting for demographic and work stress variables. Hierarchical regression analyses were conducted using data from a sample of nurses taking part in a larger Health Climate survey. Results showed that transformational leadership did significantly predict positive affective well-being but not psychological well-being, when controlling for demographic and work stress variables.

October 3, 2005.

“I feel good”: The measurement and prediction of Positive Well-being

Employee well-being is increasingly recognized as playing an important role in a healthy, productive workplace. A growing literature relates health and well-being to improved job performance (Wright & Cropanzano, 2000), productivity (Lowe, 2003), job satisfaction (Wright & Cropanzano, 2000), and ability to cope with stress (Leiter, 1991; Stumpf, Brief, & Hartman, 1987). The pursuit of improved health could also assist organizations in reducing costs, especially in medical expenditures. It was estimated that employers in the United States spent approximately US\$150 billion annually in the treatment, lost productivity, and absenteeism of employees suffering from a decline in mental health (Karch, 2000). In addition to its relation to these outcomes, and the costs incurred on employers, the pursuit of improving health or well-being is in itself important to society. Despite the importance of the construct, the definition of well-being or health remains unclear.

The World Health Organization (1948) identifies a healthy individual as one who has complete physical, mental and social well-being. Under this definition, well-being is not solely defined through the absence of disease or infirmity. However, since World War II, the psychological focus of well-being has been on healing, ‘repairing’ or ‘fixing’ damaged human functioning (Lent, 2004; Seligman & Csikszentmihalyi, 2000). Most medical and psychological measures of health and well-being are based on an assessment of symptoms that the individual has or does not have. Thus, in contrast to the conceptual definition of health by WHO (1948), most empirical assessments of health today are largely based on the absence of negative symptoms.

Measures of well-being used in organizational research reflect this overall trend. Widely used measures such as the General Health Questionnaire (GHQ – Goldberg & Williams, 1991) or the Physical Health Questionnaire (PHQ – Schat, Kelloway, & Desmaitres, in press) assess the presence or absence of psychological or physical symptoms, respectively. These scales usually tend to measure the presence or absence of symptoms related to negative well-being without really measuring the presence of symptoms related to positive well-being. The purpose of the current research is to expand the measurement of health by (a) developing and assessing the psychometric properties of a measure of positive well-being and (b) examining the relationship between positive well-being and leadership.

#### *Affective well-being*

Research in the area of subjective well-being (i.e., an individual's perception or evaluation of his/her life) has shown that most people tend to report their lives positively (Diener & Diener, 1996). Despite this fact, psychology as a field focuses on more negative experiences. Luthans (2002) conducted a search of the psychological literature and found that 375,000 articles emphasized on negative well-being (e.g. mental illness, depression, anxiety, fear, and anger), whereas only 1000 articles emphasized positive concepts and capabilities of people. Seligman and Csikszentmihalyi (2000) argue that this disparity should not exist given that the field of psychology is not centred only on pathology, weakness and damage, but it is also focused on "identifying and nurturing [people's] strongest qualities, what they own and are best at, and helping them find niches in which they can best live out these strengths" (p.6).

Consistent with this positive focus, Warr (1987, 1990) hypothesized that mental health comprises five factors or components: (1) affective well-being, (2) competence, (3) autonomy, (4) aspiration, and (5) integrated functioning. Each separate component can be viewed as a measure of mental health. However, Warr suggested that affective well-being is the primary determinant of how well an individual feels and most measures of well-being focus on this dimension. Although affective well-being has been measured along a single continuum (whether one feels good or one feels bad), empirical findings by Russell (1979, 1980, 1983) show that affective well-being is structured along two dimensions, pleasure and arousal, a view that was also suggested by Warr (1987).

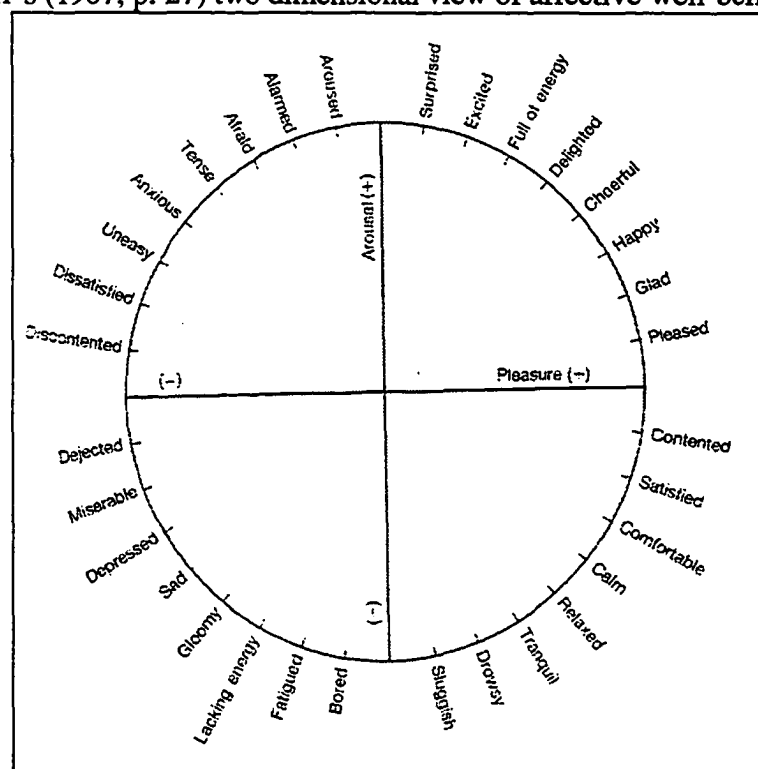
Russell (1979) defined affective well-being or affective space by two orthogonal dimensions: pleasure-displeasure and arousal-sleep. Building on this study, Russell (1980) mapped out a circumplex model of affect, in which 28 emotion-related adjectives were scaled using four different methods of scaling including factor analysis and multidimensional scaling. The results of the four methods were highly similar in that emotion-related words did not cluster at the axes but fell in a circular pattern around the parameter of affective space.

As shown in Figure 1, different forms of affective well-being can be described based on the location of the affective description in terms of the two separate dimensions. “Happy” and “cheerful” are considered to be similar as they are both in the high arousal and high pleasure domain; in contrast to “depressed” and “gloomy” which are low on both arousal and pleasure (Warr, 1990).

Although both Russell and Warr theorized a circumplex structure for affective well-being, the results from a study conducted by Van Katwyk, Fox, Spector, and

Kelloway (2000) suggest otherwise. Based on Figure 1, we can assume that the words that conveyed neutral affect are closer to the arousal dimension (e.g. alarmed, aroused, surprised, excited, drowsy, sluggish, bored, and fatigued). In their development of the Job-Related Affective Well-being Scale (JAWS), Van Katwyk et al. had individuals respond to numerous affective descriptors prefaced with “My job makes me feel”. The results of the study showed that the range of job-related affective well-being did span across the arousal dimension (between low to high arousal), but participants were clearly divided on the pleasure-displeasure dimension. Participants reported that they were either closer to pleasure, or closer to displeasure, and not in between; in other words, there were no “high arousal”, neutral pleasure words. Van Katwyk et al. (2000) suggested that the

Figure 1. Warr's (1987, p. 27) two dimensional view of affective well-being.



Note. From “*Work Unemployment and Mental Health*” by P. Warr (1987), Oxford, England: Oxford University Press. Copyright 2005 by the Oxford University Press. Reprinted with permission.

division between the pleasure-displeasure dimension represents positive and negative job-related affective well-being. They concluded that the results did not fit a circumplex structure as theorized by Warr (1987, 1990) and Russell (1979, 1980, 1983). However, Van Katwyk et al. found that their scale produced four interpretable quadrants; High Pleasure-High Arousal (e.g., excited, energetic, motivated); High Pleasure – Low Arousal (e.g., satisfied, content); Low Pleasure-High Arousal (e.g., anger, hatred) and Low Pleasure-Low Arousal (e.g., bored, discontented).

Van Katwyk et al. (2000) developed a pure measure of job-related affect to assess positive and negative emotional reactions; however, it was not developed as a global measure for positive affective well-being. Although JAWS shows promise as a reliable measure of job-related affect, the factor structure for the JAWS was never tested. Therefore, it is still unclear as to whether the scale would structurally differentiate between positive and negative affect.

### *Measure of Well-Being*

The main purpose for developing a measure of positive well-being is that, as noted earlier, traditional measures of health and well-being in organizational research have focused on the presence or absence of symptoms of negative well-being such as stress or depression. This action tends to lead to a focus on the antecedents of negative symptoms and determining ways to overcome these factors. For example, job stress is typically used in organizational research to measure well-being in the workplace (refer to Fox, Dwyer, & Ganster, 1993; Wilson, DeJoy, Vandenberg, Richardson, & McGrath, 2004). Although job stress is related to well-being, it focuses on negative rather than positive well-being. Again, such a substitution of constructs results in a negative

approach to the study of well-being, furthering the need for a measure of positive well-being.

There needs to be more focus on what motivates, or inspires, or simply put, makes employees happy to be at work. More researchers are recognizing the importance of changing the ideology of psychology from fixing people's problem to nurturing their strengths (Luthans, 2000; Seligman & Csikszentmihalyi, 2000). Focusing on positive well-being or positive measures of health may lead to the identification of factors that promote or contribute to improved well-being.

### Study 1

The purpose of the first study was to develop a positive measure of affective well-being as a step toward expanding the field of positive psychology. I developed the Positive Affective Well-being Scale by measuring affective well-being using only the positive, high arousal, emotion-related items from the JAWS (Van Katwyk et al., 2000) because these items were more reflective of positive affective well-being. This measure was used to assess and emphasize positive affect (e.g. motivated, cheerful, enthusiastic, joyful) rather than focusing on negative indicators of well-being. To assess the reliability and validity of the Positive Affective Well-being Scale, I examined its factor structure using a principal components analysis (PCA), and assessed internal consistency of the scale using Cronbach's alpha. The hypotheses regarding to the scale are as follows:

*Hypothesis 1A.* The Positive Affective Well-being Scale will be unidimensional.

*Hypothesis 1B.* The Positive Affective Well-being Scale will demonstrate adequate ( $\alpha > .7$ ) internal consistency.

I established the construct validity of the Positive Affective Well-being Scale by examining its correlations with other measures of well-being, such as the General Health Questionnaire-12 (GHQ-12 – Banks, Clegg, Jackson, Kemp, Stafford, & Wall, 1980) which is a well-known measure of psychological well-being; the Center for Epidemiological Scale – Depression (CES-D – Radloff, 1977) which is a well-known measure of depression; and the Positive and Negative Affective Schedule (PANAS – Watson, Clark, & Tellegen, 1988) scale which is a well-known measure of affectivity. If there is a moderate negative relationship ( $-0.20 < r < -0.30$ ; Cohen, 1988) between the Positive Affective Well-being Scale and the GHQ-12 and the CES-D, it shows that the new scale is consistent with other measures of well-being while not being redundant with either construct. A negative correlation suggests that the Positive Affective Well-being Scale is tapping into positive affect in contrast to the GHQ-12 and the CES-D that tend to measure the presence of negative symptoms. The second hypothesis is as follows:

*Hypothesis 2.* There will be a moderate negative correlation ( $-0.20 < r < -0.30$ ) between the Positive Affective Well-being Scale and the GHQ-12 and the CES-D.

Positive affect is defined as a state where a person feels enthusiastic, alert, and active (Watson et al; 1988). Positive affect is one of two mood dimensions (the other being negative affect), and a person can experience high or low positive affect depending on his or her reactions to the surrounding environment. Positive affect is also related to the trait dimension of positive emotional reactivity or positive affectivity. Positive affectivity (trait) is differentiated from positive affect (state) as positive affectivity tends to be stable over time and does not change based on a person's environment. A person who is high on positive affectivity is described as a person who has a predisposition towards positive



experiences. For example, a person who is high on positive affectivity is more likely to experience more positive affect, or moments of joy, enthusiasm, and energy. In contrast, a person who has a predisposition for negative affectivity, or negative experiences, is less likely to experience similar positive mood states.

To further ensure that the Positive Affective Well-being Scale is a measure of mood and not of trait, a second PCA included both the Positive Affective Well-being scale items and items taken from the Positive Affectivity scale of the PANAS. The analysis should show that the two subscales are different from one another in measuring positive affect. Positive Affectivity items are a measure of trait (Watson et al., 1988) as opposed to the Positive Affective Well-being Scale items that is designed as a measure of state affect (i.e. mood). Positive affect is reflected by the extent that an individual would feel enthusiastic, alert, or active (Watson et al., 1988). On the other hand, Positive Affectivity can be defined as a predisposition to positive emotional experience, which is reflective of healthy well-being (Watson, Clark, & Carey, 1988). The hypothesis is formulated as follows:

*Hypothesis 3.* A two factor structure will emerge from a PCA of items from the Positive Affective Well-being Scale and Positive Affectivity indicating that the new scale is a measure of state level positive affect in contrast to Positive Affectivity, which is a measure of positive emotional experience at trait level.

Current research suggests that positive affect and negative affect are not opposite mood states as their terms might suggest (e.g. Van Katwyk et al., 2000; Watson et al., 1988). Research conducted by Watson and his colleagues (Watson & Clark, 1984; Watson et al., 1988) found that positive and negative affect are related but distinct from

one another. Just as positive affect is related to positive affectivity, negative affect is also related to negative affectivity. Negative affect reflects the extent that a person experiences aversive mood states such as anger, disgust, contempt, guilt, or nervousness. Negative affectivity, on the other hand, is described as an individual's pervasive predisposition to experience negative affect or negative emotions that can impact on his/her cognition, self-concept and perception.

Tellegen (1985) suggested that low positive affect and high negative affectivity may be distinguishing features of depression and anxiety. This suggests that a person with high negative affectivity (trait) is more likely to experience low positive affect (state). In layman terms, a pessimistic person (high negative affectivity) is less likely to experience short bursts of joy and happiness (positive affect). Therefore, the hypothesis focusing on the correlation between the Positive Affective Well-being Scale and Negative Affectivity is as follows:

*Hypothesis 4.* There will be a negative correlation between Positive Affective Well-being Scale and Negative Affectivity, indicating that when there is high positive affective well-being, negative affectivity would be low, and vice versa.

## Method

### *Participants*

Participants in this study were 217 students recruited from the undergraduate psychology program at a small Canadian University. There were 77 males (35.5%) and 140 female participants (64.5%). The participants' age ranged from 19 to 52 years with the average age being 22.6 years old ( $SD = 3.59$ ). Ninety-four percent of the participants

were in their first year of university. One bonus point toward their course credit was offered to the participants for taking part in this study.

### *Measures*

*Positive Affective Well-being Scale.* This scale is a 7-item measure (Appendix A) based on a subscale of Van Katwyk and colleagues (2000) JAWS scale. In particular, the items defining the High Pleasure- High Arousal subscale of the JAWS were taken as the initial item set of the new measure as these items reflect positive affect. The item preface was changed from “My job makes me feel” to “In the last six months, I have been feeling” to allow for an assessment of general (rather than job-related) well-being. Response alternatives for Positive Affective Well-being Scale were rated on a 7-point Likert scale, and responses ranged from 1 (*not at all*) to 7 (*all of the time*).

*General Health Questionnaire-12 (GHQ-12).* Banks et al.’s (1980) GHQ-12 is a 12-item self-report measure of psychological strain (Appendix B). The 12-item scale is widely used for large scale surveys due to its conciseness and the availability of normative data. Items are rated on a 7-point Likert scale, ranging from 1 (*not at all*) to 7 (*all of the time*). There are four items on the GHQ-12 that are reverse scored. Higher scores on the GHQ-12 indicate a lower degree of psychological well-being. The scale’s alpha level is reported to be between .90 and .91 (Kalliath, O’Driscoll, & Brough, 2004).

*Center for Epidemiological Scale – Depression (CES-D).* The CES-D is a 20-item questionnaire that requires respondents to describe depressive symptomatology (Radloff, 1977) that they have felt within the past six months (Appendix C). The responses range from 0 (*Rarely or none of the time*) to 4 (*Most or all of the time*). There are four items on

the CES-D that were reverse scored. The scale's internal consistency range between .86 and .87 in general population samples (Bush, Novack, Schneider & Madan, 2004).

*Positive and Negative Affectivity Schedule (PANAS).* Watson et al.'s (1988) 20-item PANAS scale is a measure of affectivity (Appendix D) where participants are asked to rate to how they generally feel. The scale comprises two factors, Positive Affectivity (10 items) and Negative Affectivity (10 items). The Positive Affectivity scale is related to extraversion, and the Negative Affectivity scale is related to neuroticism (Anthony, Lonigan, Hooe, & Phillips, 2002). The alpha reliabilities of PANAS are .88 for the Positive Affectivity scale and .87 for the Negative Affectivity scale (Watson et al., 1988). Items are rated on a five point scale on the extent that respondents experienced each emotion in general. Responses options are *1-not at all, 2-rarely, 3-once in a while, 4-some of the time, 5-fairly often, 6- often, and 7-all of the time.*

#### *Data analyses procedures*

A principal components analysis (PCA) with varimax rotation was conducted to examine the factor structure of the Positive Affective Well-being Scale. To determine the construct validity of the Positive Affective Well-being Scale, the scale was correlated with the GHQ-12 and the CES-D. A moderate correlation ( $-0.20 < r < -0.30$ ) between the new measure and the GHQ-12 and the CES-D would show that the scale is consistent but not redundant with other measures of well-being. The discriminant validity of the Positive Affective Well-being Scale will be assessed by conducting a second PCA hypothesizing two factors representing the Positive Affective Well-being Scale and Positive Affectivity items from PANAS respectively. A Pearson correlation was

conducted between the Positive Affective Well-being Scale and the Negative Affectivity scale from PANAS to determine the relationship between the two scales.

## Results

### *Data cleaning*

Prior to analysis, the Positive Affective Well-being Scale, GHQ-12, CES-D and PANAS items were thoroughly examined to check for accuracy of data entry, missing values, outliers, and assumptions for factor analysis. Missing values were treated through listwise deletion of the case. No items from any of the scales were deleted as missing values did not exceed five percent (Tabachnick & Fidell, 2001).

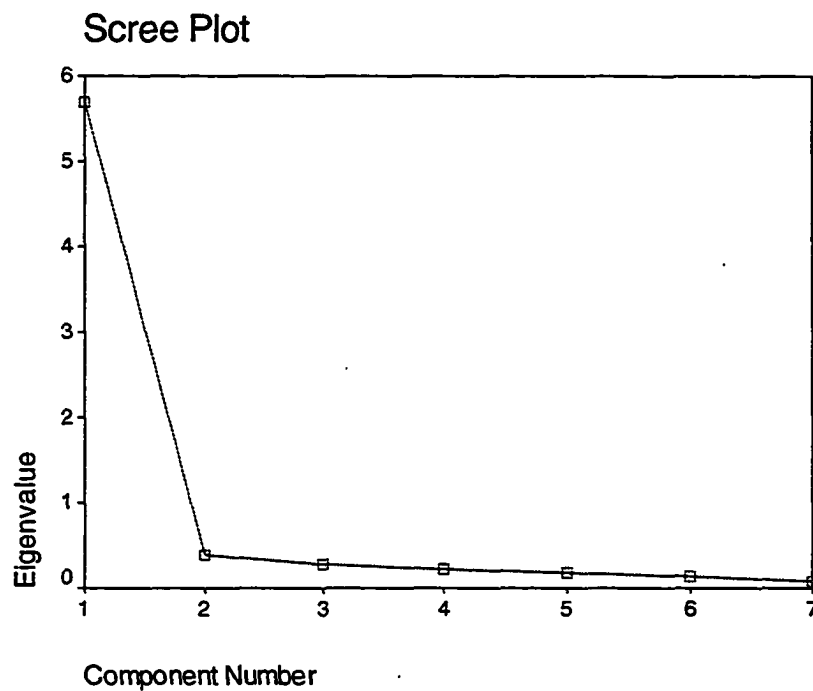
Skewness of items led to the transformation of three variables (CESD item: *my life had been a failure*; GHQ-12 item: *Have you felt capable about making decisions about things?*; PANAS item: *ashamed*) to reduce the skew. An inverse transformation was used on all three variables. One item, *my life had been a failure* was severely negative skewed even after inverse transformation. A visual comparison between original scores and transformed scores revealed minor differences, thus untransformed scores were used for analysis. A visual screening of Cook's distance for scores over 1.0 revealed no outliers among the cases (Tabachnick & Fidell, 2001).

### *Hypothesis 1A*

Hypothesis 1 stated that the Positive Affective Well-being Scale is unidimensional, thus I predicted a one factor structure would emerge through PCA. Principal components extraction was performed on seven items from the scale using a sample of 216 undergraduate students to estimate the number of factors and factorability of the correlation matrices. Using eigenvalues greater than one as the criterion (Crocker

& Algina, 1986; Tabachnick & Fidell, 2001) resulted in a one factor solution that accounted for 81.25% of the variance. An examination of the scree plot (refer to Figure 2) support the one factor solution. The PCA confirms that the Positive Affective Well-being Scale is a one factor structure suggesting that the factor is positive affective well-being. Table 1 lists the means, standard deviations, and factor loadings for all the items of the new scale.

Figure 2. Scree plot of factor loadings for the Positive Affective Well-being Scale items.



### *Hypothesis 1B*

The reliability analysis of the seven Positive Affective Well-being Scale items yielded a Cronbach's alpha of .96. The inter-item correlations were moderately high with a mean of .78, indicating that the items were positively correlated with one another. Based on the reliability analysis of item deletion, the removal of individual items showed

that there were minimal changes to internal consistencies. Thus, no items were deleted from the scale as it would not significantly improve the scale's reliability.

*Table 1.* Means, standard deviations, and factor loadings for the Positive Affective Well-being Scale items.

PAWS items	<i>M</i>	<i>SD</i>	Factor Loading
Motivated	4.40	1.62	.84
Cheerful	4.56	1.52	.91
Enthusiastic	4.40	1.57	.93
Lively	4.45	1.54	.92
Joyful	4.50	1.52	.92
In good spirits	4.66	1.48	.91
Energetic	4.37	1.55	.88

*Note.* Listwise  $N = 216$ ; PAWS – Positive Affective Well-being Scale.

### *Hypothesis 2*

To examine the construct validity of the Positive Affective Well-being Scale, I examined its correlation with two other measures of well-being, the GHQ-12 and the CES-D. The correlation coefficients of the new measure with the GHQ-12 and the CES-D as well as the means, standard deviations, and Cronbach's alpha for each scale are represented in Table 2. The results showed that the new measure is highly correlated with the GHQ-12 ( $r = -.65, p < .001$ ) and the CES-D ( $r = -.65, p < .001$ ). This suggests that the Positive Affective Well-being Scale was tapping into a similar yet different construct from the GHQ-12 and the CES-D. Based on the items of the Positive Affective Well-being Scale, I believe that the new scale is measuring positive affect, in contrast to the GHQ-12 and the CES-D, which are known measures of psychological strain and depressive symptomatology respectively.

### Hypothesis 3

To ensure that the Positive Affective Well-being Scale is a measure of positive mood, a PCA was conducted with the new scale items and the Positive Affectivity items to see if a two factor solution would emerge. A rotated principal components extraction was conducted on a combination of items from the new scale and Positive Affectivity items using data from 213 participants. The eigenvalues greater than one criterion (Crocker & Algina, 1986; Tabachnick & Fidell, 2001), showed that a two factor solution was appropriate. An examination of the scree plot (Figure 3) further confirmed the two factor solution. The two factors that were extracted reflected the Positive Affective Well-being Scale and Positive Affectivity scale. The PCA separated the items from the Positive Affective Well-being Scale and the items from the Positive Affectivity scale, suggesting

*Table 2.* Intercorrelations and reliability indexes for Positive Affective Well-being Scale, GHQ-12, CES-D, Positive Affectivity, and Negative Affectivity.

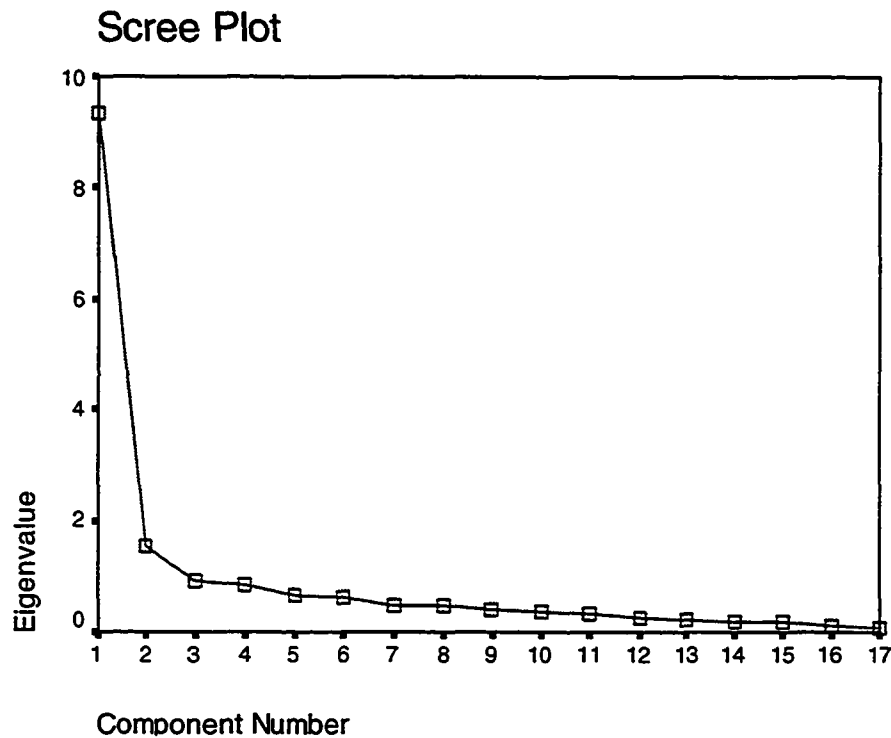
	Scale	<i>M</i>	<i>SD</i>	1	2	3	4	5
1	PAWS	4.52	1.36	(.96)	-.75*	-.65*	.74*	-.51*
2	GHQ-12	1.86	.53		(.72)	.83*	-.62*	.74*
3	CES-D	3.10	.99			(.91)	-.55*	.72*
4	PA	3.45	.67				(.89)	-.34*
5	NA	2.18	.73					(.88)

*Note.* Numbers in parentheses represent internal consistency: Listwise  $N = 206$ ; PAWS – the Positive Affective Well-being Scale; GHQ-12 – General Health Questionnaire-12; CES-D – Centre for Epidemiological Studies – CES-D; PA – Positive Affectivity scale; NA – Negative Affectivity scale.

\*  $p < 0.01$  (2-tailed)



*Figure 3. Scree plot of factor loadings for the Positive Affective Well-being Scale and the Positive Affectivity scale items.*



that the two scales might be measuring two different constructs. Table 3 contains the items for the Positive Affective Well-being Scale and Positive Affectivity, and their corresponding factor loadings. The correlation between the Positive Affective Well-being Scale and Positive Affectivity was also examined to assess the convergent validity of the new scale in relation to Positive Affectivity. There is a high positive relationship between the two measures,  $r = .73$ ,  $p < .001$ , indicating that the Positive Affective Well-being Scale and Positive Affectivity scale may not be differentiating as much as I originally hypothesized.

A third PCA was conducted to reanalyze the items from the Positive Affective Well-being Scale and the Positive Affectivity scale. An oblique rotation was used

*Table 3. Rotated factor loadings for Positive Affective Well-being Scale and Positive Affect items using varimax rotation.*

Items	PAWS	PA
Motivated	<b>.71</b>	.41
Cheerful	<b>.87</b>	.28
Enthusiastic	<b>.83</b>	.39
Lively	<b>.87</b>	.31
Joyful	<b>.87</b>	.32
In good spirits	<b>.86</b>	.29
Energetic	<b>.82</b>	.33
Interested	.21	<b>.65</b>
Excited	.40	<b>.54</b>
Strong	.40	<b>.55</b>
Enthusiastic	.50	<b>.59</b>
Proud	.38	<b>.63</b>
Alert	.28	<b>.61</b>
Inspired	.26	<b>.67</b>
Determined	.25	<b>.78</b>
Attentive	.15	<b>.74</b>
Active	.30	<b>.60</b>

*Note.* Listwise  $N = 213$ ;

**Bold** typeface indicates the rotated factor loadings;

PAWS – Positive Affective Well-being Scale; PA – Positive Affectivity scale.

( $\delta=.4$ ), as the two scales were highly correlated with one another. The eigenvalues greater than one criterion (Crocker & Algina, 1986; Tabachnick & Fidell, 2001) still indicated that a two factor solution was appropriate, and accounted for 63.81% of the variance. The factors extracted using the oblique rotation still replicated the factor extraction of the previous PCA, where items from the Positive Affective Well-being Scale loaded onto the first factor, and items from the Positive Affectivity scale loaded onto the second factor. Table 4 presents the rotated factor loadings of the two scales. Four items from the Positive Affective Well-being Scale had factors loadings greater than one, which is uncommon, but occurs when items have high factor loadings ( $>.90$ ) before the oblique rotation (D. Gilin, personal communication, September 28, 2005).

*Table 4.* Rotated factor loadings for Positive Affective Well-being Scale and Positive Affect items using oblique rotation.

Items	PAWS	PA
Motivated	<b>.75</b>	.09
Cheerful	<b>1.07</b>	-.21
Enthusiastic	<b>.94</b>	-.02
Lively	<b>1.05</b>	-.17
Joyful	<b>1.04</b>	-.16
In good spirits	<b>1.05</b>	-.18
Energetic	<b>.96</b>	-.10
Interested	-.14	<b>.79</b>
Excited	.20	<b>.51</b>
Strong	.20	<b>.51</b>
Enthusiastic	.31	<b>.50</b>
Proud	.11	<b>.65</b>
Alert	-.01	<b>.68</b>
Inspired	-.10	<b>.79</b>
Determined	-.19	<b>.96</b>
Attentive	-.31	<b>.97</b>
Active	.01	<b>.67</b>

*Note.* Listwise  $N = 213$ ;

**Bold** typeface indicates the rotated factor loadings;

PAWS – Positive Affective Well-being Scale; PA – Positive Affectivity scale.

Inter-item correlations of the Positive Affective Well-being Scale were examined to determine if it may have contributed to the high factor loadings of the items. Table 5 presents the means, standard deviations and intercorrelations of the items. The correlations indicated that some items, namely cheerful and joyful, were highly correlated with other items ( $r > .80$ ). The highest correlation was between joyful and lively ( $r = .88$ ), indicating that they might be measuring the same construct. Results of the inter-item correlation suggest that a few items on the Positive Affective Well-being Scale could be redundant. The potential redundancy of the items might also explain the high factor loadings of the items on the Positive Affective Well-being Scale.

*Table 5. Inter-item correlations for Positive Affective Well-being Scale.*

PAWS items	motivated	cheerful	enthusiastic	lively	joyful	in good spirits	energetic
motivated	(4.40)	0.71*	0.78*	0.68*	0.69*	0.72*	0.71*
cheerful		(4.56)	0.83*	0.81*	0.84*	0.82*	0.73*
enthusiastic			(4.40)	0.85*	0.80*	0.79*	0.80*
lively				(4.45)	0.88*	0.79*	0.80*
joyful					(4.50)	0.84*	0.76*
in good spirits						(4.66)	0.77*
energetic							(4.37)

*Note.* Numbers in parentheses represent means of the items; Listwise  $N = 216$ ; PAWS – Positive Affective Well-being Scale;

\*  $p < .01$  (2-tailed)

#### *Hypothesis 4*

Examination of the correlation between the Positive Affective Well-being Scale and the Negative Affectivity scale indicated a moderately high negative relationship, partially supporting the hypothesis,  $r = -.52, p < .001$ . Table 2 is a summary of the intercorrelations and reliability indexes for all the scales.

#### Discussion

The main purpose of this study was to develop a measure of positive affective well-being that is reliable, valid, and not redundant with current measures of mental health. Past research on affect has determined that affect comprises two factors, positive affect and negative affect (e.g. Watson, Clark, & Carey, 1988; Clark, Watson, & Tellegen, 1988; Van Katwyk et al., 2000). As a step toward expanding the measurement of positive well-being, the Positive Affective Well-being Scale was developed using positive emotion-related items from the JAWS (Van Katwyk et al., 2000). The findings of the first study show that the Positive Affective Well-being Scale is a reliable and valid unidimensional factor measure of positive mental health. The PCA revealed that a one factor structure was the most suitable for the measure and the reliability analysis also showed that the measure has a high internal consistency ( $\alpha = .96$ ). Because the items in both scales are positive emotion-related items, it is assumed that the Positive Affective Well-being Scale is measuring positive well-being.

Hypothesis two postulated that there would be a moderate negative correlation between the new measure and the GHQ-12 and the CES-D. The correlation was conducted to ensure that the measure was not redundant with other measures of well-being. However, there was a high negative correlation between the Positive Affective

Well-being Scale and the CES-D and the GHQ-12, implying that the new measure is measuring something that is similar yet different from the two well-known measures. The directionality of the correlation was also important, as the GHQ-12 and the CES-D are known measures of negative symptoms of well-being. The negative correlations detected in this study support the notion that the Positive Affective Well-being Scale measures positive symptoms of health. Seligman and Csikszentmihalyi (2000) have bemoaned that psychologists today have turned psychology into “victimology” (p. 6); therefore, a scale measuring positive symptomology seems to be a step toward changing this viewpoint.

Watson et al. (1988) developed the PANAS scales to measure the two factors of affect, Positive Affectivity and Negative Affectivity. One of the criticisms of that measure is that the scales measure traits, rather than measuring the current state of the individual at the time (Van Katwijk et al., 2000). This is attributed to the fact that the scales are dependent on the timeline that is used to measure the emotions (“how often do you feel this way in one week” as opposed to “how often do you feel this way in general”). The PANAS asks respondents how they feel each emotion in general. The Positive Affective Well-being Scale on the other hand, measures positive affect, and this measure is affected by changes in mood (as the respondent has to recall his/her positive symptoms over a period of time, e.g. six months). However, a mood or emotion that is experienced over six months may be considered more trait affect than state affect (i.e. tapping into a person’s predisposition rather than current feelings). This may contribute to the high correlation between the Positive Affective Well-being Scale and the Positive Affectivity scale. Shortening the timeline on the Positive Affective Well-being Scale may reduce the correlation between the two scales.

However, the first PCA conducted on the items for the Positive Affective Well-being Scale and the Positive Affect scale from PANAS emerged as a two factor structure, cleanly separating the two scales. Another PCA with oblique rotation for correlated factors was conducted to determine if the two scales would again emerge on separate factors, and the extraction resulted in two separate factors cleanly separating the Positive Affective Well-being Scale and the Positive Affectivity scale. This gives further evidence to the fact that the two scales are measuring affect differently, the Positive Affective Well-being Scale is measuring state, while the Positive Affectivity scale is measuring trait.

Correlations between the items of the Positive Affective Well-being Scale indicate that some of the items might be redundant. On the other hand, future research could explore the potential for reducing the items on the scale. The reliability analysis indicated that the deletion of items would not greatly reduce the internal consistency (from  $\alpha = .96$  to  $\alpha = .95$ ). Deletion of redundant items on the Positive Affective Well-being Scale will make it more effective and time efficient without compromising the reliability of the scale.

The last hypothesis of Study 1 focused on defining positive experiences as different from that of negative or distressing emotions. The directionality (negative correlation) and magnitude between the Positive Affective Well-being Scale and the Negative Affectivity scale indicates that although a person is having positive emotions (such as being cheerful), he or she may still display negative affectivity (such as neuroticism). However, a person who has a higher predisposition toward negative affectivity is ultimately less likely to experience positive moods such as being

enthusiastic, motivated or cheerfulness. It also implies that a person who has negative affectivity traits can still have feelings of enthusiasm, joy, and motivation. Admittedly, the correlation between the Positive Affective Well-being Scale and the Negative Affectivity scale was higher than expected, and this could be attributed to the time period that was used in the new scale. Watson et al. (1988) compared ratings of PANAS using different timelines (e.g. “*right now*”, “*today*”, “*past few days*”, “*past week*”, “*past few weeks*”, and “*past year*”) and found that the mean scores for the subscales of PANAS increased as the time frame lengthened. This implies the possibility that the responses to the Positive Affective Well-being Scale may have been affected by the time frame (i.e. six months may have been too long to consider it as a state affect).

### *Limitations*

The first study suggests that the Positive Affective Well-being Scale has promise as a measure of positive well-being. It also reflects a progression toward increasing research in positive psychology. However, this study is not without its limitations. One of the most obvious limitations to this study is the sample that was used. Although a university sample is typically used in scale development, its generalizability to the rest of the population is at times questionable. Further validation on a different sample would be required to ensure that the psychometric properties of the scale are sound.

Second, there was an item from the Positive Affectivity scale that was also in the Positive Affective Well-being Scale: *enthusiastic*. In the Positive Affectivity scale, participants were asked to indicate to what extent they generally felt enthusiastic. In the new scale, participants were asked to indicate the number that best described how often they felt enthusiastic in the past six months. Although not necessarily a limitation to the



study, it was an item that was an overlap between the two scales. Interestingly, the item did not overlap in the factor analysis. This could be attributed to the different instructions for each scale. The Positive Affective Well-being Scale asked participants to indicate how they felt in the past six months; the Positive Affectivity scale asked participants to indicate the extent that they generally felt enthusiastic. Nonetheless, the two factors extracted from the PCA imply that the Positive Affective Well-being Scale and the Positive Affectivity scale are different from one another.

On the other hand, the Positive Affective Well-being Scale and Positive Affect were highly correlated ( $r = .73$ ). Again, this could be attributed to the timeline instructions on the Positive Affective Well-being Scale. It can be argued that a six month time period would be tapping into more trait affect rather than state affect. Perhaps a shorter timeline (e.g. "*in the past week*") may result in a lower correlation between the Positive Affective Well-being Scale and the Positive Affectivity scale. This is important as the instructions of the survey could have an impact on the results (Schwarz, 1999). Past research has shown that minor changes to survey questions or format can have a major influence how participants respond to the survey (refer to Schwarz, Knäuper, Hippler, Noelle-Neumann, & Clark, 1991; Schwarz, Strack, & Mai, 1991). It would be ideal to be able to determine the differences in participant responses if they were asked to measure how often they felt or behaved in a certain way within the past week, month, six months, or in general. Using different timeline instructions for the Positive Affective Well-being Scale should be explored in future research to determine if this could potentially differentiate the Positive Affective Well-being Scale and the Positive Affectivity scale as a measure of mood states and a measure of trait respectively.

There was also a discrepancy between the CES-D instructions and the response anchors. The response anchors were not changed to accommodate for a six month timeline. Participants were asked to rate how they felt in the last six months, but the responses anchors ranged between less than a day to five or seven days. Participants may have been confused by the discrepancy, resulting in unusually high scores on the depression scale.

The Positive Affective Well-being Scale has shown promise as a measure of positive well-being, with very strong psychometric properties. Moreover, the scale is very short, and can be used to complement other psychological and physical measures to determine overall well-being. This measure could also be used in an organizational setting to measure employee well-being, and perhaps determine potential predictors of well-being.

## Study 2

### *Employee well-being and its antecedents*

The first study indicates there is potential in furthering the research in positive well-being. Within the realm of organizational psychology, the pursuit of employee well-being is necessitated by organizational need for continuous improvement in performance and productivity (Boyd, 1997; Danna & Griffin, 1999; Price & Hooijberg, 1992; Wright & Cropanzano, 1998). Because individuals typically spend about 40 hours a week at work, workplace psychosocial factors such as social support, job control, and role conflict can impact individual well-being in terms of stress, hypertension, burnout, depression, hypertension, absenteeism, and other physical ailments (Boman, 1988; Burke, Shearer, & Deszca, 1984; Dormann & Zapf, 1999; Ganster, Schaubroeck, Sime, & Mayes,

1990; Smith, Kaminstein, & Makadok, 1995). Recently, researchers have focused on the impact of leaders on employee well-being (Gilbreath & Benson, 2004; Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002; Kelloway, Sivanathan, Francis, & Barling, 2005; Tepper, 2000)

Gilbreath and Benson (2004) proposed that many employees perceive that supervisory behaviour significantly impacts their mental and physical health. They drew upon past studies that have linked supervisory behaviour with job tension, job satisfaction, burnout, stress, and psychological distress (see Duxbury, Armstrong, Drew, & Henley, 1984; Gavin & Kelly, 1978; Stout, 1984; Tepper, 2000). Gilbreath and Benson were also interested in determining the extent that supervisor behaviour could impact on employee well-being. Employee well-being was measured using the 28-item version of the GHQ. Supervisory behaviour was measured using a 63-item measure that comprised a variety of supervisory behaviours, including those that relate to job control, leadership, communication, consideration, social support, group maintenance, organizing, and looking out for employee well-being. This measure was developed by combining literature reviews with personal experiences of the principal researchers. Gilbreath and Benson compiled over 200 items, and scaled down the measure by correlating the items with job-related stress that was developed by Motowildo, Packard, and Manning (1986). Items that correlated with job stress ( $r > \pm .30$ ) were used in the supervisory behaviour measure. Internal consistency estimates for the supervisory behaviour measure was not reported.

By measuring supervisory behaviour, social support, stressful life and work events, health practices, and psychological well-being, Gilbreath and Benson (2004)

found that supervisory behaviour made a significant contribution to employee well-being beyond other influential variables (e.g. age, gender, social support, stressful life events, stressful work events, and health practices). Based on their study, they found that if employees rated supervisors' behaviours favourably (above average), the probability was 63% that their psychological well-being score would be above average.

Like most research into employee well-being, the measurement of employee health in Gilbreath and Benson's (2004) study is centred on the absence of negative symptoms. The GHQ was used to measure somatic symptoms, anxiety, sleep disturbances, social dysfunction, and depression. Another limitation to Gilbreath and Benson's study was the lack of psychometric properties of their supervisory measure. However, this study provided an understanding to the extent that supervisory behaviours influences employees' psychological well-being.

#### *The importance of leadership*

Leaders play an important role in almost every aspect of life, as leaders are defined as individuals who shape the realities of others (Conger & Kanungo, 1998; Smircich & Morgan, 1982; Yukl, 1999). Leadership studies have shown that leaders can influence followers' perceptions of their environment (Smircich & Morgan, 1982; Yukl, 1999). Leaders also lead others toward the leaders' vision (Conger & Kanungo, 1998), and increase followers' commitment (Barling, Weber, & Kelloway, 1996; Yukl, 1999). Commitment toward leaders' vision is related to increased group cohesion and overall satisfaction (House & Podsakoff, 1994). As past research has shown that leaders are influential enough to change followers' perception of their environment, it is not surprising that leaders would have influence over followers' well-being.

*Transformational leadership.* With the development of leadership research, researchers are constantly trying to determine the successful leadership characteristics that lead others (and organizations) toward improved performance and productivity. Current leadership studies have focused on the concept of transformational leadership. Judge and Bono (2000) report that in the last 20 years, there has been an increased research interest on transformational leadership. This is attributed to the fact that transformational leadership is effective in both public and private organizations, regardless of the leadership level (Lowe, Kroeck, & Sivasubramaniam, 1996). According to Bass (1990), charismatic leaders lead by personally getting involved in their own work as well as their subordinates' work. These leaders also have the ability to guide and motivate their followers toward the same goals. Transformational leadership is thought to have the same characteristics of articulating vision and inspiring commitment of followers toward leaders' aspirations.

Transformational leadership is characterized by four qualities: (1) the leaders' ability to stimulate employees' ability to solve problems and come up with rational solutions (intellectual stimulation), (2) the ability to inspire employees to accomplish great things (inspirational motivation), (3) the ability to instill pride and gain the respect and trust of their subordinates (idealized influence), and; (4) the ability to give personal attention to each employee or subordinate (individualized consideration). The first two characteristics are representative of the notion of "charisma" in charismatic leadership (Avolio, Bass, & Jung, 1999; Conger & Kanungo, 1998). Despite its four distinct characteristics, there are debates regarding the number of factors in leadership models (Avolio et al., 1999). For research purposes, studies measuring transformational

leadership tend to collapse the four characteristics into a one factor scale (Carless, 1998; Carless, Wearing, & Mann, 2000).

Transformational leadership has been positively associated with subordinates' supervisory satisfaction (Hater & Bass, 1988), subordinate organizational commitment (Bycio, Hackett, & Allen, 1995), increased financial outcomes (Barling et al., 1996), and increased subordinate growth, independence and empowerment (Dvir, Eden, Avolio, & Shamir, 2002; Kark, Shamir, & Chen, 2003). Moreover, some studies (see Barling et al., 1996) have shown that leaders can be trained to display transformational leadership qualities to help improve employees' work performance.

Turner, Kelloway, Barling, Sivanathan and Loughlin (2005) propose that the four components of transformational leadership imply concern for employee well-being. Leaders provide *intellectual stimulation* by encouraging employees to protect their own welfare by questioning assumptions and formulate their own opinions about the conditions in the workplace, so that employees will be empowered to improve their own well-being. Leaders impart *inspirational motivation* to employees by helping them to overcome mental and physical obstacles. Leaders displaying *idealized influence* communicate the need to improve employee well-being rather than financial gains. Leaders provide *individualized consideration* by attuning to employees' need for empathy, compassion, and guidance, all of which are precursors to improving employee well-being.

Turner and colleagues (2005) used cross-lagged regression analyses to determine the order of the transformational leadership – well-being relationship. They found that transformational leadership predicted well-being, but not vice versa, indicating a one-way

relationship between the two variables. This study emphasized that effective leadership may also potentially carry positive effects on employee mental health. However, the measures of well-being used in this study measured the absence of symptoms rather than the existence of positive well-being. Therefore, this study shows that transformational leadership predicts the nonexistence of negative symptoms, but does not necessarily predict the presence of positive feelings.

### *The Current Study*

The purpose of the current study is to determine if transformational leadership would predict positive affective well-being. I believe that transformational leadership could be a significant predictor because leaders displaying transformational qualities motivate, inspire, stimulate and challenge their subordinates at their jobs. Evidence from recent transformational leadership studies also indicates that displaying these transformational qualities (e.g. inspiring, motivating, stimulating, and challenging) to subordinates can lead to an increase in their positive affect.

Past research has shown that work stress is one of the major contributors to well-being (e.g. Carayon & Zijlstra, 1999; Fox, Dwyer, & Ganster, 1991; McKnight & Glass, 1995; Noblet, Rodwell, & McWilliams, 2001). However, stress in the workplace is influenced by numerous factors, such as work-family conflict, the amount of control a person has over his/her job, the clarity of their role at work, or the variety of work that they complete in a working day, to name a few. Researchers at the National Institute of Occupational Safety and Health (NIOSH) compiled seven major categories of work stress that are based on occupational stress research: 1) work load and pace, 2) work schedules, 3) role stressors, 4) job content, 5) social relations, 6) career/job security, and 7) lack of

control (Sauter, Murphy, & Hurrell, 1990). These stressors are known to influence employees' well-being, especially if left untreated in the long-run.

*Hypothesis 1:* Transformational leadership will positively predict participants' psychological well-being, controlling for demographics and work-stressors variables, such as work load, routinization, control, recognition, interpersonal relations with co-workers, and work-family conflict.

*Hypothesis 2:* Transformational leadership will significantly increase the prediction of positive affective well-being, after demographics and work-stressors variables.

In addition to determining if transformational leadership would predict positive affective well-being, a second objective of Study 2 was to further validate the Positive Affective Well-being Scale. Initial analyses using a student sample gave evidence for a one factor structure measuring positive well-being. Study 2 investigated the psychometric properties of the Positive Affective Well-being Scale using a work sample. Well-being (measured using a shortened version of the GHQ-12 and the Positive Affective Well-being Scale) was predicted using known antecedents of well-being (e.g. routinization, recognition, work/family conflict, job control, interpersonal relationship with co-workers). In summary, the main purpose of Study 2 is to determine if transformational leadership predicts positive well-being. The secondary purpose of this study is to further test the convergent validity of the Positive Affective Well-being Scale by correlating it with another measure of well-being using a different sample.

## Method

### *Participants*



Participants in study 2 were 758 nurses employed by Capital Health District Authority in Eastern Canada who completed the study materials as part of a larger health climate survey. Of the participants who answered the survey, 724 (94.3%) were females, and 34 (4.4%) were males. The participants' age ranged from 20 years to over 60 years old, with the majority being between the ages of 40 to 49 years of age (41.5%).

Employees participated in this survey to assist in the development of a happy and healthier workplace.

### *Measures*

As part of the Healthy Climate Survey within Capital Health, participants were asked to complete a five page survey to assess their perception of their workload, co-workers, supervisors, and the health climate within the institution.

*Well-being* was assessed using the 7-item Positive Affective Well-being Scale (Appendix A) and a shorter 6-item version of the GHQ-12 (Appendix E). Higher scores on the Positive Affective Well-being Scale reflect a higher degree of positive affective well-being. Higher scores on the shortened GHQ-12 indicate higher psychological well-being.

*Age* was measured as a control variable because people tend to cope better with their job and their leaders as they get older (Jex, 1998). Respondents checked off the following responses to indicate their age range: 20-29, 30-39, 40-49, 50-59, and 60+. Older workers are more likely to be realistic about their supervisor and their jobs. This helps to alleviate older workers' work stress and increase their job satisfaction and well-being. To support of this theory, Seltzer and Numerof (1988) found that there were strong negative correlations between age and burnout.

*Gender:* Past research on gender has found that women tend to score higher than men on the GHQ (Goldberg & Williams, 1991). However, it is not considered the most reliable predictor of well-being (Gilbreath & Benson, 2004). Gender was included since there has been debate about the effect of gender on well-being.

*Work stressors* were measured using subscales of the Canadian Forces Occupational Stress Questionnaire (CFOSQ – Kelloway & Barling, 1994). Stressors measured include quantitative skill use, control, decision-making, work load, recognition, routinization, work and family conflict, and co-worker relationships. Each subscale and its internal consistency (Kelloway & Barling, 1994) are described below.

*Skill use.* Skill use (Appendix F) was measured using a six item scale that requires respondents to rate their ability to develop current or learn new skills at work. Higher scores indicate a more positive perception of skill use at work.

*Control.* Three items were used to determine the amount of control that participants perceived that they have at work (Appendix G). The participants rated their ability to control their work schedule, the tasks they work on, and how they spend their time at work. Higher scores indicate a higher degree of job control.

*Decision-making.* This five item scale measures participants' perceptions of the amount of influence that they have in the workplace as well as on their job (Appendix H). Higher scores indicate a higher degree of decision-making in the workplace.

*Work load.* This scale has five items that measure perceptions of the timeframe that the individual has to complete the tasks (Appendix I). A sample item is "I have too much to do." Higher scores indicate a higher degree of workload or a smaller timeframe to complete tasks.

*Recognition.* Recognition (Appendix J) was measured using five items that describe the amount of recognition that participants felt they received at work. Participants rated whether they felt that they received recognition from authority figures as well as from other co-workers. Higher scores indicate a higher degree of recognition.

*Routinization.* This five-item scale measured participants' perception of task variety that they have at work (Appendix K). An example of an item from this scale is "At work I do the same things over and over". Higher scores indicate a higher degree of work routine, or a lack of variety at work.

*Work-family conflict.* Work-family conflict is a major source of stress, especially when work overlaps into time that is spent with family. An example of an item from this scale is "Because of work I have to miss family functions". Higher scores indicate a higher degree of work-family conflict.

*Co-worker relationships.* Quality of co-worker relationships was measured using a six-item scale (Appendix M) that asked participants to rate the cohesion and teamwork that they have with their co-workers. Higher scores indicate a higher degree of cohesion with co-workers.

Responses for all of the subscales were rated using a 7-point Likert scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). The internal consistency for each subscale was acceptable ( $\alpha > .80$ ; Kelloway & Barling, 1994).

*Transformational leadership* was measured using a modified version of the Global Transformational Leadership scale developed by Carless et al. (2000; Appendix N). The 7-item scale is a single construct measure that represents a global measure of leadership with alpha reliability of .93. The scale was modified to reduce the number of

double barreled items, resulting in a 9-item scale. Response items are rated on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*all of the time*).

### *Data analyses procedures*

Two, three-step hierarchical regression analyses were conducted to test for a linear relationship between transformational leadership and employee well-being. I hypothesized that transformational leadership will predict employee positive affective well-being above and beyond the prediction attributable to demographics and measures of work stressors. On the first step, the Positive Affective Well-being Scale and the modified GHQ-12 were regressed on demographic measures (age and gender), followed by measures of workplace stressors (quantitative work load, routinization, control, etc.) in step two. Leadership was added in the step three. Changes in  $R^2$  and  $\beta$  for each step were analyzed to determine the significance of the predictors.

## Results

### *Data cleaning*

Prior to conducting the regression analyses, measures of stressors (e.g. work load, work-family conflict, relationship with co-workers) and well-being (shorter version of the GHQ-12 and the Positive Affective Well-being Scale) were screened to ensure accuracy of data, check missing values, examine the reliability of the scales, and assure the assumptions of hierarchical regression were met. Missing data were treated using listwise deletion from further analyses. The ratio of cases to predictors was calculated, and the minimum size required was 122 participants. Reliability analyses conducted on all

measures yielded acceptable alphas for all scales except for the Control subscale ( $\alpha = .60$ ); the alphas are summarized in Table 6.

The scales were assessed for normality, linearity, and homoskedasticity of residuals. First, the normality for each scale was assessed by examining its distribution. Based on frequency histograms and calculations of skewness values, I discovered that five of the work stressors subscales (Skill Use, Decision Making, Recognition, Work-Family Conflict, and Co-worker Relationships), the Positive Affective Well-being Scale and the shortened GHQ-12 were negatively skewed ( $z > -4.0$ ). The Routinization subscale was positively skewed ( $z = 5.48$ ), while the Control ( $z = 3.32$ ) and Work Load ( $z = -.87$ ) subscales and the GTL ( $z = .65$ ) were normally distributed. According to Tabachnick and Fidell (2001), significant skewness will not have a considerable effect on the normality of distribution in large sample sizes. The visual impact of skewness is not as visible on a larger sample size in contrast to a skewed distribution on a smaller sample. Therefore, the Positive Affective Well-being Scale, the shortened GHQ-12, and the skewed work stressors subscales were left untransformed.

The bivariate scatterplots of all the variables also revealed heteroskedasticity in the sample. According to Tabachnick and Fidell (2001), a solution to heteroskedasticity without transforming any of the scores is to use a more stringent alpha level. For this study, the alpha level was observed at .01.

Univariate outliers that had standardized scores greater than four ( $z \geq \pm 4$ ) were detected through the descriptives. Four univariate outliers were detected and deleted from the data set. Multivariate outliers were checked through a preliminary regression analysis. An assessment of Cook's distance showed that there were no influential outliers.

Table 6. Descriptive statistics, internal consistencies, and intercorrelations.

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Gender	-	-													
2 Age	2.85	.90	.03												
3 Skill use	5.3	.98	-.01	-.07	(-.79)										
4 Control	3.36	1.34	-.02	-.02	.19*	(-0.6)									
5 Decision making	4.22	1.21	.02	.01	.40*	.49*	(0.82)								
6 Work load	4.26	1.35	-.01	-.05	.05	-.06	-.24*	(0.87)							
7 Recognition	4.84	1.29	-.01	.00	-.27*	-.30*	-.53*	.30*	(0.81)						
8 Routinization	3.55	1.09	.01	.02	-.48*	-.09*	-.18*	-.03	.20*	(0.76)					
9 Work-family conflict	4.45	1.5	.00	-.17*	.02	-.22*	-.24*	.36*	.29*	-.02	(0.83)				
10 C-WR	5.11	1.11	-.07	-.06	.25*	.17*	.31*	-.14*	-.31*	-.11	-.07*	(0.9)			
11 GTL	3.94	1.72	.00	-.02	.29*	.32*	.52*	-.19*	-.60*	-.12	-.22*	.34*	(0.97)		
12 Shortened GHQ-12	5.08	1.08	-.05	.10*	.05	.08	.23*	-.26*	-.16*	-.03	-.21*	.17*	.18*	(.81)	
13 PAWS	4.58	1.18	-.03	.08	.21*	.17*	.36*	-.30*	-.34*	-.12*	-.32*	.26*	.34*	.63*	(.94)

Note.  $N = 748$ . Internal reliabilities (coefficient alphas) are given in parentheses on the diagonal.

\*  $p < .01$ .

C-WR = Co-Worker Relationships; GTL = Global Transformational Leadership scale; GHQ-12 = General Health Questionnaire-12; PAWS = Positive Affective Well-being.

Multicollinearity was also assessed to ensure that the measures were not redundant. There was a moderately high correlation ( $r = .63$ ) between the Positive Affective Well-being Scale and the shortened GHQ-12. However, this is not surprising, as both scales measure well-being, although different facets of well-being. A correlation between the Positive Affective Well-being Scale and the shortened GHQ-12 above .90 would indicate multicollinearity between the two scale (Tabachnick & Fidell, 2001). The final  $N$  for this study was 748 participants.

### *Regression analyses*

Employees tend to cope better at work as they get older because they have more realistic expectations regarding their leaders and their job. The coping mechanisms help to improve their well-being by reducing their work stress, and increasing their job satisfaction (Jex, 1998). Although gender is not a consistently a reliable predictor of well-being, past research has indicated that women tend to report poorer well-being than men (Goldberg & Williams, 1991). Therefore, age and gender were entered on the first step as control variables.

On the second step, I entered all the work stressor variables (Skill Use, Control, Decision-making, Work Load, Recognition, Routinization, Work-family Conflict, and Co-worker Relationships). Stress is a major contributor of poor health, where high degree of stress tends to negatively impact well-being. Therefore, work stressors, which are a source of stress, were included as control variables in the analysis.

Finally, to test the first hypothesis, I added the transformational leadership scores on Step 3. The first hierarchical regression analysis was conducted to see if age, gender, work stressor variables and transformational leadership would predict psychological

well-being as measured by the shortened GHQ-12. The second hierarchical regression was conducted to determine if the same variables would predict positive well-being.

The means, standard deviations, internal reliabilities, and intercorrelations of variables are summarized in Table 6. Results of the first regression analysis are presented in Table 7.  $R^2$  was significantly greater than zero at the end of each step. With all the variables entered in the equation,  $R^2 = .13$ ,  $F(11, 735) = 9.76$ ,  $p < .001$ . After Step 1, with age and gender entered to the equation,  $R^2 = .01$ ,  $F(2, 745) = 4.68$ ,  $p = .01$ . After Step 2, with the addition of the eight work stressor variables,  $R^2 = .13$ ,  $F(8, 737) = 11.88$ ,  $p < .001$ . The addition of transformational leadership did not significantly add to the prediction of psychological well-being as measured by the shortened GHQ-12 ( $\Delta R^2 = .00$ ,  $F_{change}(1, 736) = 2.32$ ,  $p = .13$ ).

Examination of the  $\beta$  weights after Step 3 indicated that transformational leadership was not a significant predictor of psychological well-being, ( $p = .13$ ). This was unexpected as transformational leadership qualities are viewed as supportive characteristics that would improve employee psychological well-being.

The second hierarchical regression resulted was performed to determine if transformational leadership would predict positive affective well-being beyond the same control variables as the first regression analysis. Similar to the first analysis, age and gender were entered in the first step. Work stressor variables were entered on the second step to control for the influence of these variables on positive affective well-being. Finally, transformational leadership was entered on the third step to determine if it would increase the prediction of positive affective well-being when controlling for all other variables.



Table 7. Summary of hierarchical regression analysis for variables predicting shortened GHQ-12 ( $N = 748$ )

	Variable	$R$	$R^2$	$\Delta R^2$	$B$	$SE\ B$	$B$
Step 1	Age	.11*	.01*	.01*	.12*	.04	.10*
	Gender				-.26	.19	-.05
Step 2	Age	.35*	.13*	.11*	.09	.04	.08
	Gender				-.23	.18	-.04
	Skill use				-.01	.05	-.01
	Control				-.03	.03	-.04
	Decision making				.14*	.04	.16*
	Work load				-.14*	.03	-.18*
	Recognition				.03	.04	.03
	Routinization				-.02	.04	-.02
	Work-family conflict				-.08*	.03	-.11*
	C-WR				.10*	.04	.10*
Step 3	Age	.36*	.13*	.00	.09	.04	.08
	Gender				-.24	.18	-.04
	Skill use				-.01	.05	-.01
	Control				-.04	.03	-.05
	Decision making				.13*	.04	.15*
	Work load				-.14*	.03	-.18*
	Recognition				.05	.04	.06
	Routinization				-.02	.04	-.02
	Work-family conflict				-.08*	.03	-.11*
	C-WR				.09	.04	.09
	GTL				.04	.03	.07

Note. \* $p \leq .01$ .

C-WR = Co-worker Relationships; GTL = Global Transformational Leadership.

Results of the second hierarchical regression are displayed in Table 8.  $R^2$  was significantly greater than zero at the end of Step 2 and Step 3. With all the variables entered in the equation,  $R^2 = .26$ ,  $F(11, 735) = 24.26$ ,  $p < .001$ . After Step 1, with age and gender entered to the equation,  $R^2 = .01$ ,  $F(2, 745) = 2.84$ ,  $p = .06$ . After Step 2, with the addition of the eight work stressor variables,  $R^2 = .25$ ,  $F(8, 737) = 30.43$ ,  $p < .001$ . The addition of transformational leadership significantly added to the prediction of psychological well-being ( $p < .01$ ), and it accounted for 1% of the variance,  $\Delta R^2 = .01$ ,  $F_{change}(1, 736) = 7.73$ ,  $p = .006$ .

Examination of the  $\beta$  weights after Step 3 indicated that transformational leadership was a significant predictor of positive affective well-being,  $\beta = .12$ ,  $t(735) = 2.78$ ,  $p = .006$ . This indicates that leaders displaying transformational qualities tend to increase employees' positive well-being, further emphasizing that leaders can influence employees' health.

### Discussion

The main purpose of Study 2 was to determine if transformational leadership predicts psychological well-being and positive well-being. This study was also conducted to determine how the psychometric properties of the Positive Affective Well-being Scale hold up using a work sample. Examination of the regression analyses revealed that transformational leadership failed to predict general well-being using the shortened GHQ-12 beyond that of demographic and work stress variables, but did improve the prediction of positive affective well-being when controlling for demographic and work stressor variables.

*Table 8.* Summary of hierarchical regression analysis for variables predicting the Positive Affective Well-being Scale ( $N = 748$ ).

	Variable	$R$	$R^2$	$\Delta R^2$	$B$	$SE\ B$	$B$
Step 1	Age	.09	.01	.01	.11	.05	.08
	Gender				-.21	.21	-.04
Step 2	Age	.50*	.25*	.25*	.07	.04	.05
	Gender				-.17	.19	-.03
	Skill use				.13*	.05	.11*
	Control				-.02	.03	-.03
	Decision making				.15*	.04	.15*
	Work load				-.14*	.03	-.16*
	Recognition				-.08	.04	-.09
	Routinization				-.03	.04	-.02
	Work-family conflict				-.15*	.03	-.19*
	C-WR				.14*	.04	.13*
Step 3	Age	.51*	.26*	.01*	-.17	.19	-.03
	Gender				.07	.04	.06
	Skill use				.12	.05	.10
	Control				-.03	.03	-.03
	Decision making				.12*	.04	.13*
	Work load				-.14*	.03	-.16*
	Recognition				-.04	.04	-.04
	Routinization				-.03	.04	-.03
	Work-family conflict				-.15*	.03	-.19*
	C-WR				.13*	.04	.12*
	GTL				.08*	.03	.12*

*Note.* \* $p \leq .01$ .

C-WR = Co-worker Relationships; GTL = Global Transformational Leadership.

Some researchers have suggested that the supervisor-subordinate relationship is the most common source of stress (Landeweerd & Boumans, 1994; Sivanathan et al., 2005; Tepper, 2000). The current study did not find the same results; transformational leadership did not improve the prediction of ill-health. However, transformational leadership did improve the prediction of positive well-being using the Positive Affective Well-being Scale. These results suggest that transformational leadership is related to employees' positive well-being rather than their negative well-being. This could be attributed to the four characteristics of transformational leadership, idealized influence, intellectual stimulation, inspirational motivation, and individual consideration. These four characteristics imply a nurturing and supportive leader, which could positively influence employees' well-being. The characteristics of transformational leadership may provide one explanation as to why transformational leadership predicted positive well-being, but not negative well-being.

The hierarchical regression analyses indicated that decision-making and work load were also significant predictors of psychological well-being and positive affective well-being. However, the amount of influence that employees perceive they have at work (decision-making) and the time frame that employees have to complete tasks (work load) is dependent on their leader; therefore, using decision-making and work-load as primary predictors of psychological well-being might have lowered the incremental prediction that transformational leadership could have on psychological well-being. The results of the second hierarchical regression is more impressive because transformational leadership still increased the prediction of positive affective well-being despite using decision-making and work load as primary predictors of the criterion. This also leads to

the assumption that the effects of transformational leadership are widespread and are not limited to the work environment.

Work-family conflict and the quality of the co-worker relationships were also significant predictors of psychological well-being and positive affective well-being. The directionality and significance of work-family conflict suggests that employees believe that work-life balance is important in maintaining employee well-being, and with less conflicts between work and family, they are more likely to report increased well-being. Employees also perceive that a more cohesive relationship with their co-workers could also improve both psychological well-being and positive affective well-being. Therefore, a work environment that encourages teamwork and understands the need for work-life balance could considerably improve employees' mental health.

The results of Study 2 also add support to previous studies relating leadership to well-being. Gilbreath and Benson (2004) found supervisory behaviour made a significant contribution to employees' psychological well-being. However, they used a broad measure of supervisory behaviour and a general measure of psychological health. The current study focused on the impact of transformational leadership on employee positive well-being by using measures that are more specific. By focusing on one type of leadership, this study has implications for improving employee well-being by changing leadership styles in the workplace.

Gilbreath and Benson (2004) centred their research on supervisor behaviour and the extent to which these behaviours could influence employee well-being. They found that supervisor behaviour was a significant contributor to employees' psychological well-being. However, their study did not look at the potential influence that leadership

behaviours, as displayed by transformational leaders, could have on employees' positive affective well-being. By focusing on the positive influence of employee well-being, it narrows the focus as to how employees' affective well-being could be improved despite employees' attitudinal tendency (for example, predisposition toward negative affectivity).

Turner et al. (2005) conducted a similar study linking transformational leadership to employee well-being. They measured transformational leadership and employee well-being before and after a leadership initiative. They found that transformational leadership predicted well-being across a one month time lag, and that this effect was stable across time. This asserts that transformational leadership could have a lasting impact on employees' health. Future research could potentially look at replicating this study using the Positive Affective Well-being Scale and comparing it with other measures of physical and mental well-being to determine if the Positive Affective Well-being Scale is the best criterion measure of well-being.

In a well-cited field experiment, a training intervention for bank managers lead to improvements not only in the managers' leadership skills in general, but also helped to develop their transformational leadership qualities in particular (Barling et al., 1996). This research demonstrated the effectiveness of transformational leadership training, and its impact on subordinates' perception of leadership behaviours displayed by the bank managers and subordinates' commitment to the organization. There was also an increase in subordinates' financial performance. Barling et al.'s study showed that leaders can be trained to display transformational qualities, and that the training can lead to various positive outcomes for the organization. Therefore, if leaders were trained to display transformational leadership qualities, there is a strong possibility that organizations may

benefit in increased productivity and performance as well as improved employee well-being.

#### *Potential limitations*

The cross-sectional nature of the data does not allow for a causal inference based on the current results; we can only conclude that there is a relationship between transformational leadership and employee well-being. Although Turner et al. (2005) concluded that well-being did not predict transformational leadership, I did not test this assumption in the current study. It is possible that happier employees might give more positive evaluations of their leaders. Further validation using longitudinal or experimental data is required to replicate Turner et al.'s transformational leadership – well-being relationship.

Second, data were collected using self-reported questionnaires, which brings up the concern of common method variance. Because all data were collected using self-reports, it is possible that the lack of method variance inflated correlations between variables artifactually (Lindell & Whitney, 2001). However, based on variable intercorrelations (refer to Table 4), there is little evidence that observed correlations were spuriously caused by unaccounted factors in this study. Future research should focus on using multiple methods for collection data to avoid common method variance issues.

Third, the use of a shortened version of the GHQ-12 may also have had an influence on the results. Additional validation studies should be conducted to determine the psychometric properties of the shortened version of the GHQ-12 as well as the Positive Affective Well-being Scale.

Finally, this study was aimed at using transformational leadership to predict positive well-being. However, it cannot be concluded that transformational leadership would be the best predictor of well-being. It is possible that other leadership styles such as charismatic leadership or transactional leadership could also have an influence on employee well-being. Further research in this area would be useful in assessing the effectiveness of transformational leadership in comparison to other leadership styles.

### General Discussion

The goal of these two studies was to develop and validate a measure of positive affective well-being and link it to transformational leadership. Primarily, this research was conducted in response to Luthan's (2002) call for a more positive approach in organizational psychology and changing the notion that psychology is mainly focused on the negative aspects of life. The result of the first study is a valid and reliable measure of positive well-being – the Positive Affective Well-being Scale. The second study showed that transformational leadership was a significant predictor of positive affective well-being.

As work-life balance is an important aspect of organizational research, it is also imperative that future research also look into the impact that employee well-being could have on the employee's personal well-being outside of work. Another potential research focus is to see if there is a relationship between positive well-being and individual personality: is there a link between personality and positive affect? Gohm and Clore (2002) suggested that extraversion and neuroticism are associated with positive affect and negative affect, respectively, and have been used as alternative explanations for traits in



other psychological functions. Therefore, a person who is high on positive affect is likely to report higher scores on positive well-being.

Another question that arises is the long-term effect of leadership styles (e.g. transformational leadership) on employee well-being. Can good leadership be good for your health, and would bad leaders be detrimental to it in the long run? Study 2 indicates that work stressors and job characteristics are related with well-being as well as leadership. These relationships suggest that transformational leaders could influence employee well-being, and further research is needed to determine if leaders create the job conditions that lead to positive well-being.

Could transformational leaders buffer the effects of work stressors on employee well-being? For example, if an individual was to work in an environment that was extremely stressful and demanding, could the leader help the employee to cope better at his or her job? In other words, what is the potential for transformational leaders to encourage and nurture coping skills that can mediate the relationship between stress and employees' positive well-being? Turner et al. (2005) found that transformational leadership on employees' psychological well-being was mediated by employee trust in management and employees' self-efficacy. Could these variables mediate the transformational leadership and positive well-being relationship?

The pursuit of improving health and well-being is especially important to organizations because happy and productive employees lead to improved organizational productivity and performance. This could potentially lead to increased satisfaction in the workplace and decreased absenteeism and turnover in the organization. The results of Study 2 also indicate that the predictors of well-being are related to leadership qualities

which are trainable, and may be cost-effective in the long-run for organizations to implement. By promoting employee well-being, employees will be more committed to the organization, increasing the likelihood of retention, and decreasing the cost of recruitment and selection of new employees. This can improve organizational image to the public eye.

In short, this research into positive well-being has provided several contributions. First, the development the Positive Affective Well-being Scale is a step toward expanding the realm of positive psychology and shows promise as a unidimensional measure of positive affective well-being. The results of the second study further suggest that transformational leadership can improve the prediction of employee positive affective well-being over demographics and work stress variables. Finally, replication of current findings in future research using experimental and/or longitudinal data could enhance our understanding of the influence of transformational leadership on employee well-being to develop cost-effective interventions in the workplace.

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**Appendix A – The Positive Affective Well-being Scale (PAWS)**

**Using the scale below, indicate the number which best describes how often you felt or behaved this way.**

- |                      |                     |
|----------------------|---------------------|
| 1 = Not at all       | 5 = Fairly often    |
| 2 = Rarely           | 6 = Often           |
| 3 = Once in a while  | 7 = All of the time |
| 4 = Some of the time |                     |

**During the past six months...**

- |                    |       |
|--------------------|-------|
| 1. Motivated       | _____ |
| 2. Cheerful        | _____ |
| 3. Enthusiastic    | _____ |
| 4. Lively          | _____ |
| 5. Joyful          | _____ |
| 6. In good spirits | _____ |
| 7. Energetic       | _____ |

Appendix B – The General Health Questionnaire-12 (GHQ-12)

**Using the scale below, indicate the number which best describes how often you felt or behaved this way.**

- |                      |                     |
|----------------------|---------------------|
| 1 = Not at all       | 5 = Fairly often    |
| 2 = Rarely           | 6 = Often           |
| 3 = Once in a while  | 7 = All of the time |
| 4 = Some of the time |                     |

**During the past six months...**

1. Have you been able to concentrate on whatever you're doing?\*
2. Have you lost much sleep from worry?
3. Have you felt you were playing a useful part in things?\*
4. Have you felt capable about making decisions about things?
5. Have you felt under strain?
6. Have you felt you couldn't overcome your difficulties?
7. Have you been able to enjoy day-to-day activities?\*
8. Have you been able to face up to your problems?
9. Have you been feeling unhappy and/or depressed?
10. Have you been losing confidence in yourself?
11. Have you been thinking of yourself as a useless person?
12. Have you been feeling happy, all things considered?\*

*Note.* \* Items that have been reverse coded.

Appendix C – The Center for Epidemiological Studies – Depression (CES-D) Scale

**Using the scale below, indicate the number which best describes how often you felt or behaved this way – DURING THE PAST SIX MONTHS**

- 1 = Rarely or none of the time (less than 1 day)
- 2 = Some or a little of the time (1-2 days)
- 3 = Occasionally or a moderate amount of time (3-4 days)
- 4 = Most or all of the time (5-7 days)

- 1. I was bothered by things that usually don't bother me. \_\_\_\_\_
- 2. I did not feel like eating; my appetite was poor. \_\_\_\_\_
- 3. I felt that that I could not shake off the blues even with the help from my family or friends. \_\_\_\_\_
- 4. I felt that I was just as good as other people.\* \_\_\_\_\_
- 5. I had trouble keeping my mind on what I was doing. \_\_\_\_\_
- 6. I felt depressed. \_\_\_\_\_
- 7. I felt everything I did was an effort. \_\_\_\_\_
- 8. I felt hopeful about the future.\* \_\_\_\_\_
- 9. I thought my life had been a failure. \_\_\_\_\_
- 10. I felt fearful. \_\_\_\_\_
- 11. My sleep was restless. \_\_\_\_\_
- 12. I was happy.\* \_\_\_\_\_
- 13. I talked less than usual. \_\_\_\_\_
- 14. I felt lonely. \_\_\_\_\_
- 15. People were unfriendly. \_\_\_\_\_
- 16. I enjoyed life.\* \_\_\_\_\_

- |                                     |   |
|-------------------------------------|---|
| 17. I had crying spells.            | — |
| 18. I felt sad.                     | — |
| 19. I felt that people disliked me. | — |
| 20. I could not get “going”.        | — |

*Note.* \* Items that have been reverse coded.

**Appendix D – The Positive and Negative Affectivity Schedule (PANAS) Scale**

**Using the scale below, indicate the number which best describes how often you felt or behaved this way – DURING THE PAST SIX MONTHS**

- |                                 |                 |
|---------------------------------|-----------------|
| 1 = Very slightly or not at all | 4 = Quite a bit |
| 2 = A little                    | 5 = Extremely   |
| 3 = Moderately                  |                 |

**Indicate to what extent you generally feel this way, that is, how do you feel on average.**

- |                 |       |
|-----------------|-------|
| 1. Interested   | _____ |
| 2. Distressed   | _____ |
| 3. Excited      | _____ |
| 4. Upset        | _____ |
| 5. Strong       | _____ |
| 6. Guilty       | _____ |
| 7. Scared       | _____ |
| 8. Hostile      | _____ |
| 9. Enthusiastic | _____ |
| 10. Proud       | _____ |
| 11. Irritable   | _____ |
| 12. Alert       | _____ |
| 13. Ashamed     | _____ |
| 14. Inspired    | _____ |
| 15. Nervous     | _____ |
| 16. Determined  | _____ |
| 17. Attentive   | _____ |
| 18. Jittery     | _____ |
| 19. Active      | _____ |
| 20. Afraid      | _____ |



## Appendix E – The Shortened General Health Questionnaire-12 (GHQ-12)

Now I would like to ask about how you have been feeling over the past six months. Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                      |                     |
|----------------------|---------------------|
| 1 = Not at all       | 5 = Fairly often    |
| 2 = Rarely           | 6 = Often           |
| 3 = Once in a while  | 7 = All of the time |
| 4 = Some of the time |                     |

**During the last six months have you been feeling...**

1. You couldn't over come your difficulties?\* \_\_\_\_\_
2. Able to enjoy normal day-to-day activities? \_\_\_\_\_
3. Unhappy and/or depressed?\* \_\_\_\_\_
4. Less confident in yourself?\* \_\_\_\_\_
5. Happy, all things considered? \_\_\_\_\_
6. In the last six months have you been thinking of yourself as a worthless person?\* \_\_\_\_\_

*Note.* \* Items that have been reverse coded.

## Appendix F – The Skill Use Skill

Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                           |                    |
|---------------------------|--------------------|
| 1 = Strongly Disagree     | 5 = Somewhat Agree |
| 2 = Disagree              | 6 = Agree          |
| 3 = Somewhat Disagree     | 7 = Strongly Agree |
| 4 = Neutral or don't know |                    |

1. In my job I am provided with opportunities to learn and to grow in my particular area of work. \_\_\_\_\_
2. My job allows me to learn new things. \_\_\_\_\_
3. My job allows me to develop new skills. \_\_\_\_\_
4. I've had to acquire new skills to keep up with my job. \_\_\_\_\_
5. My job requires the use of many skills. \_\_\_\_\_
6. My job allows me to use my skills and abilities. \_\_\_\_\_

## Appendix G – The Control Scale

Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                           |                    |
|---------------------------|--------------------|
| 1 = Strongly Disagree     | 5 = Somewhat Agree |
| 2 = Disagree              | 6 = Agree          |
| 3 = Somewhat Disagree     | 7 = Strongly Agree |
| 4 = Neutral or don't know |                    |

1. I decide which tasks I work on each day. \_\_\_\_\_
2. I have control over my work schedule. \_\_\_\_\_
3. I decide how to spend my time at work. \_\_\_\_\_

## Appendix H – The Decision-Making Scale

Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                           |                    |
|---------------------------|--------------------|
| 1 = Strongly Disagree     | 5 = Somewhat Agree |
| 2 = Disagree              | 6 = Agree          |
| 3 = Somewhat Disagree     | 7 = Strongly Agree |
| 4 = Neutral or don't know |                    |

1. I have the opportunity to make my own decisions. \_\_\_\_\_
2. I have enough influence on my job. \_\_\_\_\_
3. I have the opportunity to be involved in decision making. \_\_\_\_\_
4. I have a say in how the work gets done. \_\_\_\_\_
5. I believe my opinion is considered in decisions that affect me. \_\_\_\_\_

## Appendix I – The Work Load Scale

Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                           |                    |
|---------------------------|--------------------|
| 1 = Strongly Disagree     | 5 = Somewhat Agree |
| 2 = Disagree              | 6 = Agree          |
| 3 = Somewhat Disagree     | 7 = Strongly Agree |
| 4 = Neutral or don't know |                    |

1. I have too much work to do. \_\_\_\_\_
2. I am frequently behind in my work. \_\_\_\_\_
3. I have to work very quickly to finish all of my tasks. \_\_\_\_\_
4. It is hard for me to keep up with the work load. \_\_\_\_\_
5. There is never enough time to finish all of my work. \_\_\_\_\_

## Appendix J – The Recognition Scale

Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                           |                    |
|---------------------------|--------------------|
| 1 = Strongly Disagree     | 5 = Somewhat Agree |
| 2 = Disagree              | 6 = Agree          |
| 3 = Somewhat Disagree     | 7 = Strongly Agree |
| 4 = Neutral or don't know |                    |

1. I usually hear if I've done a good job. \_\_\_\_\_
2. There is not enough recognition for good work here. \_\_\_\_\_
3. Supervisors don't often notice good work here. \_\_\_\_\_
4. Nobody in authority appreciates my work. \_\_\_\_\_
5. I feel I am recognized for the work I do. \_\_\_\_\_

## Appendix K – The Routinization Scale

Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                           |                    |
|---------------------------|--------------------|
| 1 = Strongly Disagree     | 5 = Somewhat Agree |
| 2 = Disagree              | 6 = Agree          |
| 3 = Somewhat Disagree     | 7 = Strongly Agree |
| 4 = Neutral or don't know |                    |

1. At work I do the same thing over and over. \_\_\_\_\_
2. There is very little variety in the tasks that I do. \_\_\_\_\_
3. Nothing ever changes in my job. \_\_\_\_\_
4. Sometimes it seems as though I could do my job in my sleep. \_\_\_\_\_
5. There is never anything new in my job. \_\_\_\_\_

## Appendix L – The Work-Family Conflict Scale

Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                           |                    |
|---------------------------|--------------------|
| 1 = Strongly Disagree     | 5 = Somewhat Agree |
| 2 = Disagree              | 6 = Agree          |
| 3 = Somewhat Disagree     | 7 = Strongly Agree |
| 4 = Neutral or don't know |                    |

1. My work conflicts with my family. \_\_\_\_\_
2. Because of work I have to miss family functions. \_\_\_\_\_
3. Because of work I am frequently away from home. \_\_\_\_\_
4. It is difficult to balance my work and family demands. \_\_\_\_\_



## Appendix M – The Co-worker Relationship Scale

Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                           |                    |
|---------------------------|--------------------|
| 1 = Strongly Disagree     | 5 = Somewhat Agree |
| 2 = Disagree              | 6 = Agree          |
| 3 = Somewhat Disagree     | 7 = Strongly Agree |
| 4 = Neutral or don't know |                    |

1. The people I work with all help each other. \_\_\_\_\_
2. I can trust my coworkers. \_\_\_\_\_
3. At work everybody pitches in to get the work done. \_\_\_\_\_
4. My coworkers and I work as a team. \_\_\_\_\_
5. My coworkers treat me with respect and courtesy. \_\_\_\_\_
6. We have fun at work. \_\_\_\_\_

## Appendix N – The Global Transformational Leadership Scale (GTL)

In the following statements, supervisor refers to the person to whom you report. Please respond to each of the following statements using the scale given below, writing the number corresponding with your answer in the space provided.

- |                      |                     |
|----------------------|---------------------|
| 1 = Not at all       | 5 = Fairly often    |
| 2 = Rarely           | 6 = Often           |
| 3 = Once in a while  | 7 = All of the time |
| 4 = Some of the time |                     |

### My supervisor

1. Communicates a clear and positive vision of the future. \_\_\_\_\_
2. Treats staff as individuals and encourages their development. \_\_\_\_\_
3. Gives encouragement and recognition to staff. \_\_\_\_\_
4. Fosters trust, involvement, and cooperation among team members. \_\_\_\_\_
5. Encourages thinking about problems in new ways. \_\_\_\_\_
6. Is clear about his/her values. \_\_\_\_\_
7. Practices what he/she preaches. \_\_\_\_\_
8. Instills pride and respect in others. \_\_\_\_\_
9. Inspires me by being highly competent. \_\_\_\_\_



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