SOCIAL IDENTITY AND MENTAL HEALTH: GROUP MEMBERSHIP AS A BUFFER FOR STRESS IN UNIVERSITY

by

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Abstract

The quality and quantity of one's social identities may determine whether they benefit from group membership. Study 1 examined whether having multiple identities was related to positive psychological well-being, and whether this was further related to buffering stress. Carleton University undergraduate students (N = 455) completed an online questionnaire assessing depressive and anxiety symptoms, coping style, cognitive flexibility, loneliness, optimism, self-esteem, and quantity of group memberships. Connectedness was related to lower depressive and anxiety symptoms, an increased ability to deal with stressors, and positive self-appraisals. These stress-buffering factors mediated the relationship between connectedness and psychological well-being. Study 2 examined whether certain identities differed in perceived support and identification. Carleton undergraduate students (N = 373) completed an online questionnaire assessing these factors with regard to their primary identity. Significant differences in support and identification were found across identity types that was also related to the relationship between membership and psychological well-being.

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Introduction

For many, the transition from high school to university represents a major life event that can be especially challenging. Students are faced with increased responsibilities and, as many move away from home for the first time, they have less access to established support systems. Although failure to adjust to this new environment can negatively impact academic performance, it can also have important consequences for students' psychological well-being (Lefkowitz, 2005). In this regard, rising stress levels and a disproportionately high prevalence of mood disorders in students have highlighted the need to identify resilience factors (Adlaf et al., 2001; Sax, 1997; Webb et al., 1996). One such factor may be the development of a strong social identity, represented by the quantity and quality of social ties held by an individual.

Several lines of research suggest that group membership may buffer psychological distress by providing support, reducing loneliness, and fostering self-esteem (Bisschop et al., 2004; Friedlander et al., 2007; Hays et al., 2014; Haslam et al., 2005). Additionally, strong social integration may enhance individual flexibility in attention and coping that may confer psychological benefit (Fontana et al., 1989; Holahan et al., 1999). However, these advantages may be contingent on characteristics of the group. For instance, group-related resilience against depression and anxiety in student populations likely depends on whether the group characteristically promotes stress-buffering factors, such as increased flexibility, self-esteem, and optimism, and decreased loneliness. Another likely factor is how an individual chooses to empower their relative identities. Specifically, aspects of cognitive salience, psychological bond, or the

emotional evaluation of a group may predict how individuals endorse and utilize their identities.

Given these dynamics, the present investigation examined whether undergraduate students received psychological benefit from their identities, and how this occurred, by examining the quantity and quality of their social identities. The first study (1) examined whether having multiple social identities was beneficial for psychological well-being, (2) determined which stress-buffering traits were associated with having multiple identities (e.g. cognitive flexibility, coping style, and greater appraisals of: loneliness, self-esteem, and optimism), and (3) assessed whether the relationship between a strong social identity (represented by multiple group memberships) and psychological well-being was mediated by those stress-buffering traits. The second study (4) investigated whether different types of identities differed in terms of perceived support and unsupport, level of identification, and collective self-esteem, (5) determined whether those differences in identification (overall and collective self-esteem) depended upon perceived levels of support, and (6) determined whether this relationship predicted differences in conferred psychological benefit across groups.

Group Membership and Social Identity

Being a member of a group traditionally conferred advantages such as physical protection and a greater access to material resources. Group membership is also a valuable construct that individuals use to define and evaluate themselves compared to others (Jenkins, 2014). These comparisons form the basis of an individual's social identity, which also comprises the emotional significance that one attaches to their memberships (Tajfel, 1974). Having a strong social identity reinforces an individual's

self-worth and provides clarity in ambiguous social contexts (Hogg & Abrams, 1993; Tajfel & Turner, 1979). Motivation for forming these bonds is driven by an innate tension created by opposing needs for differentiation and assimilation (Brewer, 1991; Brewer, 2003). In this way, people pursue social inclusion to avoid feeling overly stigmatized, while also valuing individuality so as to distinguish themselves from others (Leary & Tangney, 2003). Connectedness is also motivated by emotional consequence, as forming bonds is associated with positive affect, whereas broken or threatened bonds are associated with negative affect (Baumeister & Leary, 1995; Brewer, 1991).

Beyond contributing to a strong social identity, group membership has many other recognizable benefits. Despite significant variation in social norms, decreased integration has been associated with increased mortality and disease incidence across several different cultures and time-periods (Liu, 2011; Seeman, 1996; Kaplan et al., 1988; Welin et al., 1985). Additionally, psychological distress is often reduced in those with an increased number of memberships (Rietschlin, 1998). This may occur by a number of pathways, as membership is also associated with reduced depression, improved self-esteem, and increased happiness and satisfaction with life (Brown et al., 1992; Elison, 1991; Gecas & Burke, 1995). However, these benefits may not be inherent to group membership. Among hospital patients, social identification with family significantly predicted stress, self-esteem, and satisfaction with life, though importantly, this relationship was mediated by perceived levels of social support (Haslam et al., 2005). Similarly, identification with a workgroup predicted less burnout and greater job satisfaction, and this relationship was also mediated by perceptions of in-group support (Haslam et al., 2005). In this way, the relationship between intimate ties and depressive

resilience may depend on dimensions of support (Broadhead et al., 1983; George, 1989). Thus, it is likely that both the quantity and quality of social ties influence how individuals receive benefit from group membership.

Social identity is comprised of three components: centrality (the amount of time spent thinking about being an in-group member), in-group affect (the positive feelings associated with membership), and in-group ties (perceptions of similarity, bond, and belongingness with other members) (Cameron, 2004). Evaluation based on these dimensions is useful for predicting how and why individuals interact within and across their social groups (Spears et al., 1999).

Centrality is often described as the cognitive salience of a social categorization for the individual that holds it. As it is common to hold membership in multiple groups over a lifetime, it is likely that each group will not be as psychologically meaningful as the next (Deaux et al., 1995). For example, a university student who is raised as a member of a religious group may identify as a student, but it is likely that their religion is more important in defining who they are. These identities are also subject to change. Later in life, if that person is no longer a student and chooses to move away from their religious beliefs, they may shed both of these identities and instead choose to identify with parenthood, an occupation, or a special interest group. The shifting significance of social groups plays an important role in determining how an individual perceives and acts in social situations (Oakes, 1987). Generally, if an identity is more central, it will likely have greater influence on a person's well-being.

In-group affect is the emotional evaluation of a group membership or identity. In establishing an identity, individuals make intergroup comparisons that reflect the group's

overall value, as well as their value as a member. When an evaluation is negative, individuals are motivated to try to improve their standing by engaging in more favorable comparisons, leaving the group, or challenging the group's order (Tajfel, 1974; Tajfel & Turner, 1979). These assessments underlie how and why individuals interact with groups, and may help to explain the relative centrality of certain identities. The concept of in-group affect often overlaps with that of collective self-esteem, that is typically organized through four sub-factors: membership self-esteem (perceived worthiness as a member), private collective self-esteem (subjective evaluation of the group), public collective self-esteem (perceptions of how others see the group), and identity (the importance of the group to one's self-concept) (Luhtanen & Crocker, 1992).

In-group ties refer to the psychological bonds that one feels with their groups (or its members), also referred to as 'emotional closeness' (Cameron, 2004). For members to feel like they belong to a social group, it is important for them to share a common bond or act in a way that is in accordance with individual values (Turner, 2010). It is not a prerequisite for members to be of a uniform belief, but such consonance may affect the centrality and affective evaluation of an identity (Baumeister & Leary, 1995; Spears et al., 1999).

The overall level of identification with a group is typically represented by the aggregate strength of these three factors. Such identification is often highest with pervasive social categories, such as those based on gender, race, level of education, or socioeconomic status (Cameron, 2004). Although broad identities significantly guide individual perceptions and behavior, ties within these larger sets are also of interest for a complete understanding of how individuals are influenced socially. For instance, as

college enrollment continues to grow, simply being a student may not be an impactful identifier for many young adults. Instead, significant influence is likely to arise from specific identities that are empowered during this period, such as those from social clubs, interest groups, recreational activities, workgroups, or religious groups.

Depression and Anxiety

Major depressive disorder (MDD) is characterized by a depressed mood or anhedonia that is often accompanied by neurovegetative symptoms (e.g. disturbed sleep, appetite, and concentration), and that causes significant distress and impairment in social, occupational, or other important areas of functioning (American Psychiatric Association [DSM-V], 2013). The lifetime prevalence of MDD in Canadians is 11.3%, with females at a higher risk (5.8%) than males (3.6%) (Pearson et al., 2013). Of note, MDD rates are highest among Canadian youth aged 15 to 24 (Pearson et al., 2013).

Individuals with subsyndromal depressive symptoms also face significant psychosocial and occupational impairment, and are at an increased risk for developing MDD (Judd et al., 1994; Sadek & Bona, 2000). Depressive episodes are recurrent in more than 50% of those who experience them, with risk of future recurrence being as high as 90% after multiple episodes (Burcasa & Iacono, 2007; Kupfer et al., 1992; Spaner et al., 1994). Suicide is a major consequence of depression as 10-15% of MDD patients die by suicide, and depressive symptoms have been noted in the majority of suicides, with much higher rates among adolescents (76%) (Henriksson et al., 1993; Möller, 2003; Shafii et al., 1988). Subsyndromal and major depression also represent a significant economic burden due to growing costs associated with medical care, premature death, and impaired workplace productivity (Cuijpers et al., 2007; Greenberg et al., 1990). Given these issues,

the early diagnosis and treatment of depression as a chronic illness has gained considerable attention over the last two decades (Elkin et al., 1989; Goldman et al., 1999).

The diagnosis of depression is often complicated by an overlap in symptoms with anxiety disorders that are highly comorbid (Belzer & Schneier, 2004; Glassman, 1993; Nguyen et al., 2004). In Canada, the lifetime prevalence of GAD is 8.7%, with females at a higher risk (3.2%) than males (2.0%), and 52.5% of patients also meeting the diagnostic criteria for MDD (Pearson et al., 2013). Comorbid individuals also face an increased risk as they tend to be younger during the first episode and have an earlier age of onset than those with major depression alone (Fava et al., 2000; Moffitt et al., 2007). Importantly, these disorders may be largely undiagnosed in student populations, as it is estimated that as many as 35% of undergraduate students are affected by subsyndromal anxiety and depression, with 30% reporting significantly higher distress than the general population (Adlaf et al., 2001; Webb et al., 1996).

Stress, Depression, and Anxiety

The experience of stressful life events has been repeatedly associated with an increased risk for developing depression (Hammen, 2005; Kendler et al., 1999; Kessler, 1997; Mazure, 1998) and linked to the recurrence and exacerbation of depressive symptoms (Burcasa & Iacono, 2007; Monroe et al., 1996). In fact, it is estimated that significant life stressors are 2.5 times more likely in depressed patients, as well as in community samples, and that 80% of depressive episodes are preceded by major life events (Mazure, 1998). Although these findings implicate a causal role for stress in psychopathology, the relationship is likely bidirectional (Juster et al., 2011).

An important distinction in the stress-depression relationship is that between independent events (i.e., those that are beyond an individual's control, such as the death of a loved one), and dependent events (i.e., those that are occur due to an individual's characteristics or behaviors, such as choosing to engage in an argument). The stress generation model of depression posits that, although independent life stressors affect vulnerability to depression, it also seems that vulnerable individuals are more likely to experience a higher rate of stressful dependent events (Hammen, 1991; Liu & Alloy, 2010). In support of this, interpersonal stressors, which are often dependent in nature, seem to be the most predictive of depressive symptomatology (Kendler et al., 1995; Tennant, 2002). Specifically, interpersonal loss or threatened-loss events (e.g. bereavement or divorce) are especially predictive of later depressive episodes (Paykel & Cooper, 1992; Paykel, 2003). Similarly, experiencing stress from perceived danger or the threat of danger may be a causal agent in the onset of anxiety states, whereas mixed depressive/anxiety states may be due to the experience of both loss and danger (Finlay-Jones & Brown, 1981). Given the vast cognitive and emotional spectrum by which people experience stressful events, this concept of loss can include loss of self-esteem, role loss, or loss of cherished ideas (Brown et al., 1995).

Chronic stress from ongoing adversity, such as poverty, medical ailments, or lasting marital discord has also been associated with risk for depression, and may be a stronger predictor than acute events (Brown & Harris, 1978; Bruce & Hoff, 1994; Dohrenwend et al., 1992; McGonagle & Kessler, 1990). Although these stressors often comprise the presence of some external pressure (e.g. a burdensome workload), they can also arise from the deficiencies of intimate relationships, friendships, finances, or health

factors (Hammen, 2005). For example, a chronic lack of social support constitutes a stressful condition that has repeatedly been associated with depression (Cairney et al., 2003; Paykel & Cooper, 1992). Similarly, loneliness seems to share a reciprocal influence with depressive symptomatology (Cacioppo et al., 2005). Further, lonely individuals do not differ in the frequency or type of activities that they engage in as compared to non-lonely individuals, but may be more reactive to stressful events (Cacioppo et al., 2000; Hawkley et al., 2003). Additionally, social support may mediate the relationship between loneliness and perceived stress, suggesting that depressive susceptibility may be influenced by a functional interaction between different stressors (Brown & Harris, 1978; Hawkley et al., 2003).

Repetitive or long-lasting stressors may cumulatively impact depressive susceptibility through the continual activation of allostatic processes (physiological or behavioral changes that rapidly occur to maintain homeostasis), thereby creating an excessive load on biological systems (McEwen, 2000). In fact, chronic activation of the typically adaptive stress response has been associated with damage to biological correlates of emotional regulation that underlie depressive pathology (McEwen, 1998, 2003; Radley & Morrison, 2005). Still, individual differences in susceptibility suggest that the experience of stressors may not solely account for depressive psychopathology. To this point, it seems that stressors must interact with individual vulnerabilities, genetic or otherwise, in order to provoke a disorder (Monroe & Simons, 1991). For instance, although a lack of social support may render an individual vulnerable, it is unlikely to contribute to a pathological outcome in the absence of a negative event (i.e., a stressor) (Abrahamson et al., 1989; Lewinsohn et al., 2001). In non-clinical samples, it is

recognized that interactions with particular genetic factors, or those between several psychosocial factors, may promote subsyndromal depressive or anxiety states that can lead to the onset and recurrence of mood disorders (Alloy et al., 1999; Luten et al., 1997).

Appraisal and Coping

Appraisal. Appraisal is the cognitive process through which an individual evaluates whether a particular event or circumstance is relevant to their well-being (Lazarus & Folkman, 1984). This provides context for potentially stressful person-environment transactions and accounts for why a particular situation may be stressful for one person, but not another (Folkman, 1984; Hojat et al., 2003). Two types of appraisal, primary and secondary, interact for this evaluation and also guide subsequent emotional reactions (Kuppens & van Mechelen, 2007). In primary appraisal, an individual evaluates whether they have anything at stake in a transaction (e.g. is there potential for this to harm my self-esteem?) (Folkman et al., 1986). This results in a preliminary classification of circumstances as positive, benign, or stressful, where those perceived as stressful can subsequently be considered in terms of harm (or loss) for past events, and threat versus challenge for anticipated events (Peacock & Wong, 1990). Secondary appraisal involves an assessment about what, if anything, can be done about a situation (Folkman et al., 1986). Specifically, coping options are evaluated with regard for whether one's resources are adequate to meet situational demands (e.g. can I change this situation or get help?) (Folkman et al., 1986; Lazarus & Folkman, 1984).

Although appraisals reflect cognitions informed by the situation aspects of potentially-threatening events, they are also influenced by personal dispositions. In fact, global traits such as optimism (Carver & Scheier, 2002), hopelessness (Beck et al., 1974),

and neuroticism (Bolger & Zuckerman, 1995) seem to be related to appraisal patterns, whereby individuals tend to perceive events similarly across different situations (Scherer & Drumheller, 1992; van Reekum & Scherer, 1997). In this way, appraisals are relational. That is, they are not simply informed by situational or dispositional characteristics, but rather are based on the implications of an event for a person's well-being *in relation* to that person's configuration of needs, goals, resources, and abilities (Roseman & Smith, 2001; Smith & Kirby, 2009).

Coping. Once an event is appraised as stressful, individuals engage in coping methods that comprise cognitive and behavioral efforts to manage the physical, emotional, and psychological consequences of stressful events (Lazarus & Folkman, 1984; Snyder, 1999). Coping strategies are often categorized, as problem-focused or emotion-focused, based on their function (Folkman & Lazarus, 1984). Problem-focused coping involves actively changing the situation causing distress (e.g. by problem-solving, cognitive restructuring, or active distraction), whereas emotion-focused strategies serve to regulate negative emotions that may arise from stress (e.g. by rumination, emotional expression, or blame) (Folkman et al., 1986; Peacock & Wong, 1990). Importantly, these are not mutually exclusive, as certain situations warrant the concerted effort of both problem- and emotion-focused strategies (Folkman & Lazarus, 1980).

An important factor related to the effectiveness of certain strategies is the distinction between engagement coping, where efforts are intended to deal with the stressor directly (e.g. by problem-solving) or indirectly (e.g. through emotional regulation), and avoidance coping, where efforts serve to escape from having to deal with a stressor (e.g. through denial) (Friedman & Silver, 2007; Moos & Schaefer, 1993).

Avoidance coping is generally considered ineffective as it involves ignoring the existence and eventual impact of a stressor, which often leads to an amplification of consequences (Friedman & Silver, 2007). Given that avoidant strategies center on escaping feeling of distress, they are often emotion-focused. However, many emotion-focused strategies involve engagement with the stressor, and therefore are not characteristically ineffective (Carver, 1989; Friedman & Silver, 2007).

The effectiveness of endorsing a particular coping strategy is further dependent on its adaptive usefulness for a specific circumstance (Carver et al., 1989; Folkman, 1984). For instance, problem-focused strategies seem to be more useful in events that can be changed or controlled, whereas it may be more advantageous to regulate emotion in an event that is persistent or uncontrollable (Billings & Moos, 1981; Folkman & Lazarus, 1980). In this way, coping strategies are informed by the situational aspects of potentially-stressful events, and may change over time (Tennen et al., 2000). Additionally, since strategies are often used in conjunction with one another, effectiveness may depend on the product of their interplay (Tennen et al., 2000). Therefore, it may be valuable to consider an individual's full coping profile, or style of coping, to understand the efficacy of a particular strategy (Matheson & Anisman, 2003).

Appraisal, Coping, and Emotion

Dispositional appraisals influence the expression of emotion through event-specific coping expectancies that direct whether stressors are perceived as threatening (i.e., anxious and fearful) or challenging (i.e., anxious and exciting) (Skinner & Brewer, 2002). Threat appraisals are associated with perceptions of danger to one's well-being or self-esteem, and may represent a cognitive vulnerability that precedes negative emotion

(Lazarus, 1991; Smith & Kirby, 2009). As such, threat-oriented individuals consistently experience anxiety in stressful encounters that can lead to an anticipation of failure and a negative evaluation of self-worth (Skinner & Brewer, 2002). Conversely, challenge appraisals are associated with focusing on opportunities for success, social rewards, and personal growth that may be related to positive emotional outcomes (Lazarus, 1991). Consistent challenge appraisals also contribute to higher coping expectancies, lower subjective stress, and an increase in positive self-evaluation (Lazarus, 1991; Skinner & Brewer, 2002). Additionally, personality traits influence the endorsement of coping strategies, which in turn, can lead to differential stress outcomes (Bolger, 1990; Carver et al., 1993). For instance, resilient individuals (e.g. those who are optimistic, have high self-esteem, and are less lonely) often tend towards active coping mechanisms (e.g. seeking support, adopting a fighting spirit, or reframing the situation) when dealing with stressors (Moos & Schaefer, 1993). It is thought that stress susceptibility is likely related to the reciprocal relationship between an individuals' appraisal style (that includes perceptions about coping feasibility) and style of coping (Carver et al., 1993).

Negative Appraisal Style, Coping, and Depression

Although coping efforts serve to manage the demands of stressful situations, the endorsement of particular strategies is largely influenced by the convergence of personal and situational factors that inform appraisals (Folkman & Lazarus, 1984). As such, the emotional consequences of stressor exposure may be the product of negative appraisals favoring the endorsement of inappropriate or ineffective coping strategies. In support of this, individuals who tend towards appraisals of events as threatening, uncontrollable, or hopeless show the poorest adjustment to potentially stressful events (Power & Hill,

2010). Further, excessive use of emotion-focused strategies, including emotional containment (Ravindran et al., 2002), rumination (Nolen-Hoeksema, 1998), and social support-seeking (Holahan et al., 1999) has been linked to depressive outcomes. In this case, individuals who perceive their coping resources to be inadequate, and also tend towards negative appraisals, may be likely to over-rely on emotion-focused or avoidant strategies at the expense of more effective methods. This bias thus represents a vulnerability with which stress may interact to provoke or exacerbate a depressive mood state (Anisman & Matheson, 2003; Nolen-Hoeksema, 1998).

Positive Emotion and Cognitive Flexibility

Individuals who are resilient to stress often display high positive emotionality and remain optimistic about resolving potentially threatening situations (Block & Kremen, 1996; Klohnen, 1996). Optimism has also been associated with anti-depressant outcomes, including greater life satisfaction and increased psychological well-being (Affleck & Tennen, 1996; Carver & Scheier, 2002). This is attributed to positive affect serving an adaptive role in the stress response by replenishing resources, providing a respite, and supporting coping efforts (Folkman & Moskowitz, 2000). Additionally, positive emotions serve to broaden attentional focus to rely on creativity, exploration, and flexibility in thinking (Folkman & Moskowitz, 2000). This process favors improving one's capacity for dealing with stress by adopting positive reappraisals, engaging in goal-directed coping strategies, and infusing ambiguous events with meaning (Southwick et al., 2005).

Effective coping requires an individual to be cognitively flexible, exhibiting awareness of what a situation requires and being able to organize and prioritize strategies that fit that situation (Kashdan & Rottenberg, 2010). Essential to this is executive control,

which allows a person to regulate shifts in attention that are critical for goal-directed behavior (Goldberg, 2001). The absence of such control, as seen with those who over-rely on rumination and worry in stressful situations, may represent a cognitive rigidity that increases susceptibility to pathological outcomes over time (Nolen-Hoeksema et al., 2008). In the same way, when stressor appraisals are accompanied by biased thinking patterns and an activation of negative memories, negative emotional outcomes may result (Gotlib & Joorman, 2010).

Coping flexibility is similarly important to effectively modify coping behaviors according to ongoing reappraisals of stressful situations (Lazarus, 2006). These reappraisals are based on the changing availability of coping resources as well as perceptions of situational control. Importantly, while particular coping strategies can be more useful than others, the ability to modify the stress response is of greater importance for positive outcomes (Cheng, 2003). As such, resilient individuals tend to reappraise potentially stressful events in less-threatening terms, while also remaining optimistic about coping abilities (Southwick et al., 2005; Tugade, 2010). In support of this, increased flexibility during early phase treatment of anxiety sufferers was associated with reduced distress and impairment during later sessions (Dalrymple & Herbert, 2007). Similarly, depression, anxiety, and distress were reduced among flexible individuals who appropriately matched the appraised controllability of stressful situations to effective coping strategies (Kato, 2012). Together, these findings suggest that susceptibility to stress is determined not only by how individuals appraise and cope with events, but also their willingness to adapt these strategies to changing circumstances.

University, Stress, and Social Identity

As previously mentioned, university life represents a chronic stressor that has been linked to a disproportionately high prevalence of mood and anxiety disorders in students (Adlaf et al., 2001; Lefkowitz, 2005; Pritchard & Wilson, 2003; Webb et al., 1996). This is largely attributable to excessive study demands that provoke "burnout", or mental exhaustion, that is often accompanied by feelings of incompetence and detachment (Scaufeli et al., 2002). This period is also one of heightened vulnerability, as many students leave home for the first time and are less able to rely on established support systems that may buffer stress (Tao et al., 2000). Becoming involved in campus organizations may counter such burnout by promoting meaningful engagement, while also providing an opportunity for students to develop networks that provide support and bolster self-esteem (Friedlander et al., 2007). Indeed, increased extra-curricular involvement seems to predict better personal and emotional adjustment to the challenges of university (Friedlander et al., 2007; Kantanis, 2000; Krause & Coates, 2008; Pritchard & Wilson, 2003). However, a corollary might be that well-adjusted, cognitively flexible, or generally positive individuals are more likely to engage in social behaviors. In this regard, the buffering effect of such involvement may depend on characteristics of the group, its members, or both.

Rich social networks may enhance mental health by fostering effective coping strategies (Holahan et al., 1999), encouraging positive appraisals (Fontana et al., 1989), counter-acting loneliness (Bisschop et al., 2004), increasing feelings of self-efficacy (Hays et al., 2014), and reducing engagement in high-risk behaviors (Rozanski et al., 1999). However, these benefits may not be inherent to all university groups. For instance, although student alcohol use increases the risk for mood or anxiety disorders by 50%,

some groups actively promote drinking (Dawson, 2004). Also, while fraternities and sororities have been related to increased academic performance (Schrager, 1986), and religious groups to overall adjustment (Salsman et al., 2005), some honors societies may contribute to low self-esteem through a lack of social support (Day, 1989). These effects may also depend on how students identify and interact with their groups (e.g. in terms of centrality, in-group ties, and in-group affect). For instance, identities become more salient (or "activated") following a rejection experience so that individuals can reap the social and psychological benefits of group membership. However, while rejection may activate many different in-group identities, only those that are individually meaningful seem to serve as a protective resource (Knowles & Gardner, 2008). Much in the same way, while group membership may be useful in dealing with distress, it may be that only meaningful identities impact susceptibility.

Given these findings, the present studies examined the influence of social identity on depression and anxiety symptoms and the processes through which social identity might favor positive psychological well-being.

Study 1: The Relationship between Multiple Identities, Flexibility in Dealing with Stressors, and Psychological Well-Being

Although membership in a social group has been associated with positive mental health outcomes, it is not entirely clear how this occurs (Bisschop et al., 2004; Fontana et al., 1989; Holahan et al., 1999; Knowles & Gardner, 2008). Given that stressful events have often been associated with depressive and anxiety symptomatology, it may be that individuals with multiple identities are more effective at dealing with stressful situations. Specifically, they may be more flexible, or endorse better coping strategies, and thus,

exhibit lower symptoms of depression and anxiety. Additionally, these groups may reduce loneliness, foster self-esteem, and improve optimism in their members, which may protect against risk for psychopathology. With this in mind, it was hypothesized that individuals with multiple social identities would be more flexible in dealing with stressors than those with fewer identities, as characterized by greater cognitive flexibility, the endorsement of effective coping strategies, and better self-appraisals (increased self-esteem and optimism, decreased loneliness). Further, it was predicted that this flexibility would, in turn, be associated with better psychological well-being, reflected by lower depressive and anxiety symptoms.

Methods

Participants and Procedure

Undergraduate males (n = 102, M_{age} = 20.9, SD = 3.6) and females (n = 353, M_{age} = 20, SD = 3) were recruited through Carleton's online psychological research system (SONA), and also through direct correspondence with campus organizations (Appendix A). Of the participants that reported their ethnic background, 71.6% (n = 326) were Caucasian, 6.6% (n = 30) were Black, 5.9% (n = 27) were Asian, 5.3% (n = 24) were Arab/West Asian, 4% (n = 18) were South Asian, 1.8% (n = 8) were Latin/Hispanic, 1.3% (n = 6) were South East Asian, 0.4% (n = 2) were Aboriginal, and 2.9% (n = 13) were "Other".

The studies were approved by the Carleton University Psychology Research Ethics Board. Upon providing informed consent (Appendix B), participants completed an online questionnaire that assessed: demographic information, quantity of group memberships, depressive and anxiety symptoms, coping style, cognitive flexibility,

loneliness, optimism, and self-esteem. Following completion of the online form, participants were debriefed (Appendix C) and compensated with 0.5% course credit or a $10 gift card.

Measures

Demographics. Demographic information was assessed using a questionnaire inquiring about participants' gender, age, and ethnicity (Appendix D).

Social Identity. Social identities were quantified by summing participants' selections from a checklist of: Fraternity/Sorority, Sports Team, Academic Society/Special Interest Group, Religious Group, Carleton University Student, and Other (Appendix E). Connectedness was represented as a dichotomous variable based on those holding a single social identity ($n = 236$) and those holding two or more identities ($n = 219$).

Depression and Anxiety Symptomatology. The intensity of depressive symptoms was assessed using the Beck Depression Inventory (BDI 21-item version; Beck et al., 1961; Appendix F). The BDI is a widely-used self-report inventory to assess the intensity of depression in clinical and nonclinical samples. For each item, participants picked the best statement that describes their depressive symptomatology. Lower numbers (e.g. 0) indicated lower intensity of symptoms, while higher numbers (e.g. 3) were related to greater intensity. Overall severity of depression was then computed by summing all 21 items resulting in a score from 0 to 63 (Cronbach's $\alpha = 0.92$).

The intensity of anxiety symptoms was assessed using the Beck Anxiety Inventory (BAI; Beck & Steer, 1993; Appendix G). The BAI is a 21-item self-report

questionnaire, designed to minimize overlap with depression scales, for measuring anxiety in clinical and nonclinical samples. For each item participants indicated from "Not at all" (0) to "Severely" (3), the degree to which they have been bothered "over the past week" by common anxiety symptoms. All items were then summed for an overall index of anxiety severity ranging from 0 to 63 (Cronbach's $\alpha = 0.92$).

Coping Style. Coping style was assessed using the Survey of Coping Profiles Endorsed (SCOPE; Matheson & Anisman, 2003; Appendix H). The SCOPE is a 50-item measure used to assess coping profiles based on the endorsement of 13 coping strategies. Participants indicated the extent to which they endorsed each behavior, as a way of dealing with stressors in general, by selecting from "Never" (0) to "Almost Always" (4). Principal axis factoring was implemented to determine which factors fall under a problem- versus emotion-focused coping style. Emotion-focused coping comprised: rumination, emotional expression, other-blame, self-blame, emotional containment, and wishful thinking (Cronbach's $\alpha = 0.8$). Problem-focused coping comprised: problem-solving, cognitive restructuring, active distraction, avoidance, humour, social support-seeking, and passive resignation (Cronbach's $\alpha = 0.69$). Psychometric properties of this assessment have been previously validated in academic and clinical populations (e.g. Carleton University and the Royal Ottawa Hospital) to assess internal consistencies of items producing the 12 strategies.

Cognitive Flexibility. The Cognitive Flexibility Questionnaire was used to assess the degree to which individuals are flexible in their behavior when confronted with stressful experiences (CFQ; Gabrys, Matheson, & Anisman, *unpublished;* Appendix I). This 44-item scale had respondents indicate, from "Strongly Disagree" (1) to "Strongly

Agree" (7), their endorsement of strategies important for managing negative thoughts, memories, and emotions that may be provoked by stressful situations. Items correspond to 3 dimensions of cognitive flexibility including attentional control (Cronbach's α = 0.93), coping resources (Cronbach's α = 0.9), and cognitive reappraisal (Cronbach's α = 0.88). Each dimension was measured from 0 to 7 by averaging the score of its constituent items, while an overall measure of cognitive flexibility was obtained by averaging across all items (Cronbach's α = 0.94)

Loneliness. The UCLA Loneliness Scale was used to measure loneliness (UCLA-L; Russell, 1996; Appendix J). This scale consists of 21 items that describe subjective feelings associated with loneliness or social isolation. Respondents were asked to indicate on a Likert scale, from "Never" (1) to "Always" (4), how often they feel like each item. Loneliness was then computed as a sum total of all 21 items, with scores ranging from 21 to 84 (Cronbach's α = 0.95).

Optimism. Optimism was assessed using the 10-item Life Orientation Test-Revised (LOT-R; Scheier et al., 1994; Appendix K). Respondents indicated the extent to which they agreed with optimistic and pessimistic statements on a Likert scale from "Strongly Disagree" (0) to "Strongly Agree" (4). Optimism is then obtained by summing 7 items for a score ranging from 0 to 28 (Cronbach's α = 0.85).

Self-Esteem. Personal appraisals of self-esteem were assessed by the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1985; Appendix L). The 10 scale items assessed positive and negative evaluations of the self on a 7-point Likert scale from "Strongly untrue of me" (0) to "Strongly true of me" (6). A total self-esteem score of 0 to 60 was created by summing all items (Cronbach's α = 0.92).

Results

Bivariate Correlations

To test the hypothesis that individuals with multiple social identities would be more flexible in dealing with stressors than those with fewer identities, a correlational analysis was conducted. Consistent with hypotheses, connectedness (represented by number of identities) was related to lower levels of depressive and anxiety symptoms (psychological well-being; Table 1). Connectedness was also related to higher levels of cognitive flexibility and less utilization of emotion-focused coping, while no correlation with problem-focused coping was found (dealing with stressors; Table 1). Finally, connectedness was related to higher self-esteem and optimism and less loneliness (stress-buffering traits; Table 1).

Table 1. *Bivariate correlations among number of identities, psychological well-being, factors related to dealing with stressors, and stress-buffering traits (N = 455).*

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Number of Identities	-								
Psychological Well-being									
2. Anxiety Symptoms	*-.12**	-							
3. Depressive Symptoms	*-.11**	*.65***	-						
Dealing With Stressors									
4. Cognitive Flexibility	*.20***	*-.46***	*-.59***	-					
5. Problem-focused	*.06*	*-.10**	*-.31***	*.34***	-				
6. Emotion-focused	*-.19***	*.50***	*.60***	*-.51***	*.02*	-			
Stress-Buffering Traits									
7. Self-esteem	*.16***	*-.75***	*-.49***	*.60***	*.32***	*-.55***	-		
8. Optimism	*.19***	*-.44***	*-.64***	*.57***	*.35***	*-.50***	*.34***	-	
9. Loneliness	*-.22***	*.42***	*.65***	*-.44***	*-.40***	*.49***	*-.33***	*-.55***	-

* = p < .05; ** = p < .01

Mediating Factors in the Relationship between Connectedness and Psychological Well-Being

It was hypothesized that the relationship between connectedness and psychological well-being would be mediated by (1) factors fundamental for dealing with stress (cognitive flexibility, coping style), and (2) factors that protect against stress and psychopathology (self-esteem, optimism, loneliness). To examine this, Hayes' (2013) PROCESS macro for mediation was used.

As predicted, cognitive flexibility significantly mediated the relationship between connectedness and depressive symptoms (*C.I.:* -3.84 to -1.45). Specifically, greater connectedness was associated with higher levels of cognitive flexibility, and this in turn was related to lower levels of depressive symptoms (*Figure 1*). Another analysis was conducted, substituting anxiety as the outcome, in which cognitive flexibility was also a significant mediator (*C.I.:* -3.13 to -1.18); effects were in the same direction as in the depressive model.

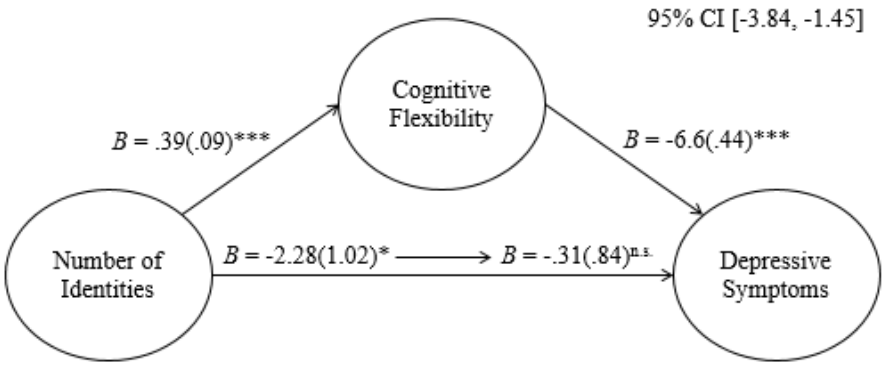

Figure 1. Mediating role of cognitive flexibility in the relationship between number of identities and depressive symptoms.
* = p < .05; *** = p < .001

To examine whether coping style also served as a mediator, a multiple mediation model was constructed wherein the endorsement of problem- and emotion-focused

strategies served as mediators for the relationship between connectedness and depressive symptoms (*Figure 2)*. It was found that having multiple identities was associated with less endorsement of emotion-focused strategies, which was in turn related to higher levels of depressive symptoms (*C.I.:* .16 to .30). Although problem-focused coping was associated with lower levels of depressive symptoms, it did not significantly mediate the overall relationship with connectedness. The same pattern was significant for the relationship between connectedness and anxiety, wherein the endorsement of emotion-, but not problem-focused coping mediated this (*C.I.:* -3.3 to 1.17).

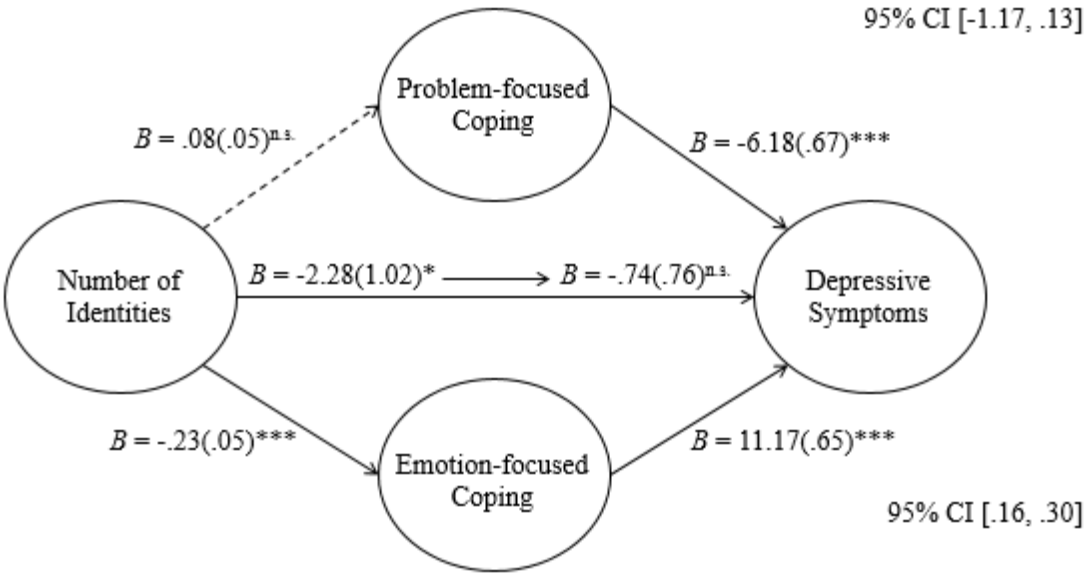

Figure 2. Mediating role of coping style (problem- and emotion-focused) in the relationship between number of identities and depressive symptoms.
* = p < .05; *** = p < .001

A final multiple mediation analysis was conducted in which self-esteem, optimism, and loneliness served as multiple mediators in the relationship between connectedness and depressive symptoms (*Figure 3*). This analysis revealed that self-esteem (*C.I.:* -.48 to -.31), optimism (*C.I.:* -.55 to -.16), and loneliness (*C.I.:* .16 to .30) significantly mediated this relationship. Specifically, having multiple identities was

associated with higher levels of self-esteem and optimism, which were further associated with lower levels of depressive symptoms. Multiple identities were also associated with less loneliness, which in turn was related to heightened depressive symptoms. Self-esteem (*C.I.:* -2.19 to -.37), optimism (*C.I.:* -1.56 to -.10), and loneliness (*C.I.:* -1.52 to -.15) also mediated the relationship between connectedness and anxiety symptoms; effects were in the same direction as in the depressive model.

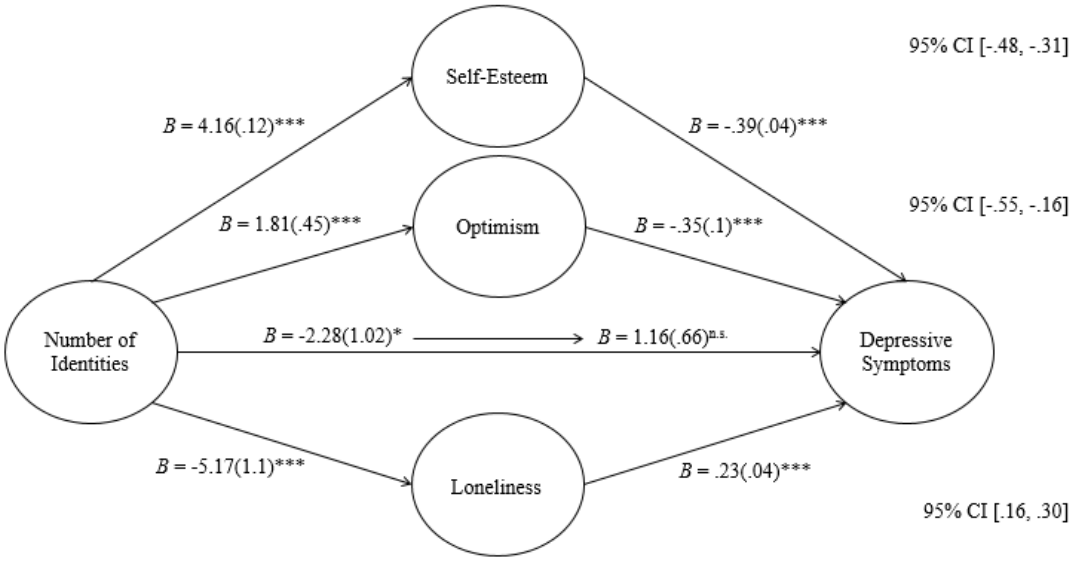

Figure 3. Mediating role of stress-buffering traits (self-esteem, optimism, loneliness) in the relationship between number of identities and depressive symptoms.
* = p < .05; *** = p < .001

Given the correlational nature of the present study, several alternative models were also tested in which the relationship between depressive or anxiety symptoms on multiple identities may have been mediated by the previously mentioned factors. Alternative mediation models were significant for cognitive flexibility (as in *Figure 1*) and emotion-, but not problem-focused coping (as in *Figure 2*). That is, higher levels of depressive and anxiety symptoms were associated with lower cognitive flexibility and

increased utilization of emotion-focused coping, and this was further related to lower connectedness. However, in alternative models for self-esteem, optimism, and loneliness, it appeared that only loneliness still mediated the relationship between connectedness and depressive or anxiety symptoms.

Discussion

The relationship between connectedness and positive mental health is well-established and may be related to how individuals with an increased number of group memberships deal with, or are protected from, stressors (Billings & Moos, 1981; Bisschop et al., 2004; Cutrona & Russell, 1987; Haslam et al., 2005; Rietschlin, 1998; Seeman, 1996). This relationship may depend on cognitive flexibility, which is linked to increased membership (Haslam et al., 2008; Linville, 1987) and is important for dealing with distress (Dalrymple & Herbert, 2007). Coping style may also play a role in this regard, as the endorsement of adaptive strategies has been linked to stress-buffering traits such as optimism and self-esteem (Folkman & Moskowitz; 2000 Southwick et al., 2005). The present study demonstrated that increased group membership (or "connectedness") was linked to psychological well-being and to factors related to dealing with stress in university, including an effective coping style, cognitive flexibility, and positive self-appraisals. Further, the findings supported the notion that higher levels of connectedness may be associated with reduced depressive and anxiety symptoms and that this relationship may be mediated by factors fundamental for dealing with stressful experiences.

Our findings indicated that, at the time of testing, participants with multiple social identities had lower levels of depressive and anxiety symptoms than those with fewer

identities. These findings are consistent with previous research indicating that connectedness is related to positive mental health (Linville, 1985, 1987; Norris et al., 2008). Despite the well-known benefits associated with group membership (e.g. social support, positive affect, and increased access to material resources) simply holding multiple identities seems to promote psychological and physical resilience in the face of life challenges (Jones & Jetten, 2011). This has been attributed to identity proving a sense of belonging or purpose (Baumeister & Leary, 1995) and counteracting the negative effects of group-based discrimination (Branscombe et al., 1999), performance demands (Linville, 1985), and stressful life transitions (Iyer et al., 2009). Although the present data are correlational, they are in line with previous findings that joining social groups is associated with better mental health outcomes (Cruwys et al., 2013). However, it might also be the case that depressed or anxious individuals, based on their symptoms (e.g. withdrawal and helplessness/hopelessness), are less likely to hold group memberships, which might actually further their symptomatology.

Increased connectedness might facilitate positive mental health through a number of psychosocial factors. In the present study, connected individuals showed greater cognitive flexibility and reduced endorsement of emotion-focused coping strategies. In this regard, increased connectedness might lead to enhancements in cognitive flexibility, and the use of more effective coping strategies, thus reducing depressive and anxiety symptoms. Alternatively, it might be that increased connectedness is related to lower depressive and anxiety symptoms because individuals who join groups are more flexible and endorse more effective coping strategies. However, as cognitive flexibility was found to mediate the relationship between connectedness and psychological well-being, the

present findings are consistent with previous reports that social integration may enhance flexibility in attention (Holahan et al., 1999; Linville, 1985), and that such flexibility is related to an increased capacity for dealing with stress (Southwick et al., 2005). Further, given that effective coping is subserved by cognitive flexibility (Kashdan & Rottenberg, 2010), this may be one explanation for the corresponding differences in these factors among connected individuals, and also partly account for the relationship between having multiple identities and reduced psychopathology (Goldberg, 2001).

Although increased coping resources are well-established as a benefit of connectedness, few studies have investigated this relationship with regard for the endorsement of particular styles of coping (Haslam et al., 2009; Jetten et al., 2014). The present study indicated that decreased endorsement of emotion-focused strategies may partly account for the psychological benefit conferred by social connectedness. Although emotion-focused coping may be useful in certain situations (e.g. when controllability is low), it is often closely aligned with depression and anxiety (Matheson & Anisman, 2003). Further, an emotion-focused style has been linked to the use of avoidant strategies (Friedman & Silver, 2007), as well to a non-adaptive over-reliance on particular strategies (Holahan et al., 1999; Ravindran et al., 2002), both of which may increase feelings of distress over time (Nolen-Hoeksema, 1998). The endorsement of problem-focused strategies was also related to decreased depressive and anxiety symptoms, but did not share a direct link with connectedness in either case. Although this may imply that problem-focused coping does not play a role in this model, it has been suggested that the individual paths in mediational models are not necessarily pertinent to whether the indirect effect is significant (Hayes, 2009). In any case, these findings lend support to

views suggesting that having multiple identities may promote effective coping and therefore impact individuals' capacity for stress.

That self-esteem, optimism, and loneliness also mediated the relationship between connectedness and psychological well-being suggests that highly-connected individuals may generally be better-equipped to deal with stressors. Self-esteem has often been linked to social identity and may correspond to the reinforcement of self-worth associated with increased social support (Crabtree et al., 2010; Tajfel & Turner, 1979). Conversely, when controlling for social support, simply holding a shared identity seems to protect against psychopathology (Jetten et al., 2014). Also, that social connectedness was related to less loneliness and in turn positive psychological well-being, may not solely be accounted for by increased support. As mentioned earlier, lonely individuals tend to have a higher reactivity to stressful events and therefore may be protected simply by virtue of holding social ties, irrespective of whether they are supportive (Cacioppo et al., 2000; Hawkley et al., 2003). Finally, the finding that connectedness is related to increased optimism and subsequent well-being suggests that positive emotionality plays a role in benefitting from group membership. This relationship is also likely reciprocal, as connectedness is thought to be motivated by positive emotions associated with forming bonds (Baumeister & Leary, 1995). Regardless of directionality, that optimism seems to promote positive appraisals (Carver & Scheier, 2002) and support coping efforts (Folkman & Moskowitz, 2000) suggests that connected individuals are well-equipped for dealing with stress.

Study 2: Significance of Social Group on the Development of Positive Social Identity and Psychological Well-Being

Given that aspects of group membership, such as perceived support and level of identification, impact how individuals interact with their groups, it follows that these factors may help to explain why psychological benefit varies across different social groups (Haslam et al., 2005). In this way, social support has been associated with buffering stress, while identification may influence the general receptiveness an individual may be to group advantages (Broadhead et al., 1983; George, 1989; Oakes, 1987). Thus, it is possible that these factors interact to determine why some groups confer greater psychological well-being. Specifically, individuals who perceive high support (and low unsupport) from their group might be more likely to identify strongly with that group, and therefore would be better-equipped to deal with stressors, resulting in improved psychological well-being. As such, it was hypothesized that levels of support, unsupport, collective self-esteem, identification, and psychological well-being (i.e., lower depressive and anxiety symptoms) would vary across different types of social identities. Further, it was predicted that the extent to which individuals identify with, or benefit from, a particular social identity, would depend on the level of support or unsupport that they perceived from that group, which in turn, would be linked to psychological well-being.

Methods

Participants and Procedure

Undergraduate males (n = 90, M_{age} = 20.2, SD = 2.7) and females (n = 283, M_{age} = 19.4, SD = 2) were recruited as described in Study 1. Of the participants that reported

their ethnic background, 69.7% (n = 260) were Caucasian, 8% (n = 30) were Arab/West Asian, 5.9% (n = 22) were Black, 4.3% (n = 16) were South Asian, 3.8% (n = 14) were Asian, 2.7% (n = 10) were Latin/Hispanic, 1.1% (n = 4) were South East Asian, 0.8% (n = 3) were Aboriginal, and 3.8% (n = 14) were "Other".

Participants completed an online questionnaire, as described in Study 1. The questionnaire for Study 2 assessed: demographic information, depressive and anxiety symptomatology, type of primary identity, social identification, collective self-esteem, support, and unsupport.

Measures

Demographics. Demographic information was assessed as in Study 1 (Appendix D).

Social Identity. Participants selected their strongest (primary) identity from the checklist in Study 1. Those identities selected for the study were: Carleton Student (i.e., those who primarily identified as students, instead of with a group; n = 116), Fraternity/Sorority (n = 90), Sports Team (n = 65), Academic Society (n = 62), and Religious Group (n = 40). Level of identification was assessed for the primary identity using the Identification Scale (12-item version; Cameron, 2004; Appendix E). Participants indicated their endorsement of group-relevant statements on a Likert scale that ranged from "Strongly Disagree" (0) to "Strongly Agree" (5). These statements comprised 3 dimensions of social identification including centrality (Cronbach's α = 0.71), in-group affect (Cronbach's α = 0.78), and in-group ties (Cronbach's α = 0.85). Scores for each dimension were obtained by taking the average score of the 4 items that

comprise each factor. An overall average was used to indicate the strength of the primary identity (Cronbach's $\alpha = 0.87$).

Depression and Anxiety Symptomatology. The intensity of depressive and anxiety symptoms was assessed as in Study 1, using the Beck Depression Inventory (BDI 21-item version; Beck et al., 1961; Appendix F) (Cronbach's $\alpha = 0.92$) and the Beck Anxiety Inventory (BAI; Beck & Steer, 1993; Appendix G) (Cronbach's $\alpha = 0.93$).

Collective Self-Esteem. Social identity was further assessed using the Collective Self-Esteem Scale, which additionally considers dimensions of self-esteem that are derived from group memberships (CSES; Luhtanen & Crocker, 1992; Appendix M). This 16-item scale is widely used to assess individual differences in collective, rather than personal, self-esteem. Participants were asked to respond to a list of statements that pertain to the person's membership in their primary social identity and each is rated on a 7-point scale from "Strongly Disagree" (1) to "Strongly Agree" (7). This measure comprises four subscales: membership esteem (Cronbach's $\alpha = 0.78$), public collective self-esteem (Cronbach's $\alpha = 0.74$), private collective self-esteem (Cronbach's $\alpha = 0.82$), and importance to identity (Cronbach's $\alpha = 0.55$). The subscales are represented by taking summing the 4 items for each respective factor, resulting each in a score from 0 to 28 (Cronbach's $\alpha = 0.86$).

Support. Regarding their primary identity, participants were assessed for support by the Social Provisions Scale (SPS; Cutrona & Russell, 1987; Appendix N). The SPS is a 12-item scale on which participants indicated as "Yes" (3), "Not sure" (2), or "No" (1), whether questions described the provisions of their social relationships. This comprised 6 provisions including: guidance, reliable alliance, reassurance of worth, attachment, social

integration, and opportunity for nurturance. An overall measure of support was then assessed by taking the average of scores on each dimension (Cronbach's $\alpha = 0.78$).

Unsupport. Participants were assessed for in-group unsupport, with regard for their primary identity, by the Unsupportive Social Interactions Inventory (USII-A; Ingram et al., 2001; Appendix O). The USII-A is a 24-item scale assessing unsupportive responses from others concerning stressful life events. This scale was modified to assess these responses specifically from relationships within the previously identified primary social identity. Participants indicated on a Likert scale ranging from "None" (0) to "A lot" (4), how frequently their social group respond to a personal stressor in unsupportive ways. An overall measure of unsupport was then assessed by taking the average of scores across all items (Cronbach's $\alpha = 0.92$).

Results

Social Group Differences in Social Identity, Support, Unsupport, and Psychological Well-Being

To test the hypothesis that psychological well-being, support, and identification would vary across different group types, a multivariate ANOVA was used to examine differences in: depressive and anxiety symptoms, support and unsupport, collective self-esteem sub-scales, and identification sub-scales across five primary identities. These comprised: Carleton students, academic societies, fraternities/sororities, sports teams, and religious groups (= "Carleton", "Academic", "Fraternity/Sorority", "Sports", and "Religious"). Although there were no significant differences in depressive or anxiety symptoms (*Figure 4*), or perceived unsupport (*Figure* 5*b*) across the five group types, these groups varied with respect to perceived support (*Figure 5a*), membership self-

esteem, private collective self-esteem, public collective self-esteem, perceived importance (*Figure 6*), overall identification, centrality, in-group affect, and in-group ties (*Figure 7*).

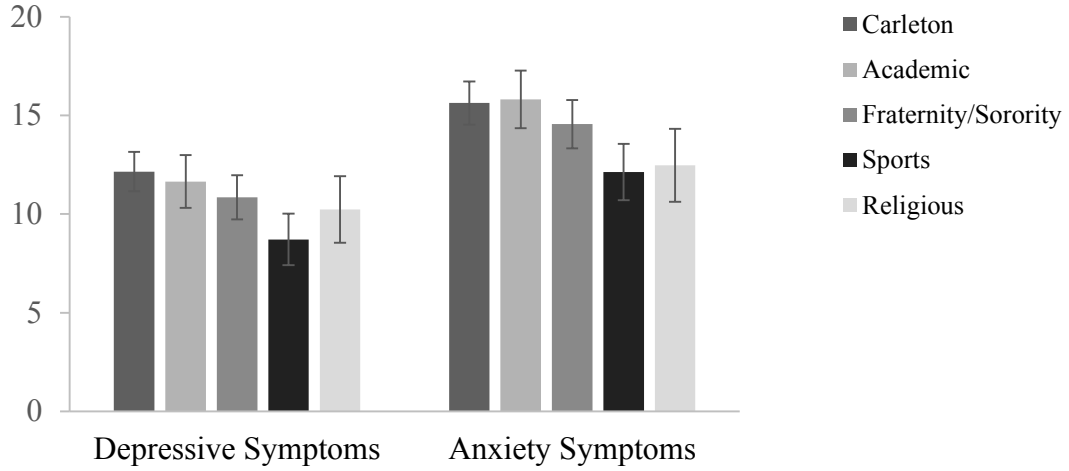

Figure 4. Severity (±SEM) of depressive (BDI; Beck et al., 1961) and anxiety symptoms (BAI; Beck & Steer, 1993) across five group types.

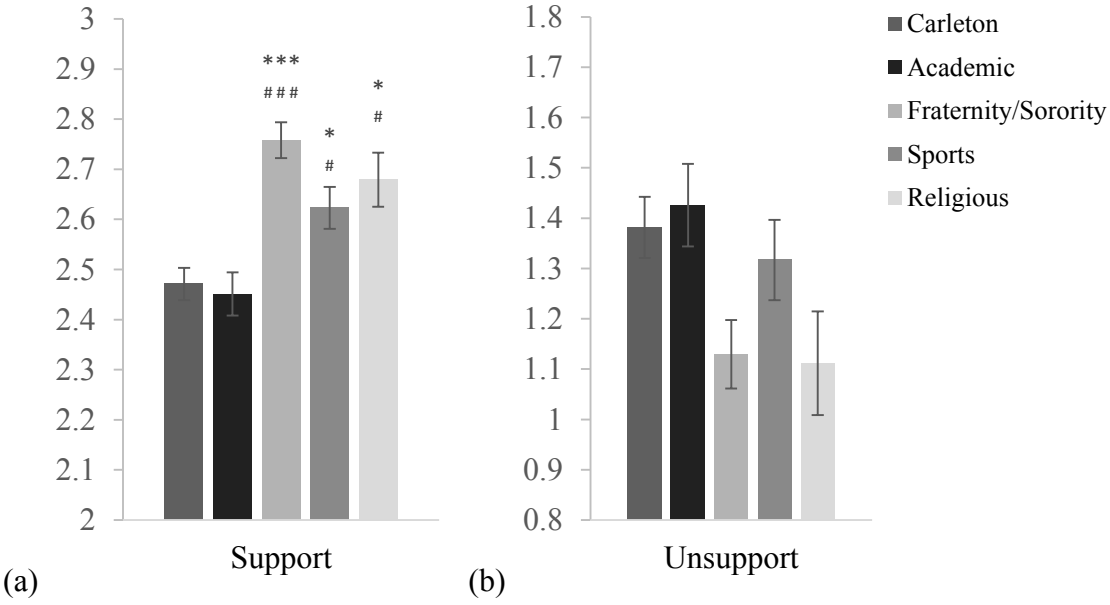

Figure 5. Perceived (a) support (SPS; Cutrona & Russell, 1987) and (b) unsupport (USII-A; Ingram et al., 2001) (±SEM) across five group types.
* = p < .05; ** = p < .01; *** = p < .001 relative to Carleton students
# = p < .05; ## = p < .01; ### = p < .001 relative to Academic societies

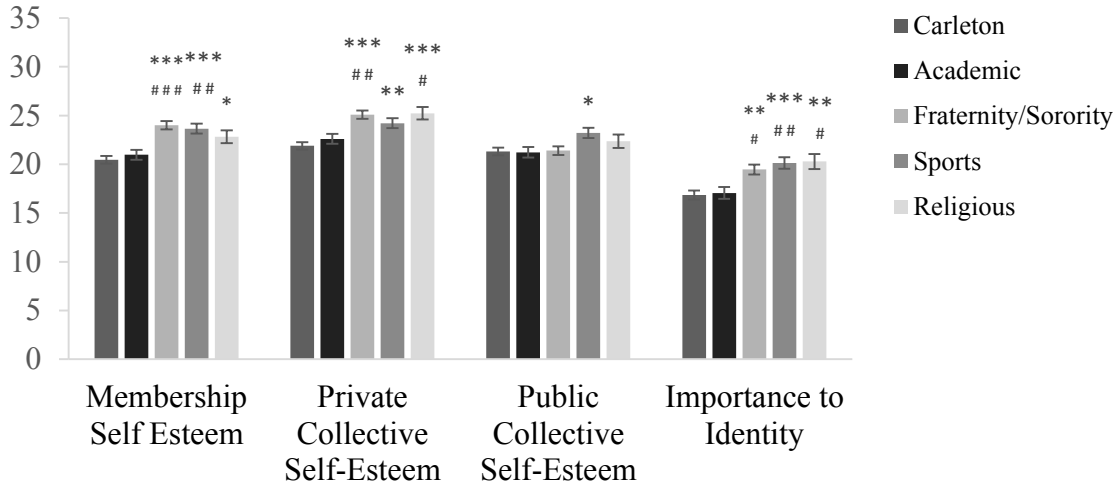

Figure 6. Measures of collective self-esteem (CSES; Luhtanen & Crocker, 1992) (±SEM) across five group types.
* = p < .05; ** = p < .01; *** = p < .001 relative to Carleton students
# = p < .05; ## = p < .01; ### = p < .001 relative to Academic societies

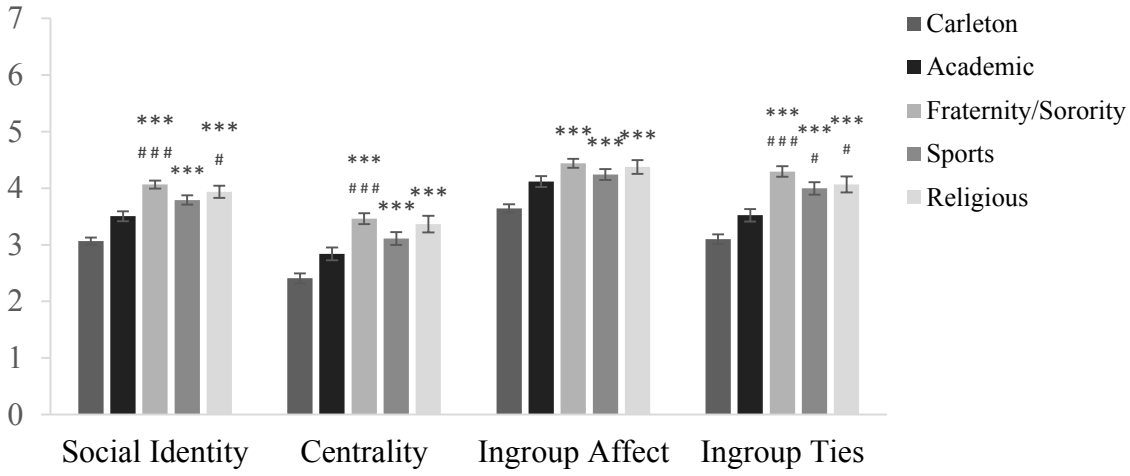

Figure 7. Measures of social identification (IS; Cameron, 2004) (±SEM) across five group types.
* = p < .05; ** = p < .01; *** = p < .001 relative to Carleton students
# = p < .05; ## = p < .01; ### = p < .001 relative to Academic societies

Moderated-Mediation Models of Support and Identification on Depressive Symptoms

To test the hypothesis that support and identification played a role in the relationship between group type and psychological well-being, several moderated-

mediation analyses were conducted. For these, overall social identification served as the mediator, while support and unsupport were separately considered as moderators. Pairwise comparisons were constructed for all five groups whereby a different dichotomous variable (representing differences between two groups) served as the predictor in each model. Depressive symptoms served as the outcome in all cases as no associations were found with anxiety symptoms.

As expected, perceived levels of support moderated the mediating role of identification in the relation between group type and depressive symptoms, but only for two group-group comparisons (*Figure 8*). Specifically, individuals who primarily identified as a fraternity/sorority member reported stronger identification than those who identified primarily as a Carleton student, and this in turn was related to lower depressive symptoms. However, this varied with levels of perceived social support from in-group members, such that, although mediation by identification was significant when perceived support was low (*C.I.:* -4.31 to -.95), it was stronger for those who reported high levels of support (*C.I.:* -6.78 to -2.19) (*Figure 8a*). A similar relationship was found for differences between individuals primarily identifying with religious groups as compared to those primarily identifying as Carleton students. However, in this case, mediation by identification was only significant when perceived in-group support was high (*C.I.:* -6.66 to -1.40) (*Figure 8b*).

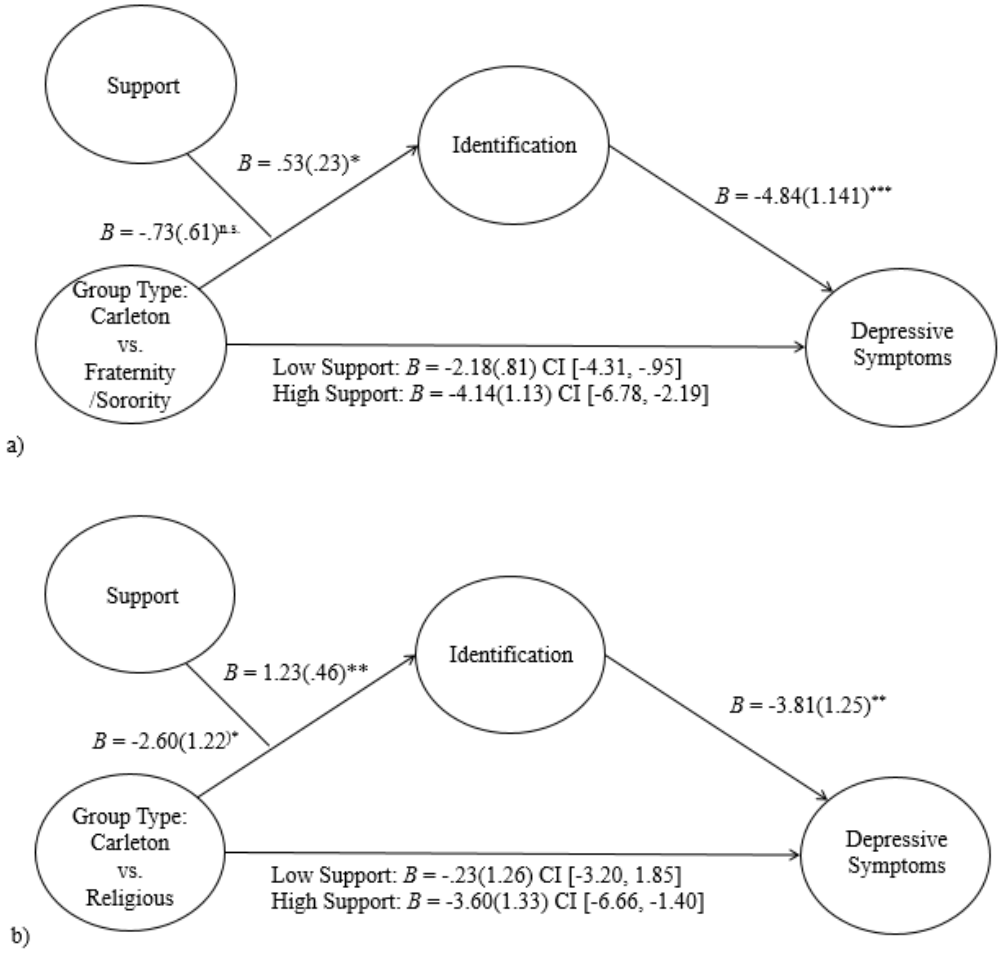

Figure 8. Schematic representation of moderated mediation model involving identification, support, depressive symptoms, and group type for (a) Carleton students vs. Fraternity/Sorority and (b) Carleton students vs. Religious.
* = p < .05; ** = p < .01; *** = p < .001

It was also considered that perceived unsupport would similarly moderate the relationship between group type and strength of identification, and that this would further influence depressive symptoms (*Figure 5*). This was significant only for differences between those identifying as fraternity/sorority members as compared to the Carleton student group (*Figure 9*). Specifically, identification remained stronger among fraternity/sorority members, and this in turn was related to lower depressive symptoms. However, this varied with levels of perceived unsupport from in-group members, such

that, although mediation by identification was significant when perceived unsupport was high (*C.I.:* -6.11 to -1.81), the effect was stronger when perceived unsupport was low (*C.I.:* -8.80 to -2.69).

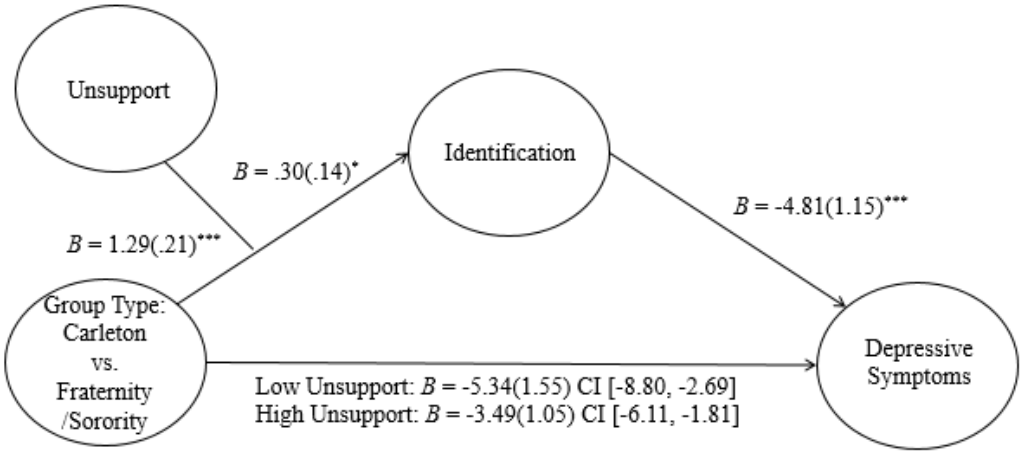

Figure 9. Schematic representation of moderated mediation model involving identification, unsupport, depressive symptoms, and group type for Carleton students vs. Fraternity/Sorority.
* = p < .05; ** = p < .01; *** = p < .001

Discussion

As often reported, and supported by Study 1, holding multiple identities seems to be positively related to psychological well-being (Bisschop et al., 2004; Haslam et al., 2005; Haslam et al., 2009; Jetten et al., 2014). However, the effect of group type is less understood, and may play an important role in whether benefit is conferred through membership (Branscombe et al., 1999). In a university sample, group membership is related to measures of academic success (Schrager, 1986), adjustment (Salsman et al., 2005), and self-esteem (Day, 1989). Some have attributed this to dimensions of in-group support (Haslam et al., 2005; Hawkley et al., 2003; Salsman et al., 2005) and others to how individuals identify with groups (Broadhead et al., 1983; Cruwys et al., 2013; George, 1989; Oakes, 1987). To expand on this, the present study examined differences

across 5 student-relevant identities in psychological well-being, perceived support and unsupport, and two measures of identification. Although support for the hypotheses was mixed, groups tended to differ on dimensions of support and identification, which seemed to be associated with the conferred benefits of membership (i.e., psychological well-being).

Perceived support differed among groups whereby individuals identifying primarily as students (i.e., the "Carleton" group) and those identifying with academic societies perceived less support than all other groups. This finding replicated previous work suggesting that academic societies do not foster a supportive environment, as performance and success is prioritized over individual bonds (Day, 1989). Although no significant differences were identified in perceived unsupport, large within-group variability suggests that this may be highly individual and unrelated to the nature of a particular group.

As expected, measures of collective self-esteem varied significantly across groups. Generally, individuals who primarily identified as Carleton students tended to report lower identification and evaluation of their identity than those identifying with fraternity/sorority, sports, or religious groups. This included perceived worthiness as a member (membership self-esteem), subjective evaluation of the group (private collective self-esteem), perceptions of how others see the group (public collective self-esteem), and the importance of the group for one's self-concept (importance to identity). Those belonging to academic groups also tended to score lower than other groups for all sub-scales, except for public collective self-esteem. These findings suggest that where fraternities/sororities, sports teams, and religious groups tend to foster a sense of identity,

this may be weaker in those with academic group associations or general student identities. Several researchers have attributed this to a lack of self-esteem fostered within a performance environment (Day, 1989; Hogg & Mullin, 1999), while it may also depend on aspects of support, which showed a similar trend across groups in the present study. Similar differences were found using Cameron's (2004) measures of identity, wherein the Carleton student group reported lower centrality, in-group affect, in-group ties, and overall identification than all other groups, suggesting that this general student identity is less salient than those associated with specific group membership. Accordingly, academic groups were less central and had weaker in-group ties than other identity groups, likely related to those aspects of self-esteem and support previously mentioned (Day, 1989).

Given that certain groups were associated with higher levels of support and identification, it was expected that they might also be associated with differences in depressive and anxiety symptomatology. However, no significant differences were reported in psychological well-being across group types, possibly owing to high within-group variability. In this respect, connectedness may be a more reliable indicator of social benefit (Study 1). Alternatively, the impact of particular groups on mental health may be more complex and depend on within-group factors as well.

In the present study, support and identification seemed to be related to the differential benefit of membership among members of fraternities and sororities as compared to the Carleton student group. Specifically, it seemed that belonging to this group was associated with greater psychological benefit (i.e., lower depressive symptoms) than being a non-member and that this may have been influenced by how individuals identified with that group, which was further dependent on perceived support.

In this case, when groups are characteristically high in support (as fraternities/sororities seemed to be) it follows that individuals may identify strongly with them, which could lead to reduced psychopathology. One explanation for this may be the link between identification and receptiveness to group benefit (George, 1989; Jetten et al., 2014; Oakes, 1987). Further, the present model suggests that fraternities and sororities may be associated with lower depressive symptoms, but this relation was even stronger when perceived within-group support was high. This feature may be characteristic of such groups, as undergraduate fraternity/sorority life has been shown to facilitate social integration and enhance the development of close relationships during university (Asel et al., 2009). The present study also showed that (with regard for fraternity/sorority membership) perceived unsupport moderated the mediating role of identification in the opposite direction, whereby those who perceived higher unsupport within their group were less likely to receive psychological benefit. Consistent with this, members of these groups seem to be more dependent on their peers than non-members (Miller, 1973).

Individuals identifying primarily with religious groups showed no advantage compared to those identifying as Carleton students unless within-group support was high, emphasizing the critical role for support in this relationship. Additionally, it seems that given the correspondence of support and identification shown across groups, these factors are likely inter-related. Indeed, the often high identification seen with religious groups has been attributed to these groups having deeply entrenched support networks (Park, 2007), while in other cases, identification seems to predict support, and in turn, higher self-esteem (Crabtree et al., 2010). Either scenario is valid, as strong social identification with such a group implies a sense of collective self-esteem (Luhtanen & Crocker, 1992)

and emotional closeness with other members (Cameron, 2004). Another factor in the relationship with psychological well-being may be that these groups are grounded in unfalsifiable belief systems (Ysseldyk et al., 2010), which seem to buffer stress by infusing ambiguous or challenging situations with meaning (Park, 2007; Southwick et al., 2005). Along these lines, others have associated religious groups with greater subjective well-being (Ellison, 1991) and, in a university context, overall adjustment (Salsman et al., 2005). Further, this association has been attributed to religious involvement offsetting life stress (Ellison et al., 2001; Krause & Tran, 1988) that is typically elevated in student populations (Adlaf et al., 2001).

General Discussion

A recent meta-analysis of 148 studies and greater than 300 000 participants indicated that stronger social relationships are associated with longer life expectancy, and may be comparable to the effect of quitting smoking for general well-being (Holt-Lunstad et al., 2010). One aspect of this may be connectedness, as belonging to multiple groups has been associated with lower levels of depression, anxiety, and psychological distress (Linville, 1985; Norris, 2008). Social connectedness may be an especially useful resource during transition as it seems to predict adjustment and well-being in university students (Iyer et al., 2009). However, it has been suggested that the quality of memberships is most important, as only meaningful connections seem to significantly impact health behavior or well-being (Jetten et al., 2014).

The present findings suggest that connectedness may be related to positive psychological well-being, and although a causal explanation cannot be inferred, the data are consistent with the view that this may have occurred because group identity buffered

stress reactions or promoted the ability to deal with stressors (Haslam et al., 2005; Haslam et al., 2009). Further, it was shown that dimensions of identification and support, which tend to vary across different types of groups, were related to how benefit was received from membership. In this way, the quality and quantity of social identities seem to converge to influence the relationship between group membership, individual susceptibility to stressors, and psychopathology.

Importantly, given that the present studies were cross-sectional in nature, causality cannot be inferred. In this regard, when an alternative mediation model for the connectedness-psychological well-being relationship was assessed, it was shown to be viable for mediation by cognitive flexibility, and by problem- and emotion-focused coping. In essence, just as identifying with multiple groups could influence psychological well-being through increased cognitive flexibility, it may also be the case that reduced cognitive flexibility partly accounts for why depressed/anxious individuals are less likely to hold multiple memberships. Similarly, depressive and anxiety symptoms may influence the endorsement of emotion-focused coping that in turn accounts for why these individuals may be less connected. Finally, despite that self-esteem and optimism no longer served as mediators in the alternative model, a definitive directional pathway cannot be extrapolated from these results. However, Jetten, Haslam et al. (2014) have recently turned to the pursuit of group membership, and ultimately social identity, as part of a 'social cure', and the present findings are in line with this view. Likewise, recent longitudinal and experimental findings point to group membership, and overall connectedness, as being both protective and curative (Cohen et al., 2003; Cruwys et al., 2013).

As with Study 1, although the findings on support and identification are consistent with current theorizing, causal conclusions cannot be made. Certainly, when individuals are healthy and well they may be more likely to actively participate in social groups (Jetten et al., 2014), and may be in a better position to provide and receive support (Matton, 1988). Recent evidence for social support interventions suggest that simply being connected may not be sufficient for enhancing psychological well-being (Jetten et al., 2014). In fact, the sense of identification derived from group membership seems to be a stronger predictor of depressive symptoms than that of social contact alone (Sani et al., 2012). In this regard, it may be important to address barriers for such identification in the future.

There are several limitations associated with the current findings. Given the confines of correlational data, it will be necessary to determine through longitudinal analysis and/or experimental manipulation of group factors whether joining certain groups or multiple groups can directly impact susceptibility to stress and psychopathology. Although longitudinal studies may address directionality or alternative models, experimental paradigms are ideal to control for extraneous and confounding variables. In support of the current pathways, social connectedness has been linked to curative outcomes for general health (Cohen et al., 1997) and psychological well-being (Cruwys et al., 2013). Generalizing results from the current sample may be problematic as all participants were selected from an undergraduate population. However, as this demographic has been identified as at-risk for subsyndromal depression, anxiety, and co-morbid conditions (Adlaf et al., 2001), these findings may be particularly relevant for preventing the onset or recurrence of clinical disorders.

Further considerations are necessary to translate the current findings into an effective social intervention. Firstly, that some groups promote risky behaviors (e.g. drinking or smoking) suggest that identification and support may not be sufficient for improving well-being through membership (Dawson, 2004). Conversely, identity-related processes may also underlie participation in health-promoting activities (Laverie, 1998). In addition, since higher socioeconomic class seems to be related to increased group membership (Argyle, 1994) and better adjustment during the transition to university (Iyer et al., 2009), it may be important to address economic barriers for identification. Finally, since social change is often associated with uncertainty, and subsequent stress or anxiety (Iyer et al., 2009), it may be valuable to take advantage of existing memberships that are positive and congruent with the individual's self-image.

Taken together, the present data suggested that holding multiple social identities was related to reduced depressive and anxiety symptoms, a greater ability to deal with stressors (i.e., increased cognitive flexibility, decreased emotion-focused coping), and protection against stress and psychopathology (i.e., increased optimism and self-esteem, decreased loneliness). Moreover, this study provided support for the hypothesis that these stress-buffering factors mediate the relationship between connectedness and psychological well-being. Additionally, it was shown that certain types of groups may be characteristically different in terms of support and identification, and that these factors may play a role in the differential benefits of group membership.

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Appendix A

Recruitment Notices

Study 1: Online Recruitment of SONA Students

Study Title: Social Identity and Mental Health

Abstract: We are interested in examining whether having a strong social identity is related to better mental health.

Description: For students, the transition to University is one that is marked by many challenging experiences. It has been suggested that membership in a social group may buffer against stress, anxiety, and depression that is associated with these challenges. The purpose of this study is to examine the potential benefits of social group membership, such as that experienced by members of campus organizations at Carleton, on mental health and the mechanisms through which this may occur.

In this online study, you will be asked to fill out questionnaires about your personal background and your membership in certain social groups, as well as those about your self-appraisals, stressful experiences, sadness, anxiety, depression, and coping abilities. This study takes approximately 45 minutes to complete.

Compensation: .5% towards any eligible SONA course

To complete this study, please click on the link below:

www.qualtrics.com/socialidentityandmentalhealth

This study has received clearance by the Carleton University Psychology Research Ethics Board (Reference #13-195).

Eligibility: Undergraduate student at Carleton University, who can receive experimental credits for participation.

Study 2: Recruitment Poster for SONA and Non-SONA Students

Carleton UNIVERSITY

IN A CAMPUS ORGANIZATION? GROUP MEMBERS WANTED FOR ONLINE SOCIAL IDENTITY STUDY

RECEIVE A $10 GIFT CARD TO TIM HORTON'S!
(or 0.5% SONA CLASS CREDIT)

The Centre for Research on Stress, Coping & Well-Being is conducting a study regarding social memberships, identity, and mental health, and is looking for **any currently registered Carleton University student who is a member of a campus organization** to participate. *Note: some questions may ask about stress, depression, and negative thinking.

To complete this 1 hour online survey please contact

CoreyFee@cmail.carleton.ca

You will receive a $10 Tim Horton's gift card (or 0.5% SONA class credit) as a **thank you** for participating

This study has received clearance by the Carleton University Psychology Research Ethics Board (Reference #13-195).

Appendix B

Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent has to provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study

Study title: Social Identity and Mental Health

Personnel: The following people are involved in this research project and may be contacted if you have questions about this project, what it means, or concerns about how it was conducted:

Corey Fee, Graduate Researcher (613 520-2600 ext. 7513 | corey_fee@carleton.ca)

Robert Gabrys, Graduate Researcher (613 520-2600 ext. 2692 | robert_gabrys@carleton.ca)

Dr. Hymie Anisman, Faculty Investigator (Hymie.Anisman@carleton.ca)

Dr. Kimberly Matheson, Faculty Investigator (Kim.Matheson@carleton.ca)

Ethical concerns: Should you have any ethical concerns about this research, please contact Dr. Shelley Brown, at: shelley_brown@carleton.ca (613-520-2600 ext. 1505).

Any other concerns: For any other concerns, please contact Dr. John Stead (Department of Neuroscience Chair, 613-520-2600, ext. 8774, john_stead@carleton.ca) or Dr. Anne Bowker (Psychology Department Chair, 613-520-2600, ext. 8218, anne.bowker@carleton.ca).

Purpose and Task Requirements. For students, the transition to University is one that is marked by many challenging experiences. It has been suggested that membership in a social group may buffer against stress, anxiety, and depression that is associated with these challenges. At Carleton University, many students choose to identify with Greek letter organizations (fraternity or sororities), sports teams, or academic socieities. The purpose of this study is to examine the potential benefits of social group membership, such as that experienced by these members at Carleton University, on mental health and the mechanisms through which this may occur. In this online study, you will be asked to fill out questionnaires about your personal background and your membership in certain social groups, as well as those about your self-appraisals, stressful experiences, sadness, anxiety, depression, and coping abilities. This study takes approximately 45 minutes to complete. Please note that some of the questionnaires will ask about sensitive information (e.g. early life trauma, depressive and anxiety-like symptoms).

Potential risk/discomfort. Some of the questions in this study do ask about stressful experiences, loneliness, depression, anxiety, and early life adversity. For some individuals,

answering these questions may produce some discomfort. Please note, you can skip questions and you will still be granted your 0.5% for research participation (for SONA students) or $10 Tim Hortons card (for non-SONA students).

Anonymity/Confidentiality. The data collected in this study are strictly confidential. All data are coded such that your name is not associated with the responses you provide. Any identifying information associated with your code will be confined to a date file that will be separated from your questionnaire, and kept in a separate, secured file by the research investigators, who will keep this information confidential.

Qualtrics – Online Survey System

We will be collecting data using the software Qualtrics, which uses servers with multiple layers of security to protect the privacy of the data (e.g., encrypted websites and pass-word protected storage). Please note that Qualtrics is hosted by a server located in the USA. The United States Patriot Act permits U.S. law enforcement officials, for the purpose of an anti-terrorism investigation, to seek a court order that allows access to the personal records of any person without that person's knowledge. In view of this we cannot absolutely guarantee the full confidentiality and anonymity of your data. With your consent to participate in this study you acknowledge this.

Security of data storage
The data collected will remain on the Qualtrics account until the end of the study (***up to 6 months***) and will then be deleted. No backups will be kept on the Qualtrics server after the deletion has been processed. In addition, the data will be downloaded upon completion of the study and stored on password protected lab computers. Data may be shared with trusted colleagues and with requests from competent professionals (APA guidelines ***8.14).*** **Anonymous data will be kept up until 3 years following the end of the study. Personal identifiers will be kept for up until credit or compensation is assigned (up to 2 months).**
Please note that, to grant you 0.5% or your $10 Tim's card for research participation, we will be asking you for your name and email address at the beginning of the study. To do this we have created two separate webpages and data files. One file contains your questionnaire responses; the other contains your name and email address. Once we have assigned your 0.5% grade or distributed your card, your name and email address will be deleted.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw. If you choose to withdraw you will still be provided access to the debriefing.

Compensation: 0.5% towards any eligible SONA course (SONA students only) or $10 Tim Hortons gift Card.

This study has been approved by the Carleton University Ethics Committee for Psychological Research (Ethics # 13-195)

I have read the above description of the study. The data collected will be used in research publications and/or for teaching purposes. My selection of "Accept" indicates that I agree to participate in the study, and this in no way constitutes a waiver of my rights.

BY CLICKING THE "ACCEPT"" BUTTON, YOU STATE THAT YOU HAVE READ THE ABOVE INFORMATION AND HAVE GRANTED CONSENT TO PARTICIPATE IN THIS STUDY.

ACCEPT **DECLINE**

Appendix C

Debriefing

What are we trying to learn in this research?

Social groups have been shown to be especially effective at buffering against common challenges that University students face such as stress, anxiety, and depression. Little data has been collected, however, about specific social groups at Carleton University. In this study, we are trying to learn whether identification with particular social groups at Carleton is associated with more adaptive coping, reduced stress, and better mental health.

Why is this important to scientists or the general public?

It is well known that stress can have negative repercussions on mental health. We are, therefore, interested in determining whether social group membership, such as that with Carleton Greek letter organizations, can be an effective buffer in dealing with stressful experiences, and whether these factors can be important in the prevention and treatment of depression and anxiety in University-aged students.

What are our hypotheses and predictions?

In this study, we expect that individuals who choose to identify with social groups will likely show improved social support and coping ability in the face of stressful experiences, and overall, show improved measures of mental health factors such as sadness, anxiety, and depression versus students who do not choose to identify with social groups.

What if I would like to learn more?

Below are several scientific papers on the potential benefits of membership in social groups and how it relates to the experience of stress, anxiety, and depression

http://www.ncbi.nlm.nih.gov/pubmed/16238844

http://psp.sagepub.com/content/34/9/1200.full.pdf

If you are interested in getting involved as a member of a Carleton University club or society, check out the link below:

http://cusaonline.ca/clubs/

What if I have questions later?

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Ethical concerns: Should you have any ethical concerns about this research, please contact Dr. Shelley Brown, at: shelley_brown@carleton.ca (613-520-2600 ext. 1505).

Any other concerns: For any other concerns, please contact Dr. John Stead (Department of Neuroscience Chair, 613-520-2600, ext. 8774, john_stead@carleton.ca) or Dr. Anne Bowker (Psychology Department Chair, 613-520-2600, ext. 8218, anne.bowker@carleton.ca).

Study Personnel:
Corey Fee, Graduate Researcher, Department of Neuroscience
Robert Gabrys, Graduate Researcher, Department of Neuroscience
Dr. Hymie Anisman, Faculty Member, Department of Neuroscience
Dr. Kimberly Matheson , Faculty Member, Department of Psychology

Is there anything that I can do if I found this study to be emotionally draining?

Yes. If you have experienced any distress while completing this study, please consult the resources below:

Carleton University Counselling Services

Confidential personal counselling services are available for current Carleton University students. Our primary responsibility is to alleviate distress and promote healthy functioning by providing short-term counselling services. Students can self-refer to counselling. Some examples of the issues students may discuss with a counsellor include: coping with stress/homesickness, increasing sadness, handling a crisis, improving communication, learning to be assertive, increasing self-esteem, gender identity, understanding one's sexuality and dealing with alcohol and drug concerns.

To make an appointment for counselling:

For students living off campus: Main Clinic Rm. 2600 CTTC Bldg. to book in person or Call 613-520-6674
For students living in residence: Counselling is available Sept. to April Rm. 223D Res Commons Bldg. Call 613-520-2600 ext. 8061 for intake.
For International and Exchange students: Call 613-520-6674 and ask to book with the International Student Counsellor.
Mental Health Crisis Line: within Ottawa (613) 722-6914, outside Ottawa 1-866-996-0991, Web Site: http://www.crisisline.ca/

Thank you for participating in this research!

Appendix D

Demographic Information

Sex: □ Female □ Male

Age: ____

What is your citizenship status?

□Canadian citizen

□ Landed immigrant

□ Student visa

□Temporary visa

□Refugee

What is your first language? _____

If your first language is not English, how long have you been **fluent** in reading, writing and comprehension of the English language? _____

What is your ethnic/racial background?

□Asian (e.g., Chinese, Japanese, Korean)

□South Asian (e.g., East Indian, Pakistani, Punjabi, Sri Lankan)

□South East Asian (e.g., Cambodian, Indonesian, Laotian)

□Arab/West Asian (e.g., Armenian, Egyptian, Iranian, Lebanese, Moroccan)

□Black (e.g., African, Haitian, Jamaican, Somali)

□Latin American/Hispanic

□Aboriginal

□White/Euro-Caucasian

□Other (please specify): _____

What is your current relationship status? *Please select the one that best applies to you.*

□Single

□In a relationship

□Engaged

□Married

□Separated/Divorced ……. Please specify how many months ago you separated - _____

□Widowed

Have you had or do you currently have any health related illnesses or physical condition (e.g., diabetes, heart disease, autoimmune disease)?

□No, I don't

□Yes, I did but I no longer do

□Yes, I do

If YES, please specify illness/condition you had/have _____

Have you ever been or are currently diagnosed with a psychological disorder/condition (e.g., depression or anxiety)?

□No, I am not

□Yes, I was but no longer

□Yes, I am

If YES, please specify disorder/condition _____

Appendix E

Identification Scale (Cameron, 2004)

Everybody has certain social identities (for example: being a female/male, being a student, or embracing a particular culture)

Are you a member of any of the following groups (please check all that apply)?

□ Fraternity/Sorority

□ Varsity Sports Team

□ Academic Society

□ Special Interest Group

□ Religious Group

□ Carleton University Student

□ Other (please specify) _____

Which of the above groups do you identify with the most? _____

Regarding the group that you identify with the most, please rate the extent to which you agree or disagree with each of the statements below on a scale of 0 (strongly disagree) to 5 (strongly agree).

0	1	2	3	4	5
Strongly Disagree					**Strongly Agree**

1. I have a lot in common with other (ingroup members). _____
2. I often think about the fact that I am a(n) (ingroup member). _____
3. In general, I'm glad to be a(n) (ingroup member) _____
4. The fact that I am a(n) (ingroup member) rarely enters my mind. _____

5. Generally, I feel good when I think about myself as a(n) (ingroup member). _____

6. I feel strong ties to other (ingroup members). _____

7. I often regret that I am a(n) (ingroup member). _____

8. Overall, being a(n) (ingroup member) has very little to do with how I feel about myself. _____

9. I don't feel good about being a(n) (ingroup member). _____

10. I find it difficult to form a bond with other (ingroup members). _____

11. In general, being a(n) (ingroup member) is an important part of my self-image. _____

12. I don't feel a sense of being "connected" with other (ingroup members). _____

Appendix F

Beck Depression Inventory (BDI; Beck et al., 1961)

On this questionnaire are groups of statements. Please read the entire group of statements in each category. Then pick out ONE statement in that group which best describes the way you feel. Check off the number beside the statement you have chosen.

---

1. ___ 0 =I do not feel sad
   ___ 1 = I feel sad or blue
   ___ 2a = I am blue or sad all of the time and I can't snap out of it
   ___ 2b = I am so sad or unhappy that it is very painful
   ___ 3 = I am so sad or unhappy that I can't stand it

2. ___ 0 = I am not particularly pessimistic or discouraged about the future
   ___ 1 = I feel discouraged about the future
   ___ 2a = I feel I have nothing to look forward to
   ___ 2b = I feel I won't every get over my troubles
   ___ 3 = I feel that the future is hopeless and things cannot improve

3. ___ 0 = I do not feel like a failure
   ___ 1 = I feel I have failed more than the average person
   ___ 2a = I feel I have accomplished very little that is worthwhile or that means anything
   ___ 2b = As I look back on my life, all I can see is a lot of failures
   ___ 3 = I feel I am a complete failure as a person

   ___ 0 = I am not particularly dissatisfied
   ___ 1a = I feel bored most of the time
   ___ 1b = I don't enjoy things the way I used to
   ___ 2 = I don't get satisfaction out of anything anymore
   ___ 3 = I am dissatisfied with everything

5. ___ 0 = I don't feel particularly guilty
   ___ 1 = I feel bad or unworthy a good part of the time
   ___ 2a = I feel quite guilty
   ___ 2b = I feel bad or unworthy practically of the time now
   ___ 3 = I feel as though I am very bad or worthless

6. ___ 0 = I don't feel I am being punished
   ___ 1 = I have a feeling that something bad may happen to me
   ___ 2 = I feel I am being punished or will be punished
   ___ 3a = I feel I deserve to be punished
   ___ 3b = I want to be punished

7. ___ 0 = I don't feel disappointed in myself
___ 1a = I am disappointed in myself
___ 1b = I don't like myself
___ 2 = I am disgusted with myself
___ 3 = I hate myself

8. ___ 0 = I do not feel I am any worse than anybody else
___ 1 = I am very critical of myself for my weaknesses or mistakes
___ 2a = I blame myself for everything that goes wrong
___ 2b = I feel I have many bad faults

9. ___ 0 = I don't have thoughts of harming myself
___ 1 = I have thoughts of harming myself but I would not carry them out
___ 2a = I feel I would be better off dead
___ 2b = I have definite plans about committing suicide
___ 2c = I feel my family would be better off if I were dead
___ 3 = I would kill myself if I could

10. ___ 0 = I don't cry anymore than usual
___ 1 = I cry more now than I used to
___ 2 = I cry all the time now. I can't stop it
___ 3 = I used to be able to cry but now I can't cry at all even though I want to

11. ___ 0 = I am no more irritated now than I ever am
___ 1 = I get annoyed or irritated more easily than I used to
___ 2 = I get irritated all the time
___ 3 = I don't get irritated at all the things that used to irritate me.

12. ___ 0 = I have not lost interest in other people
___ 1 = I am less interested in other people than I used to be
___ 2 = I have lost most of my interest in other people and I have little feeling for them
___ 3 = I have lost all my interest in other people and don't care about them at all

13. ___ 0 = I make decisions about as well as ever
___ 1 = I am less sure of myself now and try to put off making decisions
___ 2 = I can't make decisions anymore without help
___ 3 = I can't make decisions at all anymore

14. ___ 0 = I don't feel I look any worse than I used to
___ 1 = I am worried that I am looking old or unattractive
___ 2 = I feel that there permanent changes in my appearance and they make me look unattractive
___ 3 = I feel that I am ugly or repulsive looking

15. ___ 0 = I can work about as well as before
___ 1a = It takes extra effort to get started at doing something
___ 1b = I don't work as well as I used to
___ 2 = I have to push myself very hard to do anything
___ 3 = I can't do any work at all

16. ___ 0 = I can sleep as well as usual
___ 1 = I wake up more tired in the morning than I used to
___ 2 = I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
___ 3 = I wake up early every day and can't get more than 5 hours sleep

17. ___ 0 = I don't get anymore tired than usual
___ 1 = I get tired more easily than I used to
___ 2 = I get tired from doing anything
___ 3 = I get too tired to do anything

18. ___ 0 = My appetite is no worse than usual
___ 1 = My appetite is not as good as it used to be
___ 2 = My appetite is much worse now
___ 3 = I have no appetite at all any more

19. ___ 0 = I haven't lost much weight, if any, lately
___ 1 = I have lost more than 5 pounds
___ 2 = I have lost more than 10 pounds
___ 3 = I have lost more than 15 pounds

20. ___ 0 = I am no more concerned about my health than usual
___ 1 = I am concerned about aches and pains or upset stomach or constipation or other unpleasant feelings in my body
___ 2 = I am so concerned with how I feel or what I feel that it's hard to think of much else
___ 3 = I am completely absorbed in what I feel

21. ___ 0 = I have not noticed any recent change in my interest in sex
___ 1 = I am less interested in sex than I used to be
___ 2 = I am much less interested in sex now
___ 3 = I have lost interest in sex completely

Appendix G

Beck Anxiety Inventory (BAI; Beck & Steer, 1993)

Please rate how much you have been bothered by each of the following symptoms over the past week.

0	1	2	3
Not at all			**Severely (I could barely stand it)**

____ 1. Numbness or tingling

____ 2. Feeling hot

____ 3. Wobbliness in legs

____ 4. Unable to relax

____ 5. Fear of the worse happening

____ 6. Dizzy or light-headed

____ 7. Heart pounding or racing

____ 8. Unsteady

____ 9. Terrified

____ 10. Nervous

____ 11. Feelings of choking

____ 12. Hands trembling

____ 13. Shaky

____ 14. Fear of losing control

____ 15. Difficulty breathing

____ 16. Fear of dying

____ 17. Scared

____ 18. Indigestion or discomfort in abdomen

____ 19. Faint

____ 20. Face flushed

____ 21. Sweating (not due to heat)

Appendix H

Survey of Coping Profiles Endorsed (SCOPE; Matheson & Anisman, 2003)

The purpose of this questionnaire is to find out how people deal with more general problems or stresses in their lives. The following are activities that you may have done. After each activity, please indicate the extent to which you would use this as a way of dealing with problems or stresses in recent weeks.

Ordinarily, in recent weeks have you:	***Never***	***Seldom***	***Sometimes***	***Often***	***Almost always***
1. accepted that there was nothing you could do to change your situation?	0	1	2	3	4
2. tried to just take whatever came your way?	0	1	2	3	4
3. talked with friends or relatives about your problems?	0	1	2	3	4
4. tried to do things which you typically enjoy?	0	1	2	3	4
5. sought out information that would help you resolve your problems?	0	1	2	3	4
6. blamed others for creating your problems or making them worse?	0	1	2	3	4
7. sought the advice of others to resolve your problems?	0	1	2	3	4
8. blamed yourself for your problems?	0	1	2	3	4
9. exercised?	0	1	2	3	4
10. fantasized or thought about unreal things (eg., the perfect revenge, or winning a million dollars) to feel better?	0	1	2	3	4
11. been very emotional compared to your usual self?	0	1	2	3	4
12. gone over your problem in your mind over and over again?	0	1	2	3	4
13. asked others for help?	0	1	2	3	4
14. thought about your problem a lot?	0	1	2	3	4
15. became involved in recreation or pleasure activities?	0	1	2	3	4
16. worried about your problem a lot?	0	1	2	3	4

17. tried to keep your mind off things that are upsetting you?	0	1	2	3	4
18. tried to distract yourself from your troubles?	0	1	2	3	4
19. avoided thinking about your problems?	0	1	2	3	4
20. made plans to overcome your problems?	0	1	2	3	4
21. told jokes about your situation?	0	1	2	3	4
22. thought a lot about who is responsible for your problem (besides yourself)?	0	1	2	3	4
23. shared humorous stories etc. to cheer yourself and others up?	0	1	2	3	4

Appendix I

Cognitive Flexibility Questionnaire (CFQ; Gabrys, Matheson, & Anisman, *unpublished*)

Stressful events are common occurrences in everyday life and, often, these experiences can provoke negative thoughts, memories, and/or emotions. Please take a minute and reflect back on some of these difficult situations, and list the sorts of thoughts and emotions that were going through your mind.

_____

_____

_____

_____

Next, please rate the extent to which you agree and disagree with the following statements.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Generally, when in stressful situations...							
1. I weigh out many options before choosing how to take action.	1	2	3	4	5	6	7
2. I can't focus on anything when I am upset.	1	2	3	4	5	6	7
3. It's hard to think of different ways of dealing with the situation	1	2	3	4	5	6	7
4. I control my thoughts and feelings by putting the situation in context.	1	2	3	4	5	6	7
5. I anticipate the consequences of my actions before acting.	1	2	3	4	5	6	7
6. I can remain in control over my thoughts and emotions.	1	2	3	4	5	6	7
7. It's difficult let go of intrusive thoughts or emotions.	1	2	3	4	5	6	7
8. It's hard for me to put things in perspective when it's upset.	1	2	3	4	5	6	7
	1	2	3	4	5	6	7

9. My thoughts and emotions become too much to deal with.							
10. I have a hard time managing my emotions.	1	2	3	4	5	6	7
11. I take the time to see things from different perspectives before reacting.	1	2	3	4	5	6	7
12. I keep playing the situation over and over again in my head	1	2	3	4	5	6	7
13. I consider the situation for multiple viewpoints before responding.	1	2	3	4	5	6	7
14. I feel like I lose control over my thoughts and emotions.	1	2	3	4	5	6	7
15. It's hard for me to shift my attention away from negative thoughts or feelings.	1	2	3	4	5	6	7
16. I find it easy to look for something positive, even when I am stressed.	1	2	3	4	5	6	7
17. I control negative thoughts and emotions by modifying the way I think about the situation.	1	2	3	4	5	6	7
18. I get rid of negative thinking by re-evaluating the situation.	1	2	3	4	5	6	7
19. I think of a plan of what to do best before acting.	1	2	3	4	5	6	7
20. It is easy for me to ignore distracting thoughts.	1	2	3	4	5	6	7
21. It's hard for me to ignore negative emotions once they have been provoked.	1	2	3	4	5	6	7
22. I can think of multiple coping options before deciding how to respond.	1	2	3	4	5	6	7

23. I look for many strategies of dealing with the situation.							
24. I get rid of negative emotions by changing the way I think about the situation.	1	2	3	4	5	6	7
25. I play out the consequences of various actions before choosing the best one.	1	2	3	4	5	6	7
26. I get easily distracted by upsetting thoughts or feelings.	1	2	3	4	5	6	7
27. I approach the situation from multiple angles.	1	2	3	4	5	6	7
28. My thoughts and emotions interfere with my ability to concentrate.	1	2	3	4	5	6	7
29. I take the time to think of more than one way to resolve the problem.	1	2	3	4	5	6	7
30. It is easy for me to shift my attention to other things if I am upset.	1	2	3	4	5	6	7
31. I can easily deal with my thoughts and feelings.	1	2	3	4	5	6	7
32. I play out the situation in my mind before responding.	1	2	3	4	5	6	7
33. I manage my thoughts or feelings by reframing the situation.	1	2	3	4	5	6	7
34. I find it difficult to think of many options for resolving the situation.	1	2	3	4	5	6	7
35. The same thoughts keep going through my mind again and again.	1	2	3	4	5	6	7
36. I can’t stop dwelling on my feelings.	1	2	3	4	5	6	7
37. My thoughts repeat themselves over and over again.	1	2	3	4	5	6	7

38. Putting a positive spin on a bad experience comes fairly easy to me.	1	2	3	4	5	6	7
39. I have difficulty controlling my thoughts and emotions.	1	2	3	4	5	6	7
40. I can't think about anything else except for the situation.	1	2	3	4	5	6	7
41. I find it easy to set-aside unpleasant thought or emotions.	1	2	3	4	5	6	7
42. It is easy for me to reassess a negative experience into a positive one.	1	2	3	4	5	6	7
43. I can easily to suppress upsetting memories.	1	2	3	4	5	6	7
44. I take the time to think of several ways to best cope with the situation before acting.	1	2	3	4	5	6	7

Appendix J

UCLA Loneliness Scale (UCLA-L; Russell, 1996)

The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described by writing a number in the space to the right of each statement using the following rating scale:

1 Never **2 Rarely** **3 Sometimes** **4 Always**

1. How often do you feel that you are "in tune" with the people around you? _____
2. How often do you feel that you lack companionship? _____
3. How often do you feel that there is no one you can turn to? _____
4. How often do you feel alone? _____
5. How often do you feel part of a group of friends? _____
6. How often do you feel that you have a lot in common with the people around you? _____
7. How often do you feel that you are no longer close to anyone? _____
8. How often do you feel that your interests and ideas are not shared by those around you? _____
9. How often do you feel outgoing and friendly? _____
10. How often do you feel close to people? _____
11. How often do you feel left out? _____
12. How often do you feel that your relationships with others are not meaningful? _____
13. How often do you feel that no one really knows you well? _____
14. How often do you feel isolated from others? _____
15. How often do you feel you can find companionship when you want it? _____
16. How often do you feel that there are people who really understand you? _____
17. How often do you feel shy? _____

18. How often do you feel that people are around you but not with you? _____

19. How often do you feel that there are people you can talk to? _____

20. How often do you feel that there are people you can turn to? _____

21. If you feel lonely, how long have you been feeling this way?
_____I'm not lonely;

OR please specify: for the past _____days; OR _____months; OR _____years

Appendix K

Life Orientation Test-Revised (LOT-R; Scheier et al., 1994)

For each of the following statements, please indicate the extent to which the statement applies to you. Please respond as you really feel, rather than how you think 'most people' feel. Use the rating scale indicated.

	Never	Seldom	Sometimes	Often	Always Almost
1. In uncertain times, I usually expect the best.	0	1	2	3	4
2. It's easy for me to relax.	0	1	2	3	4
3. If something can go wrong for me, it will.	0	1	2	3	4
4. I'm always optimistic about my future.	0	1	2	3	4
5. I enjoy my friends a lot.	0	1	2	3	4
6. It's important for me to keep busy.	0	1	2	3	4
7. I hardly ever expect things to go my way.	0	1	2	3	4
8. I don't get upset too easily.	0	1	2	3	4
9. I rarely count on good things happening to me.	0	1	2	3	4
10. Overall, I expect more good things to happen to me than bad.	0	1	2	3	4

Appendix L

Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1985)

Please indicate your degree of agreement or disagreement with each of the following statements by circling the appropriate option for each statement.

-3 Strongly untrue of me	-2 Moderately	-1 Mildly	0 Neither true nor untrue	1 Mildly	2 Moderately	3 Strongly true of me

1. On the whole, I am satisfied with myself.	-3	-2	-1	0	1	2	3
2. At times I think I am no good at all.	-3	-2	-1	0	1	2	3
3. I feel that I have a number of good qualities.	-3	-2	-1	0	1	2	3
4. I am able to do things as well as most other people	-3	-2	-1	0	1	2	3
5. I feel I do not have much to be proud of.	-3	-2	-1	0	1	2	3
6. I certainly feel useless at times.	-3	-2	-1	0	1	2	3
7. I feel that I'm a person of worth, at least equal plane with others.	-3	-2	-1	0	1	2	3
8. I wish I could have more respect for myself.	-3	-2	-1	0	1	2	3
9. All in all, I am inclined to feel that I am a failure.	-3	-2	-1	0	1	2	3
10. I take a positive attitude toward myself.	-3	-2	-1	0	1	2	3

Appendix M

Collective Self-Esteem Scale (CSES; Luhtanen & Crocker, 1992)

We would like you to describe how you feel about your identity as a member of the social groups you belong to. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions. Please read each statement carefully, and respond by using the following scale:

-3	**-2**	**-1**	**0**	**1**	**2**	**3**
Strongly Disagree						**Strongly Agree**

_____ 1. I am a worthy member of the social groups I belong to.

_____ 2. Overall, my social groups are considered good by others.

_____ 3. In general, others think that the social groups I am a member of are unworthy.

_____ 4. I feel I don't have much to offer the social groups I belong to.

_____ 5. I am a cooperative participant in the social groups I belong to.

_____ 6. Most people consider my social group, on average, to be more ineffective than other social groups.

_____ 7. Overall, my group memberships have very little to do with how I feel about myself.

_____ 8. I often feel I'm a useless member of my social groups.

_____ 9. The social groups I belong to are unimportant to my sense of what kind of person I am.

_____ 10. In general, I'm glad to be a member of the social groups I belong to.

_____ 11. In general, others respect the social groups that I am a member of.

_____ 12. In general, belonging to social groups is an important part of my self-image.

_____ 13. I often regret that I belong to some of the social groups I do.

_____ 14. The social groups I belong to are an important reflection of who I am.

_____ 15. Overall, I often feel that the social groups of which I am a member are not worthwhile.

_____ 16. I feel good about the social groups that I belong to.

Appendix N

Social Provisions Scale (SPS; Cutrona & Russel, 1987)

In answering the next set of questions, please think about your current relationships with **members of the social group you identify with the most.** If you feel a question accurately describes your relationships with these members, you would say "yes". If the question does not describe your relationships, you would say "no". If you cannot decide whether the question describes your relationships with members, you may say "not sure".

	No	**Not sure**	**Yes**
1. Are there members you can depend on to help you, if you really need it?	1	2	3
2. Do you feel you could not turn to members for guidance in times of stress?	1	2	3
3. Are there members who enjoy the same social activities that you do?	1	2	3
4. Do you feel personally responsible for the well-being of members?	1	2	3
5. Do you feel members do not respect your skills and abilities?	1	2	3
6. If something went wrong, do you feel that none of these members would come to your assistance?	1	2	3
7. Do your relationships with members provide you with a sense of emotional security and well-being?	1	2	3
8. Do you feel your competence and skill are recognized by members?	1	2	3
9. Do you feel that none of these members share your interests and concerns?	1	2	3
10. Do you feel that none of these members really rely on you for their well-being?	1	2	3
11. Is there a trustworthy member you could turn to for advise, if you were having problems?	1	2	3
12. Do you feel you lack emotional closeness with members?	1	2	3

Appendix O

Unsupportive Social Interactions Inventory (USII-A; Ingram et al., 2001)

Please think about times when you've turned to **your social group** for support in regards to a situation that was bothering you (i.e., frustrations or disappointments with friends, family, school, health, work or anything else that is important to you). For each of the statements below, **please circle the number that indicates how frequently your social group responded in this way when you went to them for support.**

	None				A lot
1. My partner thought I was over-reacting to the situation	0	1	2	3	4
2. When I was talking about the issue/situation with my partner, he did not give me enough of his time, or made me feel like I should hurry	0	1	2	3	4
3. My partner made "should/shouldn't have" comments about my role in the situation, such as, "You shouldn't have ...."	0	1	2	3	4
4. My partner didn't seem to know what to say, or seemed afraid of saying/doing the "wrong" thing	0	1	2	3	4
5. My partner refused to provide the type of help or support I was looking for	0	1	2	3	4
6. After becoming aware that I was dealing with something that I found difficult or distressing, my partner responded with uninvited physical touching, such as hugging	0	1	2	3	4
7. My partner said I should look on the bright side	0	1	2	3	4
8. My partner said "I told you so." or made some similar comment to me about my situation	0	1	2	3	4
9. My partner seemed to be telling me what he thought I wanted to hear	0	1	2	3	4
10. In responding to me about my situation, my partner seemed disappointed in me	0	1	2	3	4
11. When I was talking to my partner about my situation, he changed the subject before I wanted to	0	1	2	3	4
12. My partner felt that I should stop worrying about the situation and just forget about it	0	1	2	3	4

13.	My partner asked me "why" questions, such as, "Why did/didn't you …"	0	1	2	3	4
14.	My partner felt that I should focus on the present and/or future, and that I should forget about what's happened and get on with my life.	0	1	2	3	4
15.	My partner tried to cheer me up when I was not ready to cheer up about the situation	0	1	2	3	4
16.	My partner refused to take me seriously	0	1	2	3	4
17.	My partner told me to be strong, to keep my chin up, or that I shouldn't let it bother me	0	1	2	3	4
18.	When I was talking to my partner about what was bothering me, he did not seem to want to hear about it	0	1	2	3	4
19.	My partner told me that I had gotten myself into the situation in the first place, and that now I must deal with the consequences	0	1	2	3	4
20.	My partner did something for me that I wanted to do and could have done for myself, as if he thought I was no longer capable	0	1	2	3	4
21.	My partner discouraged me from expressing feelings about my situation, such as anger, hurt or sadness	0	1	2	3	4
22.	My partner felt that 'it could have been worse' or that 'it was not as bad as I thought'	0	1	2	3	4
23.	From my partner's tone of voice, expression, or body language, I got the feeling that he was uncomfortable talking with me about my problem	0	1	2	3	4
24.	My partner made comments which blamed me or tried to make me feel responsible	0	1	2	3	4