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The link between emotional competence and well-being: a longitudinal study

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ABSTRACT *What aspects of emotional competence help protect people from stress, anxiety, and depression, and help to promote positive affect? A total of 163 university students completed a two wave study that involved measuring emotional competence and emotional well-being at 1-year intervals. As expected, Time 1 measures of emotional competence predicted Time 2 measures of well-being, after controlling for Time 1 measures of well-being. Specifically, ineffective problem orientation predicted increases in anxiety and stress, and decreases in positive affect. Difficulty identifying and describing emotions predicted increases in anxiety and decreases in positive affect. Finally, an aspect of difficulty managing emotions (i.e. rumination) predicted decreases in positive affect. Each emotional competence variable predicted unique variance after controlling for other significant variables. We discuss the implications of these findings for counselling practice.*

Research has suggested that emotional competence (EC), such as the ability to identify emotions, is correlated with depression, anxiety, and other indices of well-being (Ciarrochi *et al*., 2003; Cicchetti *et al*., 2000; Elias *et al*., 1991). Many past studies have focused on the way different measures of emotional competence (e.g. identifying emotions) correlate with well-being (e.g. anxiety). However, different EC measures correlate with each other, sometimes substantially (Ciarrochi *et al*., 2003). There is some danger that the measures are redundant in what they predict.

Emotional competence measures may be of benefit to counsellors, in that they can help the counsellor to identify client strengths and weaknesses and can provide feedback on how the client is improving. However, counsellors often have little time to administer measures that are largely redundant with each other. In this paper, we describe a study where we administered emotional competence measures within a single study, and examine their redundancy and utility in predicting variance in well-being 1 year later. The advantage of using a longitudinal design is that we can assess whether emotional competence precedes well-being in time (consistent with a causal model). Again, we would think it preferable for counsellors to target variables that

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are likely to be causally related to well-being, rather than variables that are mere concomitants or side-effects of well-being. Essentially, we are attempting to identify the 'active ingredients' of what helps a client get better, or makes them worse.

Emotional competence can be defined as an individual difference in how effectively people deal with emotions and emotionally charged problems (Ciarrochi *et al*., 2003; Saarni, 1997). We have deliberately avoided the use of 'emotional intelligence' (EI) because there is much debate about what should be classified as an intelligence (Mayer *et al*., 2001). Many researchers use the term EI to refer to self-report measures similar to those used in this study (Petrides *et al*., 2004; Schutte *et al*., 2002). However, others believe that in order for something to be classified as an intelligence it ought to be measured using an ability test with right or wrong answers (Mayer *et al*., 2001). Given that we make no assumption that these individual differences necessarily reflect a type of 'intelligence', we used the more neutral 'emotional competence' term (Saarni, 1999). It should be noted that ability-based EI measures and self-report EI measures tend to correlate only weakly (Brackett & Geher, in press; Ciarrochi *et al*., 2001). The measures in this study assess difficulty identifying emotions and difficulty managing emotions, two dimensions that are central to every self-report measure of EI (Bar-On, 1997; Petrides *et al*., 2004; Schutte *et al*., 2002).

Subjective well-being has been defined as a broad category of phenomena that includes people's positive and negative emotional states, life satisfaction, and satisfaction in specific domains (Diener *et al*., 1999). We focus on positive emotional states and negative emotional states (stress, anxiety, depression), as we expected these would be more likely to fluctuate during the course of a year compared to global life satisfaction. Specifically, we focus on depression, anxiety, and stress, because of their relatively high prevalence in both normal and clinical groups (Crawford & Henry, 2003; Kessler *et al*., 2005) and their links to such important outcomes as reduced pursuit of personal goals (for depression and anxiety; Hayes *et al*., 1999) and heart disease (in the case of stress: Claar & Blumenthal, 2003). Research has shown that stress, anxiety, and depression correlate with each other but are distinguishable, and have potentially different causes (Crawford & Henry, 2003; Lovibond & Lovibond, 1995). We also assess positive affect, as research indicates that the experience of positive affect can be somewhat independent of the experience of negative affect and relates to positive social behaviour (Watson & Clark, 1994).

Researchers have proposed a substantial number of emotional competence dimensions and measures (Bar-On, 1997; Ciarrochi & Godsell, in press; Mayer *et al*., 2001; Saarni, 1999). Recently, Ciarrochi and his colleagues identified some of the most commonly theorised dimensions of EC (Ciarrochi *et al*., 2003). They then identified measures of these dimensions that had strong psychometric support from multiple independent studies. In a large cross-sectional study, Ciarrochi *et al*. (2003) found that the measures were interrcorrelated and sometimes redundant with each other. Despite this, a subset of the measures showed incremental value in terms of relating to unique variance in well-being. The key competence variables were:

emotional problem orientation, identifying/describing emotions, and effective emotion management (Bar-On, 1997; Ciarrochi *et al*., 2003; Mayer *et al*., 2001).

Conceptually, the measures appeared to be tapping aspects of emotional processing that are related and perhaps mutually influence each other (Ciarrochi *et al*., 2003). For example, the ability to identify emotions may be influenced by people's initial orientation to their emotion-related problems. When people have an ineffective orientation, they seek to avoid their thoughts and feelings related to the problem (Frauenknecht & Black., 1995). Such people are unlikely to have much practice accepting their feelings and learning to identify them and discriminate between them. Consistent with this view, ineffective orientation is related to difficulty identifying feelings (Ciarrochi *et al*., 2003).

Difficulty identifying feelings in turn is likely to influence emotion management (Bach & Bach, 1995; Bagby *et al*., 1994a; Taylor, 2000). When people do not know what they are feeling, they are less able to resolve their emotional problems in constructive ways, turning instead to destructive forms of management such as alcohol abuse (Cox *et al*., 1994; Taylor, 2000). We now review the evidence relating each of these dimensions of EC to well-being.

Problem orientation

People with poor problem orientation view problems as threats and attempt to avoid thinking about the problem in order to reduce their aversive feelings (Chang & D'Zurilla, 1996; Ciarrochi *et al*., 2003; D'Zurilla *et al*., 1998; Frauenknecht & Black, 1995). Poor problem orientation has been associated with high depression, anxiety, hopelessness, suicidal ideation, health complaints, and neuroticism (Ciarrochi *et al*., 2003; D'Zurilla *et al*., 1998). It has been shown to be associated with high psychological distress and negative coping strategies, even when controlling for other critical personality variables (Chang & D'Zurilla, 1996; Ciarrochi *et al*., 2003).

Difficulty identifying and describing emotions (DIDE)

Difficulty identifying and describing emotions (DIDE) is a dimension that appears on almost every emotional competence/emotional intelligence measure (e.g. Ciarrochi *et al*., 2000, 2001; Mayer *et al*., 2000; Schutte *et al*., 1998). DIDE has been shown to be highly related to a number of important life outcomes. For example, people high in DIDE are more prone to drug addiction, eating disorders, and reporting medically unexplained symptoms (Taylor, 2001). DIDE is related to a variety of negative indices of well-being (e.g. depression), even after controlling for other measures of emotional competence (Ciarrochi *et al*., 2003). A longitudinal study found that DIDE predicts persistent somatisation at 2-year follow-up (Bach & Bach, 1995). We sought to evaluate whether DIDE also predicted well-being at a 1-year follow-up, even after controlling for other significant aspects of emotional competence.

Effective emotion management (EOM)

There is a substantial literature on individual differences in how effective people are at managing their emotions (Nolen-Hoeksema *et al*., 1997; Ciarrochi *et al*., 2001). Roger and Najarian (1989) have developed an instrument that assesses a number of the most important individual differences. Their emotional control questionnaire (ECQ) measures people's ability to control emotion in trying circumstances, and consists of four subscales measuring aggression control, rumination, benign control (or low impulsivity), and emotional inhibition.

Rumination

Rumination has been the strongest correlate of well-being in past cross-sectional research (Ciarrochi *et al*., 2003). Thus, we hypothesise that it will be most likely to predict well-being at a 1-year follow-up. Ruminators have trouble getting upsetting thoughts out of their minds (Roger & Najarian, 1989). They are absorbed with thoughts about the past or future and do not take action to change their situation (Nolen-Hoeksema & Davis, 1999). Ruminators seem to be motivated to avoid unpleasant affect by attempting to 'reason away' the uncontrollable (e.g. uncertainty: Dugas *et al*., 1998).

Longitudinal studies have established that people who engage in more rumination have higher levels of depressive symptoms over time and perceive themselves to be receiving less social support, even when controlling for their baseline levels of depressive symptoms (Nolen-Hoeksema & Davis, 1999; Nolen-Hoeksema *et al*., 1994, 1999). High rumination has also been associated with delayed recovery from stress, as indicated by delayed heart-rate (Roger & Jamieson, 1988) and physiological (cortisol) recovery (Roger & Najarian, 1998).

Study

We hypothesised that ineffective problem orientation, difficulty identifying and describing emotions, and ineffective emotion management (i.e. rumination) would predict increases in negative affect and decreases in positive affect 1 year later. We also hypothesised that these variables would predict distinctive variance in well-being, despite their intercorrelations (Ciarrochi *et al*., 2003). We also had an important exploratory question: are some competence variables better predictors of one state (say joviality) than another (say depression)?

Methods

Participants and procedure

First year university students were recruited at Time 1 from a psychology notice board. They completed the questionnaires, and then were asked to generate a code

that was used to identify participants 1 year later. Time 2 students were recruited in psychology classes, and offered 15 dollars for participation. On average, we identified only about one-fourth of the students from Time 1. This was not due to refusal to participate. Rather, the identification rate occurred because many students did not continue into second year psychology courses, instead taking other majors or dropping out of university. A comparison of those who did and did not complete the follow-up showed no difference in stress, anxiety, depression, and positive mood, all ps >0.1

The study was conducted over a 3-year period, in order to obtain sufficient sample size. Time 1 measures were collected from first year students in year 1 and 2 of the study. Time 2 measures were collected from second year students in year 2 and 3 of the study. We found no differences between samples within Time 1 or Time 2 periods, so these were combined. This resulted in a sample size of 163 (female = 133; male = 31; $M_{age} = 21.47$, SD = 5.95) for the depression, anxiety, and stress measures. The positive mood measure was administered only in year 2 and 3, and resulted in a smaller sample size of 106 (female = 93, male = 13, $M_{age} = 21.22$, SD = 5.81) for correlational analyses and 56 for the regression analyses. There were fewer in the regression analyses because this required that we control for Time 1 positive mood, the baseline measure that was administered only in year 2 of the study.

Measures

Emotional competence

The *Problem Orientation Scale* (nine items) of the Social Problem Solving Inventory consists of statements such as 'I avoid dealing with problems in my life' (Frauenknecht & Black, 1995). The scale has been show to have adequate reliability, and to relate in expected ways to other measures of problem orientation, to grade point average, and to psychological distress (Ciarrochi *et al*., 2003; Frauenknecht & Black, 1995).

The *Emotional Control Questionnaire* measures people's ability to control emotions in trying circumstances, and consists of scales measuring 'aggression control', 'rumination', 'benign control', and 'emotional inhibition' (Ciarrochi *et al*., 2003; Roger & Najarian, 1989, 1998). The measure of central importance to the present study is the rumination scale, which consists of items such as 'I find it hard to get thoughts about things that upset me out of my mind'. Consistent with its validity, the rumination scale has been shown to predict delayed recovery from stress, as indicated by delayed heart-rate (Roger & Jamieson, 1988) and physiological (cortisol) recovery (Roger & Najarian, 1998).

The *Toronto Alexithymia Scale* is a 20-item, self-report measure that is broken down into three subscales: difficulty identifying feelings (seven items), difficulty describing feelings (five items), and externally-oriented thinking (eight items) (Bagby *et al*., 1994b; Taylor, 2000). Difficulty identifying and describing subscales were combined, due to their high correlation ($r = 0.66$ present sample) and evidence that they tend to predict similar aspects of outcome variance (Ciarrochi *et al*., 2003). The

Toronto Alexithymia Scale (TAS-20) is one of the most commonly used measures of this construct and has been shown to be related to a number of important life outcomes. For example, people high in alexithymia are more prone to drug addiction, eating disorders, and experiencing physical symptoms (Taylor, 2000). The scale predicts the ability to process and manage emotional states and the ability to recognise faces (Taylor & Taylor, 1997). Consistent with past research, externally-oriented thinking was found to be somewhat unreliable and not related to well-being (Ciarrochi *et al*., 2003). It was thus excluded from further discussion.

Well-being

Depression, anxiety and stress. Participants were asked to describe how they felt in the past month. The Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995) consists of three 14-item scales. The DASS is used in increasingly diverse settings, in part because it is in the public domain and free to use (Crawford & Henry, 2003). The scale was originally designed to maximally discriminate between anxiety (example items: 'I was aware of dryness in my mouth', and 'I experienced trembling') and depression (example items: 'I felt sad and depressed', and 'I just couldn't seem to get going'; Lovibond & Lovibond, 1995). During scale development a third factor emerged that was characterised by chronic, nonspecific arousal, or 'stress' (example items: 'I found myself getting upset about quite trivial things', and 'I found it difficult to relax'). The scale has been shown to possess adequate convergent and discriminant validity (Crawford & Henry, 2003; Lovibond & Lovibond, 1995)

Positive affect. The joviality subscale of the *PANAS-X* scale (Watson & Clark, 1994) was used to assess positive mood ('happy, joyful' $\alpha = 0.95$). The PANAS subscales have been shown to be reliable, discriminate between positive and negative affect, to relate to peer ratings of affect, and to relate in expected ways to temperament (Watson & Clark, 1994).

Results

The three Time 1 measures of emotional competence correlated significantly with all of Time 1 measures of well-being (ps < 0.01), with only one exception (Time 1 difficulty identifying/describing emotions did not correlate significantly with Time 1 positive affect). The correlations between Time 1 measures of emotional competence and Time 2 measures of well-being are presented in the bottom half of Table 1. All Time 1 measures were correlated in the expected direction with Time 2 well-being 1 year later. Higher competence at Time 1 was associated with greater well-being at Time 2. The alpha reliabilities for Time 1 are presented along the diagonal of Table 1.

TABLE 1. Evaluation of the longitudinal relation between emotional competence and emotional well-being (correlations, means, and standard deviations, with alpha reliabilities on the diagonal in parentheses).

	1	2	3	4	5	6	7
Time 1							
1. Effective problem orientation	(0.83)						
2. Difficulty identifying/ describing emotion	−0.47	(0.86)					
3. Rumination	−0.38	0.39	(0.77)				
Time 2							
4. Positive affect	0.38	−0.35	−0.29	(0.95)			
5. Anxiety	−0.42	0.46	0.31	−0.47	(0.89)		
6. Depression	−0.35	0.25	0.24	−0.67	0.61	(0.95)	
7. Stress	−0.44	0.30	0.30	−0.51	0.76	0.71	(0.92)
M	2.52	29.83	1.49	3.64	0.50	0.59	1.04
SD	0.77	9.5	0.23	0.83	0.51	0.59	0.63

Note: all correlations significant $p < 0.01$

We next performed regression analyses to evaluate the extent that each emotional competence variable predicted changes in Time 2 well-being. The first predictor variable entered into the equation was participants' scores on the same measure of well-being at Time 1. This was done to control for effects of well-being at Time 1 and to examine the relationships between the emotional competence variables and changes in well-being levels from year 1 to year 2 (Finkel, 1995; Nolen-Hoeksema *et al*., 1997). The second predictor variable entered into the equation was the Time 1 measure of emotional competence.

As can be seen in Table 2, people who had an effective problem orientation were less likely to be experiencing depression, anxiety and stress 1 year later, and were more likely to experience positive moods. People who had difficulty identifying and describing emotions were more likely to experience anxiety and less likely to experience positive mood 1 year later. Finally, people who tend to ruminate were less likely to experience positive mood 1 year later.

Finally, given the intercorrelations between the EC variables, we sought to evaluate the extent to which each EC variable predicted unique variance in Time 2 well-being in order to comment on possible redundancy of the measures. We used a series of regression analyses to examine the extent that each emotional competence variable predicted variance after controlling for Time 1 well-being and the other significant emotional competence variables (see Table 2). Both effective problem orientation and difficulty identifying/describing emotions were significant and unique predictors of anxiety (ps < 0.05). Effective orientation was the only unique predictor of stress. Finally, the only unique predictor of positive affect appeared to be rumination, $\beta = -0.29$, $p = 0.05$ (one-tailed).

TABLE 2. Summary of regression analyses for Time 1 variables predicting Time 2 emotional well−being.

Variable	B	SE B	β	ΔR^2
	Time 2 anxiety			
Time 1 anxiety[a]	0.53	0.06	0.58	0.426***
Effective problem orientation	−0.13	0.04	−0.20	0.035***
Difficulty identifying/ describing emotion	0.01	0.003	0.22	0.040***
Rumination tendency	0.17	0.14	0.08	0.005
	Time 2 stress			
Time 1 stress[a]	0.58	0.06	0.58	0.340***
Effective problem orientation	−0.20	0.05	−0.25	0.050***
Difficulty identifying/ describing emotion	0.01	0.01	0.08	0.005
Rumination	0.16	0.19	0.06	0.003
	Time 2 depression			
Time 1 depression[a]	0.61	0.07	0.57	0.325***
Effective problem orientation	−0.09	0.05	−0.12	0.011*
Difficulty identifying/ describing emotion	−0.003	0.004	−0.05	0.002
Rumination	0.20	0.17	0.08	0.005
	Time 2 positive mood			
Time 1 positive mood[a]	0.40	0.16	0.32	0.167***
Effective problem orientation	0.24	0.13	0.24	0.047*
Difficulty identifying/ describing emotion	−0.03	0.01	−0.28	0.073*
Rumination tendency	−1.24	0.43	−0.35	0.111**

*$p < 0.05$ (one-tailed); **$p < 0.01$ (one-tailed); ***$p < 0.001$ (one-tailed).

[a]Time 1 emotional states were entered in step 1. Effective problem orientation, difficulty identifying emotion, and rumination tendency were entered separately in step 2.

Discussion

As predicted, ineffective problem orientation, difficulty identifying and describing emotions, and rumination significantly predicted well-being 1 year later, after controlling for baseline measures of well-being. This finding suggests that low levels of emotional competence preceded decreases in well-being, rather than merely co-occurring with it. Importantly, we found evidence that the three main emotional competence variables predicted unique variance in aspects of well-being (i.e. variance not predicted by other variables).

Our findings involving rumination replicate and extend those of Nolen-Hoeksema and colleagues (Nolen-Hoeksema *et al*., 1994, 1997). Our research confirms that rumination is associated with decreases in positive affect (Nolen-Hoeksema *et al*., 1997). Also, although not significant, the magnitude of the rumination–depression link in our study was approximately the same as that previously observed (Nolen-Hoeksema *et al*., 1999). However, other research has also found this link to be nonsignificant in a longitudinal design (Nolen-Hoeksema *et al*., 1997). The strongest effect appears to be for positive affect. Our findings suggest that rumination predicts unique variance in positive affect more reliably than a range of other competence variables.

Effective problem orientation predicted depression, anxiety and stress, even after controlling Time 1 measures of these outcomes. This finding is consistent with research that shows that experimentally reducing effective orientation leads to increases in worrying (Davey *et al*., 1996). Our study goes beyond the Davey *et al*. (1996) study in showing that pre-existing individual differences in problem orientation are linked to decreases in well-being 1 year later.

Difficulty identifying and describing emotions (the central components of alexithymia) predicted increases in anxiety and decreases in positive mood. Past research has found that alexithymia predicts mortality by any cause over 5 years, independently of other well-known risk factors (Kauhanen *et al*., 1996). It is possible that increased anxiety and decreased positive affect may mediate the relationship between alexithymia and mortality. Future research should evaluate this possibility.

Our research indicates that some aspects of emotional competence are more unique predictors of one aspect of emotional well-being than another. Effective problem orientation and difficulty identifying emotions are predictors of anxiety. In contrast, only effective orientation predicts stress uniquely (i.e. predicts when controlling for the other significant competence variables). Only rumination was a unique predictor of positive affect. These data may be helpful in constraining future theorising and in clinical practice. It suggests that not each aspect of EC was equally useful in predicting each type of affective state. Thus, theories of EC and well-being may need to focus on specific affective states, rather than on affect in general.

Emotional competence variables are often considered to be the mediators of change in counselling interventions. For example, a counsellor may seek to improve problem orientation (D'Zurilla & Nezu, 1999), and improved problem orientation (the mediator) may lead to increases in positive affect and decreases in depression. One argument against this mediator model is that the so-called mediators may be an actual part of well-being. For example, perhaps depression and poor problem orientation are so inexorably linked as to be part of the same thing (e.g. depression). We examined the impact of Time 1 emotional competence when controlling for Time 1 well-being. If the two variable types were redundant, then emotional competence would not be expected to predict anything after controlling for Time 1 well-being. However, this study found that Time 1 emotional competence predicted variance in Time 2 well-being over and above Time 1 well-being. Thus, the two measure types do not appear to reflect the same latent variable.

A number of competence variables were not useful in this longitudinal study and have not been found to have direct links to well-being in past cross-sectional research (Ciarrochi *et al*., 2003). For example, aggression control and benign control (low impulsivity) did not directly predict well-being. Even so, it is possible that these variables have an indirect influence on well-being. Two separate studies have found that benign control is associated with higher suicidal ideation, but only amongst those who are experiencing stressful life events (Ciarrochi *et al*., 2003). Thus, the effect of benign control appears to be moderated by stressful life events. Future research should investigate this relationship in a longitudinal study.

Implications for counselling practice

These brief competence measures can be useful in guiding counselling practice. They may be given at client intake to identify what the client may be struggling with, and they can be administered throughout the counselling intervention to evaluate progress. For example, if a client has difficulty identifying emotions, then the initial part of therapy can focus on developing an emotion vocabulary with the client. The present research suggests that if counsellors can improve a client's ability to identify emotions, then the client will be less likely to experience high levels of distress in the future.

Our research also suggests that the type of competence a counsellor should target may depend on the type of emotional distress the client presents with. For example, if a client is experiencing global stress, then one reason for this may be that they are viewing their personal problems as 'threats' that must be avoided. The counsellor can help these clients to accept that problems are a natural part of life, and then help them to confront the problems rather than avoiding them (Hayes *et al*., 1999).

If a client is experiencing low levels of positive affect, then rumination may be a key variable. Rumination involves an excessive focus on the past or the future, while the present goes unnoticed (Brown & Ryan, 2003). It may be that as clients become absorbed in their aversive rumination, they become less sensitive to the contingencies of reinforcement in the present moment (Brown & Ryan, 2003; Hayes *et al*., 1999; Segal *et al*., 2002). Thus, they lose contact with the very things that might bring them joy. One possible intervention is to help them become more mindful of the present moment (Segal *et al*., 2002).

Limitations and future directions

Our research focused on first year university students who continued on to second year, and therefore may be limited in generalisability. The sample also consisted largely of women and future research should pursue a more balanced sample. In addition, the sample size was somewhat small for the analyses involving changes in positive affect ($n = 56$). Thus, there is a need to attempt to replicate this finding. It will also be important for future research to examine whether or not these findings

generalise to other populations. However, it is important to note that the conclusions of the paper are not based on mean levels of well-being, which would be likely to be quite different in different populations. Rather, they are based on the unique variance predicted by each measure. The study establishes that the variables can offer unique predictive power. Future research is needed to establish the extent that they offer unique predictive power in different populations.

In sum, effective problem orientation, alexithymia, and rumination all appear to predict changes in aspects of well-being 1 year later. Past research has repeatedly shown that these variables are important correlates of well-being. Our research suggests that despite the intercorrelations between these variables, they do not appear to be redundant with each other. As such, it would seem worthwhile to conduct future causal research that seeks to directly modify each of the variables and evaluate whether changes in these variables lead to improvements in well-being. It would also seem worthwhile for counsellors to use these three brief measures in their practice, in order to better understand their clients' strengths and weaknesses.

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