PROTECTIVE FACTORS AND RISK FACTORS THAT INFLUENCE PERCEPTIONS OF STRESS

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PROTECTIVE FACTORS AND RISK FACTORS THAT INFLUENCE PERCEPTIONS OF STRESS

A Thesis

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Department of Psychology
Abstract

of

PROTECTIVE FACTORS AND RISK FACTORS THAT INFLUENCE PERCEPTIONS OF STRESS

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Ashley Alana Jarvis

This study examined different protective and risk factors that influence perceived stress. Participants (N = 254) were recruited from introductory psychology courses in exchange for course credit. Six surveys were used to examine the dependent variable of perceived stress and the independent variables of positive and negative affect, life satisfaction, religious orientation, spirituality, and demographic information. Standard multiple regression analyses indicated that the chosen variables had a significant effect on the dependent variable of perceived stress. Specifically, the combination of higher levels of spirituality, negative affect, and extrinsic religious orientation, and lower levels of positive affect, intrinsic religious orientation, and life satisfaction in combination significantly predicted perceived stress. Previously reported findings of differences between genders and ethnicities were not supported by the results of this study, however this could be due to the heterogeneity of the student population.

_______________________, Committee Chair
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Chapter 1

INTRODUCTION

When researchers began to study ‘stress’ in the early twentieth century, it was defined as an element that caused “physiological and/or psychological fatigue” (Waterman, 1909, p. 130). The early studies done on stress focused on elements of Post-Traumatic Stress Disorder, as it was defined in the early twentieth century (PTSD; Taylor, E., 1915; Owens, W. & Heidbreder, E., 1947), and ‘strain’ in family-life (Tufts, 1907) and work (Strong, 1916).

In the 1930s, the term ‘strains’ gave way to a new term ‘stress’. During this decade, research on stress took on a different focus, but was still sparse and little was known about causes or ways to remove stress. Van de Castle (1994) examined the relationships between dreams and emotional stresses, however, these were initially explored by Bagby (1930) and Breger, Hunter, and Lane (1935). For example, Bagby (1930) determined that dreams created a way to confront and attempt to resolve current stresses. In the 1940s, an increasing number of studies examined how individuals reacted in various stressful (mainly occupational) situations. Freeman, Pathman, Katzoff, and Manson (1942) examined how police officers reacted and/or behaved in stressful situations. Their results suggested that officers’ reactions were less predictable in stressful situations than in non-stressful ones. The participants in experiments on stress began to include students and their topics extended to students’ ability to retain information or learn when in stressful situations. Glixman (1949) compared students’
ability to remember completed and non-completed activities when they were in stressful, compared to non-stressful, environments. He determined that the former settings decreased students’ ability to remember non-completed activities.

The 1950s marked an expansion in the number of studies examining stress, but the focus continued to be on the influence of stress on an individual’s performance (Deese, Lazarus, & Osler, 1952). Researchers explored how stress influenced memory, learning, and behaviors in a variety of situations (Beam, 1955; Caron & Wallach, 1957; Cowen, 1952; Faw, 1957; Taylor, 1958). Faw (1957) found that students who study and pre-learn information are more likely to be successful in recalling and using this pre-learned information in a stressful situation. Cowen (1952) found that participants put in a ‘stress’ group had significantly less creative solutions to a given problem than participants who were put in a ‘praise’ group. Studies examined how stress influenced intrinsic motivation (Vogel, Lazarus, Raymond, 1959), responses to different learning tasks (Heilbrun, 1959; Katchmar, Andrews, & Ross, 1958; Taylor, 1958), and attitudes (Levanway, 1955). During this time, researchers started to examine the physical effects of stress (Berkeley, 1952), although this was not studied extensively until later decades. Researchers also began to examine what factors might increase stress, as well as what personality characteristics and developmental factors influenced stress (Deese & Lazarus, 1953).

In the 1960s, an increasing number of studies examined the interaction between stress and an individual’s development. This developmental focus began with research on how levels of stress influence an adolescent’s goals (Rao & Russell, 1960). Rao and
Russell (1960) found that adolescents created fewer goals for themselves as stress increased. Furthermore, if an adolescent failed to meet his/her first self-set goal, his/her level of stress increased, and, with that increase, s/he was less likely to meet any further goals s/he set for himself/herself. These findings have significant implications for educational settings. In 1966, Lazarus first established the presence of a feedback loop between stress and further stress by showing that an individual’s perception of stressful events could influence his/her subsequent level of stress (Lazarus, 1966, 1977).

During the 1970s and 80s, researchers strived to make their research more quantitative, by creating various tests and scales for evaluating causes and levels of stress (Carver, Scheier & Weintraub, 1989; Karst & Most, 1973; Weyer & Hodapp, 1975). They applied these measures in a number of creative studies that tended to focus on “personal and contextual factors” (Cohen, 1983, p. 386) influencing stress. Coburn (1975) discovered that there was a connection between the negative outcomes associated with stress and the measured level of feeling stressed. Researchers also explored how an individual’s ability to control changes in situations or events influenced his/her level of stress (Anderson, 1977; Averill, 1973; Geer, Davison & Gatchel, 1970; Houston, 1972; Lauer, 1974). Geer, Davison and Gatchel (1970) found that men who felt they had control over the duration of a shock impulse showed less reaction to the shock than those who felt they had no control over it. This study had practical implications: individuals might experience less stress if they believed they had control over a stressful situation, independent of whether or not they actually did. Lauer (1974) determined that the desirability of a change influenced the level of stress created by the change. Also in the
1970s, psychologists began to examine the socio-demographic factors that influenced stress (Coburn, 1975). Psychologists expanded previous studies involving the physical effects of stress, although this topic was not thoroughly explored until later decades. For example, Sakar and Mukhopadhyay (2008) discussed how several sets of researchers collected data showing that perceived stress influences cardiovascular disease, in both men and women, by increasing depression and mortality rates (Harburg, Blakelock, & Roeper, 1979; Johnson, Schork, & Spielberger, 1987). In the 1970s, researchers also started to differentiate chronic from acute stress, using rat models (Mikhail, 1971; Pare & Isom, 1975; Riege & Morimoto, 1970). For example, Mikhail (1971) found that chronic stress increased sympathetic nerve activity in rats more than acute stress did. The distinction between acute and chronic stress was not a focus of human research until the 1980s, when studies of stress achieved even greater extent and depth.

Many modern day researchers credit studies in the 1980s for furthering our understanding of a number of previously unexplored aspects of stress. Miller and Smith (2010), Panzarino (2010) and Sagy (2002) noted that how earlier researchers referred to an environment, event, or situation that created stress as a ‘stressor’ and established that stressors could be both acute (short-term) or chronic (long-term; Cohen, 1983; Cohen & Weinstein, 1981; McGonagle & Kessler, 1990). In the 1980s, acute stress was defined as a physical reaction occurring in response to a situation perceived as being dangerous (Cohen, 1983; Cohen & Weinstein, 1981; McGonagle & Kessler, 1990). Panzarino (2010) cites previous studies that determined acute stressors include, but are not limited to, loud or irritating noise, acute isolation, and government-sanctioned, personal, or
criminal violence (Cohen, 1983; Cohen & Weinstein, 1981). Both Miller and Smith (2010) and Panzarino (2010) discuss previous researchers’ definition of chronic stress as being a response to continuously stressful situations. Chronic stressors include difficulties at work or in relationships, prolonged isolation, loneliness, depression, and monetary concerns (Cohen, 1983; Cohen & Weinstein, 1981). This research had applications to the field of mental health. Thoresen and Eagleston (1983) suggested that extended chronic stress could create a variety of problems in preschool to graduate school-aged students. Stress was associated with individuals withdrawing from their social lives and/or, turning to alcohol or drug abuse. It also appeared to influence various cognitive elements (Thoresen & Eagleston, 1983). In 1992, Gelfand, Teti, and Fox expanded on previous research by exploring how maternal stress and/or temperament might influence parent-child relationships, child development, and an infant’s ability to control and focus immediate reactions, emotions, and behaviors (Conger, R. D., Kropp, J.P., Lahey, B.B., McCarty, J.A., & Yang, R.K., 1984; Weinraub & Wolf, 1983). As stated by Gelfand, Teti, and Fox (1992), a negative maternal temperament often caused by increased levels of stress could adversely influence a child’s level of shyness, sadness, and fearfulness (Weinraub & Wolf, 1983).

Also during the 1980s, researchers began to explore how environmental factors could influence different elements of chronic stress. One specific research topic involved the 1979 nuclear accident at Three Mile Island (Baum, Collins, & Singer, 1983; Baum, Gatchel, & Schaeffer, 1983). In that accident, a Pennsylvania nuclear power plant malfunctioned and released large quantities of radioactive gas. Although the reactor was
eventually brought under control, the accident caused great stress and worry to individuals living nearby (Baum, Gatchel, & Schaeffer, 1983). Baum, Collins and Singer (1983) and Baum, Gatchel and Schaeffer (1983) found that individuals living near Three Mile Island experienced more chronic stress than individuals living near un-damaged nuclear power plants. Also during the 1980s, researchers were beginning to study how stress can interact with various mental illnesses. By the end of the 1980s, researchers had established that a number of different factors could increase or decrease stress, a few of the psychological and physical dangers of stress, different types of stress that an individual can experience, and ways that stress can influence mental illness. For example, Billings and Moos (1984) found that individuals with unipolar depression showed more severe symptoms when experiencing chronic stresses.

In the 1980s and continuing into the 1990s, researchers began to explore the concept of perceived stress, and the different factors that increased or decreased an individual’s perception of being under stress. ‘Perceived stress’ became defined as the “degree to which situations in one’s own life situations are appraised as stressful” (Cohen, 1983, p. 385). One of the most widely used measures to evaluate perceived stress, The Perceived Stress Scale, was developed at this time (Cohen, 1983). Bryant, G.W., Gadzella, B., Ginther, D.W., and Tomcala, M. (1990) studied the effects of gender, age and job classification on perceived stress. They found that participants in younger age groups self-reported higher levels of perceived stress than the oldest age groups, women self-reported higher levels of stress than males, and participants in midlevel positions self-reported higher levels of perceived stress than participants in executive positions.
(Gadzella et al., 1990). Another study examined the relationship between level of alcohol consumption and perceived stress in males (Cole, Tucker, & Friedman, 1990). Cole, Tucker, and Friedman (1990) found that participants who abstained from drinking alcohol reported less perceived stress than moderate drinkers, and that moderate drinkers reported less perceived stress than heavy drinkers. Similarly, Mitic, McGuire, and Neumann (1985) found that non-smoking males had the overall lowest levels of perceived stress, while heavily smoking males had the highest levels of perceived stress overall. Non-smoking or occasionally smoking females had lower perceived stress than regular or heavily smoking females. Participants self-reported schoolwork, parents, money, and appearance as causes of perceived stress (Mitic, McGuire, & Neumann, 1985).

In the late 1980s, researchers began to link levels of perceived stress to a variety of factors, including positive and negative affect (Watson, 1988), and social support (Duran, Turner, & Lund, 1989; Jayaratne & Chess, 1984). Watson (1988) found perceived stress to be highly correlated with negative affect, but not strongly correlated with positive affect. However, another study showed that high perceptions of stress relate to both negative and positive affect towards current events. This study also suggested that higher levels of perceived stress were associated with more negative, intense, and prolonged reactions to daily events and the stresses in daily life (Eck, Nocolson, & Berkhof, 1998).

The study of perceived stress expanded even further at the end of the twentieth century and first decade of the twenty-first century, with researchers exploring physical
effects of stress, different protective and risk factors for perceived stress, and gender differences. During this last twenty years, the relationship between positive and negative affect and perceived stress has been studied in more depth. Graham and Maybery (2001) found that negative affect was moderately positively correlated with an individual’s perceived stress. They suggested that negative affect could be a very strong risk factor for increasing stress perception. Graham and Maybery (2001) also found that positive affect was moderately negatively correlated with an individual’s perceived stress and could be a strong protective factor against perceived stress.

During this time, researchers also began to link various physiological effects to stress. Although a few studies examined this during the late 70s and 80s (Gore, 1981; Harburg, Blakelock, & Roeper, 1979; Johnson, Schork, & Spielberger, 1987), it was only briefly touched on. Discovering the connection between stress and physiological elements allowed individuals who might have questioned the importance of studying ‘perceived stress,’ to see that, while it constitutes a perception, perceived stress is also a measurable and meaningful entity.

In recent years, international studies have shown that perceived stress influences individuals’ physical and psychological well-being (Kim et al., 2009; Pensonen, Raikkonen, Heinonen, & Koms, 2007; Repetti & Woods, 1997). Significant strides have been made in characterizing the physical and psychological effects of stress. Researchers have confirmed that stress can cause and influence the outcome of health problems ranging from rashes and headaches to gastrointestinal dysfunction, pain, heart attacks, blood pressure, and functions of the immune system. In one study examining a weight
loss program for individuals with Type 2 diabetes, Kim et al. (2009) found that participants with low levels of perceived stress lost more weight than those with high levels of perceived stress.

Earlier studies on parent-child development in relation to perceived stress were expanded at the end of the twentieth century. In 1994, Repetti and Wood found that infants of parents with higher stress levels show decreased ability to focus their attention. Crowson, M.M, Delgado, C.E.F., Morales, M., Mundy, P., and Neal, A.R. (2005) expanded on this study and hypothesized that Repetti and Wood’s (1994) findings could be due to the parent distancing him/herself from the child. This would lead to fewer moments of ‘attention connection’ between the parent and child. Crowson et al. (2005) further hypothesized that these ‘attention connection’ moments are necessary for a child to develop the ability to focus and self-regulate his/her attention. Repetti and Wood (1997) followed up their earlier studies with one showing that job-related parental stress are strongly predictive of how the parent will act with his/her child. This study found that parents with high levels of stress become emotionally and behaviorally separated from their child, thereby decreasing parent/child interaction (Repetti, 1994; Repetti & Wood, 1993, 2007).

The past two decades have been marked not only by deeper and broader exploration of the description and correlates of perceived stress, but also by examination of how basic factors might modulate perceived stress. These factors include gender, ethnicity, age, coping style, religiousness, relationship status, life satisfaction, and social support.
Research on gender has found that Caucasian women experience higher levels of perceived stress for life events than African American women (Vines et al., 2009); however, Kim et al. (2009) found that African American women experience more stress than Caucasian women. Bachen, E.A., De Groat, C.L., Dimas, J.M., Flores, E., Pasch, L.A., and Tschann, J.M. (2008) found that Hispanic men and women have greater levels of perceived stress due to perceived discrimination. However, Mechlin (2009) found no ethnic differences in levels of perceived stress, suggesting that much research still needs to be done to see whether differences truly do exist.

Studies of gender differences consistently find that females report more stress and experience greater physiological responses to stress than do males (Dumlao et al., 2000; Misra & McKean, 2000). However, males appear to be less able to acknowledge feelings of stress. Some researchers suggest that this is because social norms teach males that stress acknowledgement would be a sign of weakness, dependency, and lack of masculinity (Misra & McKean, 2000). Researchers have recorded specific physiologic differences in males and females’ physical responses to perceived stress (Kim et al, 2009; Misra & McKean, 2000; Mukhopadhyay & Sarkar, 2008). Mukhopadhyay and Sarkar (2008) found that in males, stress influences diastolic blood pressure, overall cholesterol level, and ratio of overall cholesterol and high-density lipoprotein cholesterol. In females, stress influences low-density lipoprotein cholesterol, ratio of overall cholesterol and high-density lipoprotein cholesterol, body mass index (BMI), waist size, and waist to hip ratio. These patterns all put individuals at risk for obesity, hypertension, Type 2 diabetes, cardiac disease, and other obesity-related illnesses (Kim et al., 2009; Mukhopadhyay &
Sarkar, 2008). In women, levels of stress also increase medical complications in pregnancy, although it is still unknown if this relationship is a causal one (Buekens, P., Dole, N., Hertz-Picciotto, I., McMahon, M.J., Savitz, D.A., & Siega-Riz, A.M., 2003; Glynn, L., Hobel, C.J., Sandman, C.A. & Schetter, C.D., 2008; Hedegaard et al., 1993). One study found that stress during pregnancy was associated with both pre-term delivery and lower infant birth-weights (Cannella, D., DeVincent, C., Graham, J.E., et al., 2008). Another study supported that high levels of perceived stress were associated with shorter gestational periods and pre-term delivery, and conversely, women who delivered at full term had much lower levels of perceived stress than those who delivered at pre-term (Glynn et al., 2008). This suggests that applying protective measures to decrease perceived stress levels can help protect both the mother and the baby from the negative results of a pre-term delivery (Buekens et al., 2003; Cannella, D., DeVincent, C., Graham, J.E., et al., 2008; Glynn et al., 2008; Hedegaard et al., 1993; Latendresse, 2009).

Throughout the early 2000s, psychological researchers expanded on the research exploring various effects that perceived stress had on development of and ability to cope with mental illnesses and addictions. Perceived stress has been shown to negatively influence mental health and coping abilities (Bovier, Chamot, & Perneger, 2002; Laudet & White, 2004). Bovier, Chamot, and Perneger (2002) found that stress consistently had a strong negative relationship with mental health. Psychological issues that perceived stress can influence include addiction, onset of mental illnesses; coping with disorders, as will be described in more detail below. A variety other studies found that there is a connection between stress and substance abuse (Bond & Rose, 2008; Ventegodt, Merrick,
& Anderson, 2003). Several researchers have noted that drug addicts indicate that they use illicit drugs to self-medicate and temporarily remove psychological pain (Bond & Rose, 2008; Ventegodt, Merrick, & Andersen, 2003). Individuals with drug addictions have been found to have higher levels of perceived-stress, compared to non-addicts. One study done in 2003 found that teens experiencing high levels of perceived-stress were two times more likely to turn to substance use, compared to teens with low levels of perceived-stress (National Center on Addiction and Substance Abuse at Columbia University, 2003). Laudet and White (2004) found that individuals were more successful at recovering from substance addictions when they had social support systems, spirituality, religiousness, and greater life satisfaction. Laudet and White (2004) tied the success of these factors to their removing or significantly decreasing perceived stress. Studies have shown that perceived-stress is a frequent trigger for alcohol or substance abuse relapses (Knight, E., Laudet A, Magura, S., & Vogel, H.S., 2000). Broome, K.M., Brown, B.S., Flynn, P., Joe, G.W., and Simpson, D.D. (2003) published a study using participants of ethnic minority who had been crack or heroin addicts in New York City. This study found that the length of time to achieve recovery was linked to the level of perceived stress. Peltzer et al. (2008) found that perceived stress, in combination with low self-esteem, and anger control problems, increases an individual’s suicide risk. Perceived stress also appears to be an important influence on the development of different types of eating disorders. Striegel-Moore, et al. (2007) found that individuals who develop binge-eating disorders often showed higher levels of perceived stress before they were 14 years old. This suggests that higher perceived stress levels may precede the onset of binge-
eating disorders. In summary, there is evidence to suggest a causal relationship between perceived stress and an eating disorder but this has yet to be confirmed.

The protective factors of religiousness and spirituality in relation to perceived stress were a topic of great interest during the late 1990s and 2000s. Religiousness and spirituality are consistently associated with lower levels of perceived stress and a less negative affect (Koenig et al., 2001). Studies have found that individuals who are more spiritual or religious have higher measured levels of positive affect, which is associated with lower levels of perceived stress (Koenig et al., 2001; Segrin, C., Badger, T., Dorros, S.M., Lopez, A.M., & Meek, P., 2007; Segrin, C., Domschke, T. J., Donnerstein, C., Hanzal, A., & Taylor, M., 2007; Pargament, 1997). Meyers and Reed (1991) found that having a stronger overall intrinsic religious orientation was associated with fewer health problems and a positive affect more often than extrinsic religiousness or no religious orientation.

Many studies have suggested that attending religious events can protect against stress. The authors of these studies suggest that this is due to the development of a religion-based coping style that reduces negative affect and increases positive affect (Segrin, C. et al., 2007, Segrin, C., Domschke, T. J., Donnerstein, C., Hanzal, A., & Taylor, M., 2007; Paragament, 1997). This religion-based coping style includes the use of a support system generated through attendance at religious services and events. Paragament (1997) found that individuals with increased religiousness use religious coping methods more frequently and, therefore, have less perceived stress. Paragament (1997) also found that high religiousness or spirituality is associated with measurements
indicating more positive affect, less negative affect, greater life satisfaction and fewer perceived stresses. This and other research suggests that religiousness and spirituality are interactive factors. One study found that the correlation between them was consistently strong, with a median correlation coefficient of .54 (Czar, Meyer, & Park, 1998). Studies indicate that individuals feel that religion and spirituality give meaning and purpose to their lives. Payne et al. (1991) found that religiousness and spirituality are associated with individuals realizing their capabilities, experiencing personal success and sense of self-worth, as well as greater self-actualization and increased life satisfaction.

Although the relationship between age and perceived stress was studied a little in the 1980s (Whitman, 1985), it was not examined in depth until the early 2000s. Studies have suggested that age may have a strong impact on an individual’s level of perceived stress (Almeida, D.M., Sliwinski, M.J., Smyth, J.M., & Stawski, R.S., 2008; Aysan, F, Hamarat, E., Matheny, K.B., Steele, D., Thompson, D., & Zabrucky, K.M., 2001). Whitman (1985) found that younger students experience more stressful changes and events in their lives than older students. He suggested that was because younger students are leaving home for the first time to attend school and experience a much higher pressure for academic success than previously experienced in high school. Almeida, D.M., Sliwinski, M.J., Smyth, J.M., and Stawski, R.S. (2008) examined the interaction between negative affect and age in relation to levels of perceived stress. They found that older adults reported fewer daily stressors than did younger adults; however, both age groups expressed the same emotional reactions towards these daily stressors. Almeida, D.M. et al. (2008) also found that in older adults perceived stress was related to the
reported number of daily stressors but was unrelated to affect. In younger adults, perceived stress was related to both number of daily stressors and to having a negative affect. The authors suggest that daily stressors may have a greater impact on younger adults. Aysan, F., Hamarat, E., Matheny, K.B., Steele, D., Thompson, D., and Zabrucky, K.M. (2001) found that for young adults, perceived stress was more strongly associated with life satisfaction than were coping resources. The opposite was the case for middle and older-aged adults. Despite the apparent relationships among age, perceived-stress, and life-satisfaction, this area has not yet been further explored (Aysan, F. et al., 2001).

However, researchers have recently examined the relationships among age, defense mechanisms, and perceived stress. Despite the various age differences that other researchers have found, Coolidge, L., Mizuno, H. and Segal, D (2007) found that there were no differences in the use of adaptive defense mechanisms (Sublimination, Suppression, Humor) against perceived stress in young adults ($n = 259; M$ age = 19.7) and older adult ($n = 69; M$ age = 70.8). However, younger adults had higher scores on maladaptive defense mechanism scales (Acting Out, Passive-Aggression, and Regression). This was an important discovery because maladaptive defenses were highly correlated with perceived stress ($r = .57$). This suggests that younger adults experience higher levels of perceived stress than older adults due to more maladaptive defense mechanisms. It seems as though older adults may develop a decrease in maladaptive defense mechanisms (Coolidge, L., Mizuno, H. & Segal, D, 2007).

Although the connection between relationship status and perceived stress was studied briefly earlier, it seems to have been exhaustively explored in the 1990s and
2000s. One study found that being in a relationship and romantic kissing with a relationship-partner can decrease levels of perceived stress. A study by Boren, J.P., Floyd, K., Hannawa, A.F., Hesse, C., McEwan, B., and Veksler, A.E. (2009), found that individuals who increased romantic kissing with his/her significant other had lower levels of perceived stress when compared to the individuals who did not increase romantic kissing with his or her significant others. This suggests that having an active romantic relationship might act as a protective factor (Boren, J.P., Floyd, K., Hannawa, A.F., Hesse, C., McEwan, B., & Veksler, A.E., 2009).

However, Lengacher (1993) found that a close relationship was not necessarily protective. The effect depended on the specifics of the relationship; it may have a negative effect on perceived stress. Another study found that although having a significant other while in school can be a strong protective factor against stress, it acts as a risk factor if and when the partner fails to recognize the pressures and commitments associated with student life (Lengacher, 1993).

The study of life satisfaction and perceived stress continued to be examined into the 2000s. Perceived stress consistently influences life satisfaction in college students (Aysan et al., 2001). They also found an association among perceived economic well-being, life satisfaction, and perceived stress. Although studies in the past examined the connection between life satisfaction and perceived stress, it was not studied in detail until late 1990s and 2000s. During this time, Chang (1998) found that levels of life satisfaction were lower for students experiencing more stress. Graham and Maybery (2001) found that life satisfaction was moderately negatively correlated with an individual’s perceived
stress. They suggested that high life satisfaction could be a strong protective factor against perceived stress. These researchers also found that satisfaction with life was moderately negatively correlated with negative affect, and slightly positively correlated with positive affect (Graham & Maybery, 2001). This suggests that satisfaction with life, negative affect, positive affect, and stress perception all interact. A study conducted by Aysan, F., et al. (2001) found that perceived stress was only a moderate predictor of an individual’s overall satisfaction with life. Further, they found that having coping resources was a better predictor for satisfaction with life than simply perceived stress alone. Studies have found an inverse relationship between social skills and levels of perceived stress (Segrin, C. et al., 2007, Segrin, C., Domschke, T. J., Donnerstein, C., Hanzal, A., & Taylor, M., 2007). Segrin, C., Domschke, T. J., Donnerstein, C., Hanzal, A., and Taylor, M. (2007) also found that social skills were negatively associated with depression and positively associated with life satisfaction. It was also discovered in this study that having a social support system can help protect individuals from possibly harmful effects of stressful events (Segrin, C. et al., 2007, Segrin, C., Domschke, T. J., Donnerstein, C., Hanzal, A., & Taylor, M., 2007).

The purpose of this study was to examine the effects of various protective and risk factors, in combination with one another, in terms of their relation to perceived stress. Specifically, this study explored how negative affect, positive affect, religiousness, spirituality, and life satisfaction predict participant’s levels of perceived stress. Although these factors have been studied in previous research, this study differs from these studies by looking at the factors in combination as they predict perceived stress. By exploring
what factor(s) are associated with perceived stress and what factor(s) are associated with less perceived stress, it might be possible to clarify and strengthen guidelines for stress reduction. Based on the literature, I predict that life satisfaction, positive affect and negative affect will account for a greater proportion of variance than other variables
Chapter 2

METHOD

Participants

Two hundred and fifty-four undergraduate psychology students (52 males and 202 females) participated in this study. These participants were recruited from California State University, Sacramento and received one half-hour of research credit in partial completion of their course requirements. Students ranged in age from 17 to 45 years of age ($M = 20.93$, $SD = 4.19$), and were 56.3% Caucasian, 7.1% African American, 15.7% Asian American, 14.2% Hispanic, and 6.7% Other. Participants who selected “other” wrote in Slavik, Caucasian/African American, Russian, Asian/Indian, Caucasian/Hispanic, Caucasian/Asian American, Asian/Hispanic, East American Indian, Chinese/Dutch, Pacific Islander, and African American/Asian American. Participants were 47.6% single, 4.7% married, 0.7% divorced, 1.2% widowed and 45.7% in a relationship. To protect the participants’ anonymity, no identifying information was collected.

Design

A multiple regression analysis was used with the dependent variable of perceived stress and the independent variables of life satisfaction, positive and negative affect, religious orientation, and spirituality.
Materials

The dependent variable of perceived stress was measured through the Perceived Stress Scale (PSS; Cohen et al., 1983) examining an individual’s assessment of their life as stressful (i.e. unpredictable, uncontrollable, and overloading). This scale is a 10-item questionnaire concerning the participants’ perception of stressful event. Scores can range from zero to 40 with higher scores representing greater levels of stress than lower scores. Items in this measure by Cohen, Lamarck, and Mermelstein (1983) consist of questions such as “How often have you felt nervous or stressed?” and “How often have you felt confident about your ability to handle your personal problems?” Participants rated how often they had experienced these feelings in the last month on a 5-point Likert scale ranging from 0 (never) to 4 (very often). Alpha coefficients of .75 and .86 have been reported for this measure (Cohen, Lamarck, & Mermelstein, 1983).

The independent variables of positive and negative affect were measured through the Positive Affect and Negative Affect Scales (PANAS). This is a 20-item scale developed by Clark and Tellegren (1988), using a self-evaluation method to examine both positive and negative affect. The scale contains 10 adjectives for the negative affect dimension and 10 adjectives for the positive affect dimension. These adjectives describe feelings and mood level, and participants were instructed to estimate how they have felt during the past week. Responses are scored on a 5-grade scale ranging from 1 (not at all) to 5 (very much). To calculate a total negative affect score, the negative adjectives are summed, similarly, the positive adjectives are summed to provide a total positive affect score. Scores can range from 0 to 50 on each subscale, with higher scores suggesting a
more positive or negative affect than lower. This measure has been shown to have moderately good reliability and validity. Alpha coefficients of .86 to .90 have been reported for the positive affect scale, and .84 to .87 for the negative affect scale. The test-retest reliability over an 8-week period included scores of .47 and .68 for positive affect, and .39 and .71 for negative affect (Kercher, 1992; Varg, 1997; Watson, Clark & Tellegen, 1988).

The independent variable of life satisfaction was evaluated by the Satisfaction with Life Scale-Adapted. This 5-item scale developed by Diener et al. (1985) is used to examine an individual’s overall satisfaction of their life. This scale also examines an individual’s judgment of his or her life in comparison to self-set standards, not imposed by others. This measure uses a 5-point Likert-type response scale ranging from 1 (strongly disagree) to 5 (strongly agree). This version was adapted from the original measure which uses a 7-point Likert-Type response scale ranging from 1 (strongly disagree) to 7 (strongly agree). The five items are added together to calculate an overall satisfaction with life scale score. High scores suggest an individual is overall more satisfied with his/her life. The test-retest reliability for 2 weeks was .83, for 10 weeks, .50, for 1 month was .64, for 2 months was .82, and for 4 years was .54 which suggests there is overall moderate to very good reliability for this measure (Diener, et al., 1985; Pavot & Diener, 1993).

The independent variable of religiousness was evaluated by the Religious Orientation Scale. This is a 20-item, self-report scale created by Allport and Ross (1967). Responses are rated on a 5-point summative scale ranging from 1 (strongly disagree) to 5
(strongly agree). Higher scores represent greater intrinsic or extrinsic religious orientation. This scale evaluates intrinsic and extrinsic religious orientation, with nine items measuring intrinsic and 11 items measuring extrinsic. Intrinsic orientation has been defined as living your religion (Allport & Ross, 1967). In this type of religiousness, the reasons for being religious come from within a person, and faith is internalized and is the main motivation through life, religious elements are incorporated into more areas of life than just religion, and religion is an end to itself. Extrinsic orientation is defined as using his or her religion in order to gain something desirable (Allport & Ross, 1967). In this type of religiousness, reasons for religiousness are mainly external, religion is one of many motivations through life, religion is only part of the faith life element and is not incorporated throughout, and religion is used as a mean for other ends (i.e. to gain benefits through religiousness). Alpha coefficients of .79 have been reported for the intrinsic scale and .65 for the extrinsic scale (Genia, 1993; Gorsuch & McPherson, 1989).

The independent variable of spirituality was measured with the Index of Core Spiritual Experience (INSPIRIT) scale. This is a 7-item scale. It was created to evaluate how often an individual has faced a situation that has convinced him/her that God exists and that has brought out close feelings with God. All items have different possible answers, all on a 4-point scale. Higher scores suggest the individual having stronger spiritual experiences. For some questions there is an option “Have not had these experiences” for individuals to whom the situation does not apply. The reported Cronbach’s alpha of .90 suggests that this measure shows very good reliability (Friedman et al., 1991).
**Procedures**

Survey packets were created including a demographic survey as cover sheet, the perceived stress scale, life satisfaction scale, positive and negative affect scale, religious orientation scale, and spirituality scale. Survey packets were created so that each packet contained different randomized sequences of the five tests. Instructions specific to each scale were provided above the corresponding questions. Surveys took approximately one half hour to complete.

Participants were read and given the informed consent form. Participants were asked to sign and return a consent form. They were then given a survey to complete in a research room on the California State University, Sacramento campus in the presence of the researcher. Participants were instructed not to talk during the survey and/or discuss the surveys with others. Once completed, research packets were collected and participants were provided a debriefing form informing them of the details surrounding our study and contact information, as well as a verbal debriefing. Research sessions occurred over various times and days during a six-month period.
Chapter 3

RESULTS

Descriptive Analysis

The mean age of the 254 participants was 21 years ($SD = 4.29$) with a range of 17 – 45 years. The sample was mostly Caucasian and female. Demographic information is provided in Table 1.

Table 1

Demographic sample information

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Frequency</th>
<th>% (N =254 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>52</td>
<td>20.5</td>
</tr>
<tr>
<td>Female</td>
<td>202</td>
<td>79.5</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>143</td>
<td>56.3</td>
</tr>
<tr>
<td>Asian American</td>
<td>40</td>
<td>15.7</td>
</tr>
<tr>
<td>African American</td>
<td>18</td>
<td>7.1</td>
</tr>
<tr>
<td>Latino/a</td>
<td>36</td>
<td>14.2</td>
</tr>
<tr>
<td>Other</td>
<td>17</td>
<td>6.7</td>
</tr>
<tr>
<td>Relationship Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>121</td>
<td>47.6</td>
</tr>
<tr>
<td>Married</td>
<td>12</td>
<td>4.7</td>
</tr>
<tr>
<td>In a Relationship</td>
<td>116</td>
<td>45.7</td>
</tr>
<tr>
<td>Divorced</td>
<td>2</td>
<td>.8</td>
</tr>
<tr>
<td>Widowed</td>
<td>3</td>
<td>1.2</td>
</tr>
</tbody>
</table>
Table 2 presents a summary of descriptive results for the measures included in this study. The mean of the perceived stress scores for this sample was 26.48 ($SD = 5.71$), with scores ranging from 11 to 40. This is slightly higher than the normative scores of 23.18 ($SD = 7.31$) for females and 22.38 ($SD = 6.79$) for males (Cohen, 1983). Each participant reported experiencing some level of stress in his/her life. A small number of participants reported low levels of perceived stress. Most participants reported experiencing moderate to high levels of perceived stress. Although a small number of participants reported not being very satisfied with their lives, over half of the participants reported having moderate to high satisfaction with their lives. The participants in this study had a lower average score for life satisfaction than the normative sample group, suggesting that this sample group is overall less satisfied with their lives than other sample groups. The mean for positive affect was slightly lower than the normative mean. Nearly all participants also reported moderate to high levels of positive affect. However, slightly over half also reported high levels of negative affect, suggesting that many participants reported high levels of both positive and negative affect. The mean negative affect score for this study was slightly lower than the normative mean for negative affect. Participants ranged from the lowest possible spirituality score to the highest possible score. However, most participants reported moderate to high levels of spirituality. The mean spirituality score for this study was higher than the normative mean score. This suggests that although a small number of participants reported having had no or few spiritual experiences, the majority of participants reported having had many spiritual experiences. The majority of participants reported high levels of both extrinsic and
intrinsic religious orientation, suggesting that participants are religiously active both because of the desirable benefits that religion provides them as well as the internal religious motivation.

Table 2

Means, Standard Deviations, and Reliability values for scales used

<table>
<thead>
<tr>
<th>Scale</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Stress</td>
<td>26.48</td>
<td>(5.71)</td>
<td>.85</td>
<td>11-40</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>17.10</td>
<td>(3.88)</td>
<td>.83</td>
<td>7-25</td>
</tr>
<tr>
<td>Religious Orientation-I</td>
<td>26.10</td>
<td>(8.71)</td>
<td>.88</td>
<td>9-45</td>
</tr>
<tr>
<td>Religious Orientation-E</td>
<td>28.06</td>
<td>(5.98)</td>
<td>.72</td>
<td>12-48</td>
</tr>
<tr>
<td>Spirituality</td>
<td>2.69</td>
<td>(.79)</td>
<td>.92</td>
<td>1-4</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>34.01</td>
<td>(6.24)</td>
<td>.87</td>
<td>14-50</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>21.81</td>
<td>(6.45)</td>
<td>.82</td>
<td>10-50</td>
</tr>
</tbody>
</table>


Pearson correlations are shown in Table 3. Participants who reported higher levels of perceived stress were less satisfied with their lives, had less positive affect and greater negative affect. Greater life satisfaction was correlated with lower levels of perceived stress and negative affect, and greater amounts of spirituality and positive affect. Participants with greater amounts of intrinsic religious orientation also had higher levels of extrinsic religious orientation and were more spiritual.
Table 3

**Correlations between Measures**

<table>
<thead>
<tr>
<th>Measure</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Perceived Stress</td>
<td>-.48**</td>
<td>-.02</td>
<td>.04</td>
<td>-.01</td>
<td>-.46**</td>
<td>.64**</td>
</tr>
<tr>
<td>2 Life Satisfaction</td>
<td>_</td>
<td>.03</td>
<td>-.01</td>
<td>.13*</td>
<td>.51**</td>
<td>-.38**</td>
</tr>
<tr>
<td>3 Religious Orientation-I</td>
<td>_</td>
<td>.67**</td>
<td>.76**</td>
<td>.02</td>
<td>-.01</td>
<td></td>
</tr>
<tr>
<td>4 Religious Orientation-E</td>
<td>_</td>
<td>.51**</td>
<td>.05</td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Spirituality</td>
<td>_</td>
<td>.07</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Positive Affect</td>
<td>_</td>
<td></td>
<td>-.37**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Negative Affect</td>
<td>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


*p < .05. **p < .01.

**Multiple Regression**

A standard multiple regression analysis was done with perceived stress as the dependent variable, and life satisfaction, religious orientation-intrinsic, religious orientation extrinsic, spirituality, positive affect, and negative affect as the independent variables. When all six variables were entered into the regression analysis, the model accounted for almost 50% of the variance, $F (6, 247) = 41.06, p < .05, R^2 = .499$, adjusted $R^2 = .487$. Table 4 shows the results of this analysis. Higher levels of spirituality, negative affect, and extrinsic religious orientation, and lower levels of positive affect, intrinsic religious orientation, and life satisfaction in combination significantly predicted perceived stress. The variables with the strongest influence on perceived stress included
negative affect, life satisfaction, positive affect, and spirituality. The structure coefficients of negative affect \( r_s = .90 \), life satisfaction \( r_s = -.68 \) and positive affect \( r_s = -.65 \), indicate that individuals who are pessimistic are more at risk for experiencing perceived stress.

Table 4

*Summary of Multiple Regression Analysis for Variables Predicting Levels of Perceived Stress \((N = 254)\)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>( \beta )</th>
<th>( SEB )</th>
<th>( t )</th>
<th>Structure Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Satisfaction**</td>
<td>-.31</td>
<td>-.21</td>
<td>.08</td>
<td>-3.86</td>
<td>-.68</td>
</tr>
<tr>
<td>Religious Orientation-I</td>
<td>-.10</td>
<td>-.16</td>
<td>.06</td>
<td>-1.86</td>
<td>-.03</td>
</tr>
<tr>
<td>Religious Orientation-E</td>
<td>.02</td>
<td>.03</td>
<td>.06</td>
<td>.40</td>
<td>.06</td>
</tr>
<tr>
<td>Spirituality*</td>
<td>1.25</td>
<td>.17</td>
<td>.52</td>
<td>2.40</td>
<td>-.01</td>
</tr>
<tr>
<td>Positive Affect**</td>
<td>-.16</td>
<td>-.18</td>
<td>.05</td>
<td>-3.21</td>
<td>-.65</td>
</tr>
<tr>
<td>Negative Affect**</td>
<td>.44</td>
<td>.50</td>
<td>.04</td>
<td>9.85</td>
<td>.90</td>
</tr>
</tbody>
</table>

*Note.* \( R^2 = .496 \).


\*\( p < .05 \). **\( p < .01 \).

**Group Characteristics**

The influence of gender and ethnicity on perceived stress was also examined. The three largest ethnic sample groups were used for this analysis: Caucasian \((N = 143)\), Asian American \((N = 40)\), and Latino/a \((N = 36)\). A two-way between-subjects multivariate analysis of variance (MANOVA) was performed for the three majority
ethnic groups and gender with the seven variables of perceived stress, life satisfaction, positive affect, negative affect, spirituality, extrinsic religious orientation, and intrinsic religious orientation as dependent variables.

The multivariate results were all non-significant for the main effects of gender and ethnicity, as well as the interaction between gender and ethnicity, Pillai’s Trace = .06, $F (14, 416) = .86, p = .6$; gender, Pillai’s Trace = .05, $F (7, 207) = 1.5, p = .17$; and ethnicity, Pillai’s Trace = .09, $F (14, 416) = 1.37, p = .17$, and therefore post-hoc analysis was not conducted.
Chapter 4
DISCUSSION

The present study predicted that positive affect, high religiousness and/or spirituality, and high life satisfaction would predict lower perceived stress. Previous research found that perceived stress is influenced by the various elements examined in the current study. The results of this study both supported and contradicted the hypothesis above, as well as the previous research.

The previous research finding that greater positive affect, lower negative affect and greater life satisfaction were associated with lower levels of perceived stress (Eck, Nocolson, & Berkhof, 1998; Watson, 1988; Segrin, C. et al., 2007; Segrin, C., Domschke, T. J., Donnerstein, C., Hanzal, A., & Taylor, M., 2007) is supported by the results of the current study. These results are also consistent with the findings of Graham and Maybery (2001), in that negative affect acts as a strong risk factor for perceived stress, and positive affect acts as a strong protective factor against perceived stress. This suggests that negative affect and positive affect are similarly influential to college students, as with other populations, in regards to perceived stress. As with other previous research showing that life satisfaction, positive affect, and perceived stress are all interrelated (Chang, 1998; Aysan, F., Hamarat, E., Matheny, K.B., Steele, D., Thompson, D., & Zabrucky, K.M., 2001; Graham & Maybery, 2001), the current study found a negative association between life satisfaction and perceived stress. These results suggest
that students who were more positive overall experienced more life satisfaction and therefore, could be more protected from life stresses.

Results of this study partially supported the findings of Payne et al. (1991), in that I found an association between spirituality and life satisfaction, but there was no association found between religiousness and life satisfaction. The results of the current study also contradicted previously found associations among spirituality, religiousness, negative affect, and perceived stress (Koenig et al., 2001). This study found no relationship between spirituality and negative affect, religiousness and negative affect, or religiousness and perceived stress. In fact, the results of this study were in opposition to those of Koenig et al. (2001). These researchers found that spirituality was associated with lower levels of perceived stress, but the findings of the present study suggest that spirituality was associated with increased levels of perceived stress. This finding and the one concerning religiousness could be due to the composition of the study population being undergraduate college students. Many students lose their strength in religious beliefs after leaving home, or choose to explore alternate religious practice during college (Edmondson & Park, 2009). Spirituality is often seen as the alternative to religion (Burris, Smith, & Carlson, 2009), which is God-focused. Spirituality is focused on self-actualization and a belief in an overall higher power rather than a single God. It is possible that the positive association found between stress and spirituality could be secondary to the student feeling guilty about exploring new faiths or turning away from his/her strict religious upbringing. Further, the current study did not find that higher levels of spirituality or religiousness were associated with heightened positive affect, as
found by others (Pargament, 1997; Meyers & Reed, 1991; Segrin, C. et al. 2007). These finding suggests that religious or spiritual belief may be less of an influence on college students’ perceived stress, compared to perceived stress in other groups of individuals.

Previous research has identified other factors that may influence perceived stress. For example, multiple studies have found that women experience greater levels of perceived stress than men (Gadzella et al., 1990; Dumlao et al., 2001; Misra & McKeen, 2000). Some researchers suggest that this is due to men being raised to consider acknowledging stress as un-masculine (Gadzella et al., 1990). In the current study no difference were found in levels of perceived stress for gender or ethnicity. These results were consistent with previous research suggesting there are no ethnicity or gender differences in levels of perceived stress (Mechlin, 2009). However, the sample population of the present study was solely college students; this limits the study to a fairly homogeneous sample population of individuals in the process of furthering their education. Differences in ethnicity and gender may decrease when the sample group reaches a certain education level.

Limitations

The present study is limited in that the sample consisted of a convenience sample of college students. It therefore has limited generalizability to the population as a whole. Most of the participating students were white females between the ages of 18 and 25, who were either single or in a relationship. Education level, as mentioned above, could also have influenced these results. Future research could explore the differences in a less homogeneous sample population, and a more extensive age range.
Future Research

The results of this study suggest several possible areas for future research concerning the relationship between religion and students’ perceived stress. First, I did not investigate the influence of an individual’s specific religion on the level of perceived stress. Future research could examine the association between participants’ specific religion and their levels of perceived stress. Second, it might also be beneficial to examine whether there is an effective measure for evaluating the religiousness and spirituality of college students. For example, a few of the participants in the study expressed confusion after finishing the survey regarding their responses on the Religious Orientation Scale. Participants whom were not (very) religious reported being unaware as for how to respond appropriately to questions such as, “One reason for my being a church member is that such membership helps to establish a person in the community.” Third, the current measures of religiousness assume the participants participate in a monotheistic religion. It would be interesting to determine if this is appropriate for various student populations or if a measure oriented toward both mono-and polytheistic religions might be a stronger analytic tool instead.
REFERENCES


