

Posttraumatic Growth and Religiosity in Latino College Students Who Have Experienced Psychological Trauma

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Abstract

In the field of psychology, research on the aftermath of trauma has historically focused on the negative consequences. More recently, empirical evidence suggests that individuals often derive benefits or personal growth as a result of these extraordinary events, thus the term posttraumatic growth. The purpose of this future study is to assess the relationship between religiosity and posttraumatic growth in Latino/a college students at a large, predominately White institution using previously validated constructs. Traumatic events are universally experienced, therefore, growth is expected in all populations. Furthermore, research suggests that minorities may face additional stressors, called minority status stressors, which include discrimination and alienation. In addition, college Latino populations remain relatively understudied with respect to posttraumatic growth. Empirical data on posttraumatic growth and deriving benefits from difficult circumstances propose there are several factors that may enhance this experience. Among these factors are optimism, event-related rumination, gender of the individual, time elapsed since the traumatic experience, and religiosity (Calhoun, Cann, Tedeschi, & McMillan, 2000; Park, Cohen, & Murch, 1996; Updegraff & Marshall, 2005; Weiss, 2004). The instruments used for data collection will consist of the Posttraumatic Growth Inventory, Daily Spiritual Experience Scale, Impact of Event Scale-Revised, and a demographic questionnaire (Tedeschi & Calhoun, 1995; Underwood & Teresi, 2002; Weiss & Marmar, 1997). The measures, hosted on the Internet by Survey Monkey[®], will be distributed via e-mail to Latino/a students currently enrolled at the University of Maryland, College Park. Data analysis will consist of correlational analysis via multiple regressions, and ANOVA's to analyze the relationship between all variables. The computer program SPSS will be used to perform data analysis. The results expected based on previous findings in the literature include: (a) elevated levels of posttraumatic growth, (b) a relationship between the severity of the event and religiosity, (c) gender differences in posttraumatic growth, (d) greater religiosity and growth among recent migrant students, and (e) a positive correlation between religiosity and posttraumatic growth.

Introduction

Suffering resulting from traumatic events is a universal occurrence, and the ability of individuals as well as groups to emerge positively transformed from such events has been noted (Davis & Nolen-Hoeksema, 2001; Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2004; Tedeschi, Park, & Calhoun, 1998). Though the phenomena of personal benefits or growth resulting from traumatic events have always been present, they had remained relatively overlooked in the field of psychology. Traditionally, negative responses to severe stressors have served as the focus of the literature on stress and its repercussions (Tedeschi & Calhoun, 2004). Indeed, Rubonis and Bickman (1991) showed in their study that a relationship exists between traumatic events and the incidence of psychopathology. Tedeschi and Calhoun (1995) cite empirical evidence demonstrating other negative effects of such events, including negative affect, negative rumination, and negative behavioral changes. However, as more investigations have been conducted addressing the aftereffects of trauma, higher rates of personal growth than psychiatric disorder have been found (Tedeschi & Calhoun, 1995; Tedeschi & Calhoun, 2004). Although numerous terms have been used to label this concept, one of the widely accepted and recently coined terms to describe the process of personal growth following a traumatic event is posttraumatic growth (Tedeschi & Calhoun, 1995). Other terms used in the literature include stress-related growth (Park, Cohen, & Murch, 1996) and perceived benefits (Affleck, Tennen, Croog, & Levine, 1987; McMillen, Smith, and Fisher, 1997).

Posttraumatic growth (PTG) is the concept that an individual may experience cognitive growth following a traumatic event, and enhance their psychological functioning as a result (Tedeschi et al., 1998). Though PTG itself may be considered an outcome, it also incorporates the process of cognitive reconstruction following trauma that has challenged an individual's assumptions of the world (Park & Helgeson, 2006; Tedeschi et al., 1998). Davis and Noel-Hoeksama (2001) describe it as the effort put forth to reestablish one's cognitive understanding of life. In most instances however, the experience of growth does not imply the relief of psychological distress. Many investigations of perceptions of benefits show that although PTG is present, the trauma victims continue to experience a degree of psychological distress throughout (Cordova, Cunningham, Carlson, & Andrykowski, 2001; Frazier, Conlon, & Glaser, 2001; Salter & Stallard, 2004; Wortman, 2004).

Problem Statement

Posttraumatic growth (PTG) has been measured and analyzed for various populations that have been affected by different traumatic events, including cancer patients (Cordova et al., 2001), traffic accident survivors (Salter & Stallard, 2004), community violence victims (Updegraff & Marshall, 2005), adolescents (Milam, Ritt-Olson, & Unger, 2004) and Latina immigrants (Berger & Weiss, 2006). Research has also identified numerous factors, both related to the incident and related to the individual, that influence perceived benefits. These include dispositional and

context-specific optimism (Updegraff & Marshall, 2005), religiosity (Helgeson, Reynolds, & Tomich, 2006; Park et al., 1996), and time since diagnosis of cancer (which represents the traumatic event) (Cordova et al., 2001). Given both the universal occurrence of traumatic events and empirical studies demonstrating that college students must often find ways to manage following traumatic loss, the present study is warranted (Balk, 1997). In addition, despite the wealth of empirical data on PTG, few studies have looked at the construct specifically in Latino/a populations, and more empirical data is needed addressing the relationship between religiosity and PTG (Calhoun, Cann, Tedeschi, & McMillan, 2000; Calhoun & Tedeschi, 1998). Smedley, Myers, and Harrell (1993) suggested that minority college students may experience minority status stresses. These additional stress factors, which include greater feelings of alienation, may add additional stress to preexisting stressors faced by all students (Smedley et al., 1993). In addition, Latino students must often cope with the profound stresses that accompany immigration status and the acculturation process, which include the separation from familiar environments and resettlement (Berger et al., 2006; Cervantes, Padilla, & Snyder, 1991).

Purpose of Study

The purpose of the present study is to examine important factors related to posttraumatic growth (PTG) among Latino college students. In particular, the relationship between PTG and religiosity among Latino students will be investigated.

Significance of Study

Many current researchers express that there is still much to uncover regarding posttraumatic growth, and positive responses to traumatic events in general (Helgeson et al., 2006; Park & Helgeson, 2006). Specifically, several studies have stated that the relationship between the religiosity of an individual and the experience posttraumatic growth (PTG) require further investigation (Calhoun et al., 2000; Calhoun & Tedeschi, 1998). Furthermore, Wortman (2004) stated that few studies have compared PTG experienced by individuals that have endured different traumatic events. The present study will complement current data on the experience of posttraumatic growth, and extend the understanding of PTG and its relationship with other factors related to the individual and the traumatic event.

Theoretical Framework

The concept of posttraumatic growth (PTG) is one that suggests that there are more than simply negative consequences for individual's that have suffered traumatic experiences. Frazier et al. (2001) acknowledged in their study of sexual assault victims that it is not unusual for people to experience coexisting positive and negative aftereffects following trauma. PTG is the phenomenon of deriving benefit from trauma, including a new outlook on life, improved interpersonal relationships,

a renewed appreciation for life, and spiritual change (Tedeschi & Calhoun, 1995). Calhoun and Tedeschi (1998) provided a model explaining the process of growth (Fig. 1). The general process begins with a traumatic event. For the purposes of this study, a traumatic event constitutes a highly stressful event in an individual's life that is sudden and/or unexpected, causes significant psychological distress, and presents challenges to the individual's beliefs about his/her world (Tedeschi & Calhoun, 1995; Calhoun & Tedeschi, 1998). Following the traumatic event, the individual works to cope with the trauma, incorporating social support into their attempts to deal with the event. The amount of growth experienced is a product a variety of factors, including individual traits (i.e. optimism, religiosity), though psychological distress is still present (Tedeschi & Calhoun, 1995). Tedeschi & Calhoun (2004) posited that growth occurs in predominately five domains: (a) an increased appreciation for life, (b) development of more profound relationships with others, (c) increased inner strength, (d) discovery of new possibilities in life, and (e) spiritual or existential growth.

The concept of religiosity, an individual's perspective on religion and spirituality, can be classified in numerous ways, ranging from involvement in religious activities (i.e., masses or religious conferences) to the importance of religion for an individual (Walker, Anette, Willis, & Mendoza, 2007). Empirical studies demonstrate the ability of religious interactions to serve as effective coping strategies and foster social interactions that aid survivors of trauma in their recovery (Calhoun et al., 2000; McIntosh, Silver, & Wortman, 1993). Furthermore, religion may serve as a framework through which an individual is able to extract beneficial significance from a traumatic event (McIntosh et al., 1993; Park et al., 1996). However, many individuals that do not practice a particular religion do experience spirituality, and therefore spirituality is often independent of a specific denomination. For these individuals, religiosity (or spirituality) may represent appreciation for one's possessions, inner peace, and a general attitude of amnesty towards others (Underwood & Teresi, 2002). In this study, religiosity and spirituality will be used interchangeably.

Delimitations

Additional concepts exist that describe similar processes or outcomes experienced by individuals responding to difficult life circumstances. These include resilience, optimism and coping. However, there are essential distinctions between posttraumatic growth (PTG) and these concepts. Resilience may be defined in several ways within the literature. For example, Yi, Smith, and Vitaliano (2005) define resilience as "an individual's capacity to maintain psychological and physical well-being in the face of adversity" (p. 257), where as Orozco (2008) refers to resilience as the ability of an individual to overcome adversity by reducing the negative aspects of stressors via "protective factors" (p. 53). Optimism refers to the anticipation of positive events in the future, though it may also be further delineated to context-specific optimism, which is the belief a person holds that good experiences will arise from trauma (Calhoun & Tedeschi, 1998; Updegraff & Marshall, 2005). Coping

relates to behaviors that individuals use to shield themselves from psychological harm caused by stressful social events (Pearlin & Schooler, 1978). The primary difference between PTG and these concepts lies in the notion that PTG refers to experienced positive outcomes (specifically, improved psychological functioning) resulting from a struggle to deal with the trauma (Tedeschi & Calhoun, 2004).

Limitations of the Study

A basic limitation of the present research proposal lies in the dependence on previous findings to address the intended research questions. Though the conclusions of these studies may provide a solid base for hypotheses, conducting the proposed study will likely provide more reliable data. An additional limitation is that due to several actual constraints (i.e. time, resources available), the proposed study is cross-sectional in design, and therefore cannot make any claims of causality. Several researchers express that longitudinal studies, in which growth may be assessed before and after a potentially traumatic experience, are ideal for investigating the development of growth and its correlates; cross-sectional studies are not able to accurately comment on the directionality of correlations between growth and other variables (Cordova, Cunningham, Carlson, & Andrykowski, 2001; Helgeson, Reynolds, & Tomich, 2006; Milam, Ritt-Olson, & Unger, 2004; Weinrib, Rothrock, Johnsen & Lutgendorf, 2006). A final limitation lies in the use of a single instrument to assess both religiosity and spirituality. Though the terms are used interchangeably in the present study, the two concepts are not precisely synonymous, and each may have a distinct relationship with posttraumatic growth (Underwood & Teresi, 2001).

Literature Review

The following section reviews empirical studies that address posttraumatic growth (PTG) and religiosity. The discussion begins with general research focused on and related to trauma and posttraumatic growth, then continues on to studies identifying factors related to PTG, particularly the relationship between benefits derived from trauma and its relationship with religious involvement.

Posttraumatic Growth

Posttraumatic growth (PTG) is the process of deriving beneficial outcomes from highly stressful experiences. Tedeschi & Calhoun (2004) stated that such events can often be regarded as traumatic, and traumatic events challenge an individual's perspectives and beliefs about the world. The unique aspect of posttraumatic growth is the transformative quality that it produces in those that experience it, such that they are able to come away from trauma with improved psychological functioning (Tedeschi & Calhoun, 1995). Tedeschi and Calhoun (2004) posited, "what makes these experience transformative are that they have an affective component" (p. 5). Indeed, many empirical studies have demonstrated the various positive and negative

affective consequences of trauma (Frazier, Conlon, & Glaser, 2001; Ickovics et al., 2006; Weinrib, Rothrock, Johnsen, & Lutgendorf, 2006).

After experiencing trauma, Tedeschi and Calhoun's (1998) model of growth suggests that an individual attempts to cognitively manage the distress, and struggles to overcome it. Tedeschi and Calhoun (1998) stressed that this process, referred to as rumination, is necessary for the individual to make sense of the ordeal. PTG develops as the person's ruminative and coping efforts bring about personal changes, specifically spiritual change, an increased appreciation of life, increased personal strength, recognition of new possibilities in life, and improved interpersonal relationships (Tedeschi & Calhoun, 2004). However, researchers emphasize that psychological distress is not completely eliminated once PTG is reported, and suggest that continued distress is necessary for the maintenance of posttraumatic growth (Helgeson, Reynolds, & Tomich, 2006; Tedeschi & Calhoun, 2004). There exists a variety of terminology used to label the phenomenon of personal gain following trauma (posttraumatic growth, stress-related growth, perceived benefits, perceived growth, benefit finding), though the underlying concept throughout is that individuals struggle to overcome difficult life situations, and through the struggle to overcome the trauma, experience various noticeable improvements (Affleck, Tennen, Croog, & Levine, 1987; Park, Cohen, & Murch, 1996; Tedeschi & Calhoun, 1995; Tedeschi & Calhoun, 1998; Updegraff & Marshall, 2005; Urcuyo, Boyers, Carver, & Antoni, 2005).

General Research

Some researchers express concern that posttraumatic growth or perceived benefits may not be as common as suggested, and question the accuracy and authenticity of self-report measures that are often used (Wortman, 2004). On the other hand, Park & Helgeson (2006) have stated:

However, people's perceptions of growth may be more important in understanding their psychological experience and quality of life than measures of actual growth. In fact, it may be more important to know whether people believe that they have grown regardless of whether there is any objective measure of change. (p. 794)

Furthermore, the literature on the effects following trauma has documented many different benefits resulting from attempts to cope with a spectrum of traumatic experiences across diverse populations.

Frazier et al. (2001), who explored the course and development of both positive and negative consequences experienced by sexual assault victims over one year using 5-point Likert scale responses to items addressing positive and negative changes, found that positive changes were acknowledged by participants just two weeks following the assault. These changes included improved relationships with family members, reported by 46% of the participants, and an increased appreciation for life, also reported by 46% of the participants. Negative changes reported by participants were decreased beliefs about the safety of the world (83% of the participants) and decreased beliefs about the fairness of the world (81% of the participants).

Furthermore, Frazier et al. (2001) noted that over time, positive changes increased and negative changes decreased.

A study conducted by Weiss (2002) measured PTG in women that had been diagnosed with breast cancer, and their husbands. Both wives and husbands reported similar levels of stressfulness and perceived fear or threat as a result of the diagnosis. Weiss used the Posttraumatic Growth Inventory (PTGI), developed by Tedeschi and Calhoun (1996; in Weiss, 2002), to measure different aspects of growth, and found that both groups experienced significant PTG. Weiss also had each individual of each couple complete a PTGI that they believed represented the growth experienced by their spouse, performing an intersubjective validation. After statistical analysis, it was noted that the correlation between spousal estimates of the each other's total PTGI score and self-reported total PTGI scores were positive and relatively strong ($r = .50$).

Another investigation, conducted by Park et al. (1996), also compared self-reported growth to estimates produced by related others. As part of three analyses used to test and validate their instrument that also measures growth following stressful events (called the Stress-Related Growth Scale or SRGS), Park et al. had college students and their close friends or relatives reports SRGS scores for an event identified by the college students as the most stressful they had experienced within the previous 12 months. In this study, the correlation between self-reported and scores estimated by relatives and friends to be lower, but still significant (.21). In addition, the correlation increased to .31 when only "extremely close" informants were considered (Park et al., 1996). Weiss (2002) suggests that higher correlations were found in her sample because the greater intimacy between husbands and wives relative to college students and their friends allows outward changes in behaviors to be more readily noticed. Weiss (2002) supports this proposition with data collected in her study that demonstrates that the Personal Strength subscale of the PTGI, which constitutes less observable changes, had the lowest intersubjective validation correlation of all subscales.

Affleck et al.'s (1987) participants consisted of men that had suffered heart attacks. The study focused on the correlations between morbidity, causal attributions, and perceived benefits of men 7 weeks after the attack and again 8 years after the attack. When asked to report benefits resulting from their medical incident, 58% of the participants reported gaining benefits during the interview after 7 weeks, and 59% of the participants reported benefits 8 years after. One of the most common benefits cited (11% of those reporting benefits after 7 weeks, and 25% of those reporting benefits after 8 years) was change or renewal in philosophy of life and religious views. Interestingly, Affleck et al. also found that men that had found benefits following their first heart attack were less likely to have subsequent heart attacks.

Populations that have remained relatively understudied with respect to posttraumatic growth are adolescents, though it is recognized that adolescents also experience extraordinary circumstances (Ickovics et al., 2006; Milam, Ritt-Olsen, & Unger, 2004). Indeed, Calhoun and Tedeschi (1998) assert that PTG or "an equivalent process may also occur at earlier stages of development" (p. 215). Salter and Stallard

(2004) conducted a study with children that had survived road traffic accidents to investigate the prevalence and magnitude of PTG and posttraumatic stress disorder (PTSD). The participants, who averaged 15 years of age and were evenly split between sexes, were given a PTSD symptom scale to assess the indications of PTSD and interviewed. In the interviews conducted, 42% of participants reported some extent of PTG, including improved appreciation for life and improved interpersonal relationships. It was also noted that PTSD co-occurred with PTG in 37% of the children. Milam et al. (2004) also performed a cross-sectional study focusing on PTG in adolescents, additionally surveying its relation to substance abuse within this population.

Milam et al.'s (2004) subject pool consisted of mostly Latino adolescents with a mean age of approximately 16. These researchers employed social readjustment scales to measure the negative life experiences of the adolescents within the past 3 years, and the PTGI to measure growth from those experiences. The PTGI was modified so that responses to the items ranged from "highly negative change" to "highly positive change". Milam et al. found that 30% of the subjects experienced positive changes following their traumatic events, and PTG was negatively correlated with substance abuse, though "directionality is unclear" (p. 200).

Correlates and Predictors of PTG

In the studies from which the PTGI (Tedeschi & Calhoun, 1996; in Weiss, 2002) and SRGS (Park et al, 1996) were tested and derived, several factors were found to be related to the growth measured in the participants. As budding research interest has produced more data on the phenomenon of deriving benefits from trauma, additional individual and situational variables related to participants have been identified and empirically examined, though the fact that many studies are cross-sectional rather than longitudinal restrict their ability to identify directionality of correlates (Helgeson et al., 2006; Tedeschi & Calhoun, 2004).

Optimism. A common correlate of growth following trauma that has emerged from the literature is optimism. Updegraff and Marshall (2005) identify two forms of optimism: generalized or dispositional optimism, and situation-specific optimism. Generalized optimism is defined as an individual's inherent belief that the future holds positive outcomes, and situation-specific optimism refers to beliefs that positive outcomes will result from a particular event (Updegraff & Marshall, 2005; Urcuyo et al., 2005). In their longitudinal study, Updegraff and Marshall (2005) assessed dispositional optimism, event-specific optimism, and posttraumatic growth (PTG) in a sample consisting of 255 survivors of community violence. The participants were 94% male, and 79% Latino, with small representations of African Americans (13%) and Caucasians (3.3%). Using the PTGI, Updegraff and Marshall noted that moderate levels of growth were reported. Additionally, over the length of 3 months, increased PTG was predicted by both increased situation-specific optimism (at $p < .05$) and generalized optimism ($p < 0.001$). One limitation relevant to this finding stated by Updegraff and Marshall (2005) is the "reliance on a single-item measure of context-specific optimism" (p. 556).

Urcuyo et al. (2005) conducted a study of 230 early-stage breast cancer patients in order to assess variables related to benefit finding. Their subject pool consisted of predominantly White women (63%), and some Hispanic (27%) and Black women (10%). Optimism, perceived benefits of trauma, time interval between trauma and assessment, distress experienced, and perceived quality of life were among the factors measured in this study. Urcuyo et al. found that the amount of benefit finding reported by participants was significantly correlated with the extent of optimism recorded ($p < 0.001$).

Hart, Vella, and Mohr (2008) also investigated the relationship between optimism, positive affect, depression, and finding benefits. Hart et al. measured these factors in a sample of patients diagnosed with multiple sclerosis (average time since diagnosis was 7 years). The sample in this study was almost entirely Caucasian (89%) and consisted of a large portion of women (77%). The SRGS was used to evaluate benefit-finding and optimism was assessed using Life Orientation Test—Revised (Scheier, Carver, & Bridges, 1994; in Hart et al., 2008). Hart et al. discovered that reducing the symptoms of depression was significantly predictive of finding benefits over the course of a year. Furthermore, Hart et al. found that the relationship between reduced depression and improved benefit finding was completely accounted for by improved optimism and positive affect.

Rumination. Within the context of posttraumatic growth (PTG), rumination is defined as a process of repeatedly cognitively processing thoughts (often intrusive) related to the traumatic experience (Calhoun & Tedeschi, 1998). Though there exist different forms of rumination, some of which may be more psychologically harmful than others, Calhoun and Tedeschi's model of growth suggests that rumination is necessary for growth to occur (Calhoun et al., 2000; Calhoun & Tedeschi, 1998).

Calhoun, Cann, Tedeschi, and McMillan (2000) conducted a study that investigated the relationship between rumination and PTG. In this study, 54 college students were given 14 total items to assess posttraumatic rumination (both intrusive and deliberate), 7 of which addressed rumination soon after of the event and 7 of which addressed rumination related to the event within the past 2 weeks (subsequently named the Rumination Inventory). They were also given PTGI to measure PTG resulting from a traumatic experience, which was required to have occurred within the past 3 years. Calhoun et al. found a significant positive correlation between event-related rumination soon after the event and PTG, such that individuals that had reported more early rumination experienced more PTG.

Benetato (2008) replicated Calhoun et al.'s (2000) findings in an empirical investigation of the relationship between social support, length of time since trauma, rumination, and PTG. Benetato also used the PTGI to measure PTG, and the same 14-item Rumination Inventory to determine posttraumatic rumination. However, the participants of this study consisted of US armed forces veterans that had experienced an amputation. Rumination was significantly correlated with PTG ($r [37] = .48$), and accounted for 23% of the variance in the PTG reported.

Time since trauma. Many researchers theorize that time is an important component of posttraumatic growth, given the excessive amount of psychological

distress caused by traumatic events, and the degree of effort often needed to manage and derive benefit (O'Leary, Alday, & Ickovics, 1995). However, a literature search revealed that the empirical data on the effect of time since trauma on growth reported is mixed.

Cordova, Cunningham, Carlson, and Andrykowski (2001) compared measures of PTG, well-being, and depression in women who had been diagnosed with breast cancer within the previous 5 years to a group of women that had no history of serious illness, and were comparable in age and education. The average age of participants in this study was 54 years old, 90% were Caucasian, and most had completed at some least college. All participants were administered the PTGI and Ryff's Well-Being Scales (Ryff, 1989; 1995; in Cordova et al., 2001), among other scales. Breast cancer participants reported significantly higher scores on the Spiritual Change, Relating to Others, and Appreciation of Life subscales of the PTGI. Time since diagnosis, which represented the traumatic event in this study, was significantly correlated with larger total PTGI scores ($r = .24$).

Weiss (2004) investigated the relation of PTG to quality of marital relationship, exposure to others that have experienced growth, and ability to derive comfort from social context in women who had survived breast cancer. Weiss's sample consisted of mostly Caucasian women, whose income was greater than \$60,000, averaged 38.7 months since diagnosis, and averaged 54 years of age. Women that reported contact with another individual that had experienced PTG had significantly higher total PTGI mean scores (64.9 vs. 46.8). Furthermore, Weiss's findings contrasted Cordova et al.'s (2001) with respect to time since diagnosis; this factor was negatively correlated with PTG, such that women who had been more recently diagnosed with breast cancer expressed higher levels of PTG. Demographic factors may account for the divergent findings, as Weiss's (2004) sample consisted only of married individuals, was predominantly of a higher socioeconomic status, and excluded women that were in their first year since diagnosis.

In a community-based sample of 163 predominantly White women, Weinrib et al. (2006) investigated the validity of the PTGI for an event experienced within the previous 3 years (sample average of within 13 months) by collecting and analyzing writing samples addressing the questions: "Since the time of that challenge, how has the experience of that event affected your thinking about your life and your relationships? What has been most important to you in your experience? What has been the most difficult for you?" (p. 853). The essays were evaluated for the experience of growth by four independent raters. PTGI total scores and overall growth reported in the essays were significantly ($p < .01$) and positively ($r = .39$) correlated. The PTGI subscales of Relating to Others and Spiritual change also correlated with relationship growth and spiritual growth (respectively) expressed in the essays. Weinrib et al. did not find a correlation between time elapsed since the event and PTGI growth score, though they express that the average time since the event of 21 months may have diminished this effect by allowing growth to stabilize. Benetato ($M = 37.5$ months since event; 2008), Ickovics (55% of events reported within 1 year length of study; 2006), and Milam et al. ($M = 2.47$ years since event;

2004) also did not find time since the trauma to correlate with growth reported. Helgeson et al.'s (2006) meta-analysis of 87 studies that had investigated benefit finding also did not reveal an effect for this factor (reported a median of 30 months since trauma). However, the meta-analysis did find time elapsed to be predictive of depression, global distress, and positive well-being.

Gender. One of the factors commonly tested for relation to growth in the literature is the gender of participants. In Park et al.'s (1996) initial study testing their stress-related growth construct (SRGS), they found that women reported higher levels of growth than men on average (51.50 and 45.73, respectively), contrary to their expectations. Because this finding was replicated in their third study testing the SRGS, Park et al. hypothesize that gender differences in stress-related growth may be due to divergent coping styles.

Bellizzi (2004) also identified gender differences in the magnitude of posttraumatic growth (PTG) reported. Bellizzi explored generativity and PTG in a sample of mostly White participants, 45% of which were female. Participants consisted of adults (mean age of 53 years) who had been diagnosed and treated for different types of cancer. Females scored higher than males on three subscales of the PTGI: New Possibilities, Spiritual Change, and Appreciation of Life. Bellizzi expressed that these findings “reflect considerable agreement with previous findings by Tedeschi and Calhoun (1996)” (p. 284), whose sample consisted of college students. Weiss (2002) also found females to score higher on total PTGI score, as well as all PTGI subscales save Relating to Others.

Powell, Rosner, Kreussmann, and Butollo (2003) conducted a study to assess the occurrence of PTG in refugees and internally displaced adults of former Yugoslavia during the early 1990's now living in Sarajevo. PTG was measured with a PTGI that was slightly altered to increase comprehension within the sample, and the Checklist for War Related Experiences (CWE; Powell, Rosner, Kreussmann, & Butollo, 1998) was used to quantify the amount of traumatic experiences individuals in the sample were exposed to. Items on the CWE have participants respond to questions asking to specify the type and number of potentially traumatic experiences they have been witnessed related to war. The sample consisted of equal amounts of men and women, and data was split into three evenly numbered cohorts based on age (16–30; 31–45; 46–65). Though women reported significantly less exposure to trauma, number of traumatic events experienced did not correlate with PTGI scores. Furthermore, no sex differences were found in the amount of PTG reported. Milam et al. (2004) and Benetato (2008) also found no correlation between sex and PTG in their investigations, though 92% of Benetato's sample consisted of males.

Among the majority of the additional literature reviewed, sex differences in the amount of growth reported either was not addressed, or could not be addressed due to sample characteristics (was entirely one sex or both sexes were not well represented) (Calhoun et al., 2000; Cordova et al., 2001; Hart et al., 2008; McMillen, Smith, & Fisher, 1997).

Religiosity. The literature on the role of religion in managing difficult circumstances suggests that it is often relied upon as a coping mechanism as well as a

means for self-regulation (Cook, 2000; Lechner, Carver, Antoni, Weaver, & Phillips, 2006; Marsiglia, Kulis, Nieri, & Parsai, 2005; Urcuyo et al., 2005). Furthermore, Park et al. (1996) propose that “intrinsic religiousness reflects the degree to which religion serves as an individual's framework of meaning” (p. 96).

McIntosh, Silver, and Wortman (1993) investigated the role of religion in the process of coping with the loss of a child 3 months and again 18 months postloss. Their sample consisted of 124 parents (98 women, 26 men), 50% of which were Black, and 45% of which were White. Participants were asked to respond to “How important is religion in your life?” on a 5-point scale (1 = not important) to assess the importance of religion, and “How often do you attend religious services?” on a 5-point scale (1 = never) to measure religious participation. Social support, cognitive processing related to the event, derived meaning, and well-being were also measured. Both religious participation and importance of religious were significantly correlated to finding meaning in the loss ($r = .38$ and $r = .36$ respectively, both $p < .001$), and indirectly related to well-being through significant positive correlations to social support, which was positively correlated to well-being. Limitations of this study lay in the use of a single item measure to assess importance of religion, and a lack of data for the variables prior to the losses experienced by the participants. McIntosh et al. could not assess the extent to which the factors of religion changed as a result of the loss. In relation to research to posttraumatic growth, McIntosh et al. found that religious importance was significantly correlated to cognitive processing related to the event. As stated earlier in this review of the literature, Calhoun et al. (2000) and Benetato (2008) found cognitive processing (i.e. rumination) to be related to growth following trauma.

Other studies that have found similar relationships are Helgeson et al.'s (2006) meta-analysis, which identified a positive correlation between religiosity growth, and Lechner et al.'s (2006) investigation of breast cancer survivors. Survivors that reported higher levels of benefits finding in Lechner et al.'s study also reported higher levels religious coping. In addition, some studies that have produced empirical evidence supporting a link between growth, religiosity, and ethnicity, such that Stanton, Bower, and Low (2005; in Berger & Weiss, 2006) posit religiosity may mediate and contribute significantly the correlation between minority status and growth or benefit finding reported. For example, Urcuyo et al. (2005) found both minority status and religious coping to be positively correlated to benefit finding. In addition, a regression model confirmed that minority status was predictive of benefit finding, even with all controls accounted for; however, when religious coping was introduced to the regression, minority status was no longer significantly predictive.

Berger and Weiss (2006) investigated posttraumatic growth in Latina immigrants of the United States. The Latinas in this sample had a mean age of 37 years old, averaged of 5.07 years since immigration, and were mostly less educated than some of samples in other studies, with 47% having completed high school or attained education following high school. Despite this, 79% of the participants had full- or part-time jobs. Berger and Weiss (2006) used a translated and shortened (13

items vs. 21 items) version of the PTGI, called the Spanish PTGI (S-PTGI; Weiss & Berger, 2005), that measures growth on three factors as opposed to the original five: Philosophy of Life, Self/Positive Life Attitude, and Relating to Others. Weiss and Berger (2005) reported a strong Spearman's rho correlation of .98 between S-PTGI and PTGI scores. Other variables measured included importance of religion (measured on a 7-point scale), stressfulness of immigration, stressors concurrent with immigration, and cognitive processing. The Latinas in this study reported relatively high levels of growth, averaging a S-PTGI score of 44.21, which would be 71.42 on the original PTGI. Though importance of religion rated high in this sample ($M = 6.18$), it was not significantly correlated to S-PTGI scores. However, it was positively correlated with scores on the Philosophy of Life subscale. These results are limited by the use of a single-item measure for the significance of religion in the lives of participants.

Coon et al. (2004) explored coping and well-being in Latina and Caucasian female community caregivers of a family member with dementia. Several scales were used to assess stressors associated with caregiving, reliance on religious coping and religious behaviors, caregiver physical and mental health, and acculturation experiences of the Latinas. The Acculturation Rating Scale for Mexican-Americans-II (Cueller, Arnold, & Maldonado, 1995) and Szapocznik, Scopetta, Kurtines, and Arandale's (1978) acculturation scale for Cubans were used, as Coon et al. sampled from two distinct populations of Latinas. The Latina participants reported greater use of prayer ($t = 5.48$), high attendance at religious services ($t = 5.12$), and assigned religion more importance ($t = 6.39$) than Caucasian participants (all significant at $p < .001$). Furthermore, Latina caregivers also derived benefits from caregiving more often. Coon et al. posited that this may be due to the traditional Latino family structure, in which there is a tendency for individuals to demonstrate greater concern for their elder family members. Less acculturated Latinas reported even more derived benefits than more acculturated Latinas. The interpretation of this finding is limited by the use of two distinct Latino populations, and in turn, two different constructs to collect acculturation data. There were no ethnic differences found in reported depressive symptoms, anxiety, or physical health.

Methodology

The following sections will reintroduce the purpose and research questions for the proposed study. Afterwards, the participants are described, and methods for data collection and analysis are discussed.

Participants

The participants of this study will consist of Latino students currently enrolled at the University of Maryland, College Park. A list of these students will be obtained from the campus registrar, which may provide the information of students who consider themselves of Latino or Hispanic origin. All academic classes (freshmen through seniors) will be included in the initial study group.

Instrumentation

A total of four measures will be used to accumulate data for the present data. The measures consist of a demographic questionnaire, the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1995), Daily Spiritual Experience Scale (DSES; Underwood & Teresi, 2002), and the Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997). All participants will be rated on all measures. Appendices A through D contain the instruments in full.

Demographic questionnaire. The demographic questionnaire will consist of 6 items asking participants to report their gender, socioeconomic status, academic class, immigration status, ethnicity/country of origin, and describe an event they experienced within the previous 5 years that may have caused them significant distress. The demographic questionnaire items are contained within appendix A.

Posttraumatic Growth Inventory. The PTGI was introduced by Tedeschi and Calhoun's studies investigating factors that contribute the experience of growth following trauma (1995; 1996, in Tedeschi & Calhoun, 2004). A factor analysis was used to reduce the original 34 items to 21, with these items strongly correlating to the original 34 (Tedeschi & Calhoun, 1995). The entire measure is made up of five subscales: New Possibilities (5 items), Relating to Others (7 items), Personal Strength (4 items), Appreciation of Life (3 items), and Spiritual Change (2 items). Each subscale may be comparatively assessed on its own with other variables for data analysis. The items on the construct are rated on a 6-point Likert-type scale, 1 representing "I did not experience this change as a result of my crisis" and 6 representing "I experienced this change to a very great degree as a result of my crisis". Examples of items on the inventory include "Appreciating each day", "I developed new interests", and "A sense of closeness with others". The inventory was selected to measure growth in the present study for its reliability and widespread use in previous research. Tedeschi and Calhoun (1995) reported that the internal consistency of the PTGI is $\alpha = .90$, with a test-retest reliability of $r = .71$ over 2 months, and several other studies reported strong Cronbach's alphas on the entire inventory as well as the subscales (Benetato, 2008; Milam, Ritt-Olsen, & Unger, 2004; Weinrib, Rothrock, Johnsen, & Lutgendorf, 2006; Cordova, Cunningham, Carlson, & Andrykowski, 2001). The PTGI has also been validated with written essays and other personality measures, such as optimism and extroversion (Tedeschi & Calhoun, 1995; Tedeschi & Calhoun, 2004; Weinrib et al., 2006). Appendix B contains the complete Posttraumatic Growth Inventory.

Daily Spiritual Experience Scale. The DSES consists of 16 items that are used to quantify the daily spiritual experiences of individuals (Underwood & Teresi, 2002). The scale measures both religious and spirituality experiences, and therefore incorporates related factors from a variety of faiths. Though religiosity and spirituality are not necessarily synonymous, characteristics of each concept often overlap with one another, such as exploring the meaning of life and a connection to the transcendent (i.e. God or a divine figure) (McIntosh, Silver, & Wortman, 1993; Underwood & Teresi, 2002). Sample items include "I feel thankful for my blessings"

and “I feel a selfless caring for others.” Responses to the first 15 items on the DSES are recorded on a 6-point Likert-type scale, ranging from 1 (Many times a day) to 6 (Never or almost never), and the final item is rated on a 4-point Likert-type scale (1 = Not at all, 4 = As close as possible). In Underwood and Teresi’s initial testing of the scale, Cronbach’s alphas were .94 and .95. Walker et al. used a shortened version of the scale in their study of middle- and high school students, and reported a Cronbach’s alphas of .92 and .93. See Appendix C for the complete DSES.

Impact of Event Scale-Revised. The IES-R contains 22 items that assess the instances of intrusion (7 items), avoidant behaviors (8 items), and hyperarousal (7 items) experienced within the past 7 days attributed to a previous difficult life event. The original IES contained 15 items, however, the hyperarousal items were added in a revision to further address responses to traumatic life events (Horowitz, Wilner, & Alvarez, 1979; Weiss & Marmar, 1997). Intrusion items are analogous to “Any reminder brought back feelings about it [the event]”; avoidant behavior items are analogous to “I felt as if it hadn’t happened or it wasn’t real”, and hyperarousal items address a range of behaviors and responses (i.e. “I was jumpy and easily startled”). Responses to the items are scored on a 5-point Likert-type scale, ranging from “Not at all” (0) to “Extremely” (4). Weiss and Marmar’s initial study employing the IES-R produced internal consistencies ranging from .79 to .92 for each subscale. In addition, test-retest reliability was calculated for two samples, producing subscale correlation coefficients ranging from .51 to .92. The scale is contained in Appendix D.

Procedure

An e-mail will be sent to all Latino students enrolled at the University of Maryland once a directory of addresses is obtained from the University Office of Admissions, inviting students to participate in this study and ensuring confidentiality. The PTGI, DSES, IES-R, and demographic questionnaire will be posted on Survey Monkey®, a website that hosts surveys free of charge. Students that have accepted the invitation to participate will then be sent the link for the packet of measures, and asked to complete them. Data will then be collected from Survey Monkey®, and the program SPSS will be used to conduct data analysis.

Data Analysis

Data analysis for this study will be completed using SPSS, a statistical analysis computer program. Means and standard deviations will be reported for each of the scales. The analysis will consist of a correlation analysis via multiple regressions to determine relationships between different variables. Additionally, ANOVA’s will be used to analyze the relationships between all variables measured.

Findings Expected, Conclusions, and Recommendations

Findings Expected

This section discusses some of the results expected pertaining to the research questions that would be addressed should this study be conducted. These results are reported in terms of findings in the literature that apply to the purpose of the present study. Recommendations for further study are also discussed, given the predicted findings and limitations.

Response to & Analysis of Research Question 1

The first research question explored the relationship between posttraumatic growth and religiosity for Latino/a college students. The literature suggests that religiosity is often positively correlated with growth reported, though different studies have used different measures of religiosity (Berger & Weiss, 2006; Calhoun, Cann, Tedeschi, & McMillan, 2000; Coon et al., 2004; Park, Cohen, & Murch, 1996; Urcuyo, Boyers, Carver, & Antoni, 2005). Of the literature reviewed, only one study found no relationship between religiosity and growth (Milam, Ritt-Olsen, & Unger, 2004), therefore the expected result for the present study is that religiosity is positively correlated to posttraumatic growth.

Response to & Analysis of Research Question 2

The second research question addressed gender differences in the relationship between growth and religiosity. The literature on posttraumatic growth often demonstrates a gender difference in growth reported, with females often reporting higher levels of growth (Bellizzi, 2004; Park et al., 1996; Weiss, 2002). Thus, it is expected that females in the present study will report higher levels of growth. The literature reviewed that investigated religiosity did not address gender differences. However, the elevated levels of growth in females would likely affect the relationship between growth and religiosity.

Response to & Analysis of Research Question 3

The third research question examined the relationship between immigration status, posttraumatic growth, and religiosity. Berger and Weiss’s (2006) found relatively high levels of growth in their sample of Latina immigrants who averaged 5 years post-immigration. In addition, Coon et al. (2004) found that less acculturated Latina caregivers derived greater benefits from caregiving than both more acculturated Latina caregivers, and Caucasian caregivers. However, less acculturated Latinas and more acculturated Latinas did not differ significantly in frequency of prayer, attendance at religious services, or importance of religion. Based on these findings, it is anticipated that the Latinos/as in the proposed sample that have migrated more recently will report higher levels of growth, though time since migration may not be a strong indication of magnitude of acculturation.

Response to & Analysis of Research Question 4

The fourth research question investigated how differences in event impact may affect posttraumatic growth and religiosity. It is hypothesized that event impact will be positively correlated with growth reported, though the literature has produced mixed findings. While some studies have found that growth is inversely related to emotional or event-related distress, others have concluded that growth is positively related to more intrusive or avoidant behaviors and greater event severity, and still another proposed a curvilinear relationship (Helgeson, Reynolds, & Tomich, 2006; Ickovics et al., 2006; Lechner, Carver, Antoni, Weaver, & Phillips, 2006; Urcuyo et al., 2005; Weinrib, Rothrock, Johnsen, & Lutgendorf, 2006). Additionally, numerous studies that have sampled various populations with diverse traumatic life events have demonstrated that religious involvement or religious coping is positively correlated with experiences of growth (Berger & Weiss, 2006; Calhoun et al., 2000; Coon et al., 2004; Park et al., 1996; Urcuyo et al., 2005). Therefore, a positive correlation between event severity and growth is anticipated. Likewise, it is predicted that greater event severity will be positively correlated to the degree of religiosity reported by participants in the proposed study. Traumatic experiences may challenge an individual's perceptions of the world; therefore, dealing with a traumatic experience often involves the process of restructuring and making sense of the world (Davis & Noel-Hoeksama, 2001; Park & Helgeson, 2006; Tedeschi, Park, & Calhoun, 1998). Consequently, religion may provide a framework for coping and making sense of an individual's world following a traumatic experience (McIntosh, Silver, & Wortman, 1993). Thus, individuals that report greater event impact may report greater religious/spiritual sentiments.

Conclusions

The present study investigated factors that may influence the degree of posttraumatic growth experienced by Latino college students. Because Latinos are a heterogeneous group, the results derived from previous studies, or this study (should it be conducted), may not be representative of all individual Latino groups (Orozco, 2007). Nevertheless, there are sufficient previous findings in the literature to provide preliminary hypotheses for the proposed research questions. From the reviewed literature, expected results include: (a) a significant, positive correlation between religiosity and posttraumatic growth, (b) a significant, positive correlation between growth reported and gender, (c) no gender differences in religiosity reported, (d) a significant, inverse relationship between immigration status and posttraumatic growth, such that more recent migrants express more growth, (e) no differences in religiosity based on immigration status, (f) a significant, positive correlation between growth and event impact, and (g) a significant, positive correlation between religiosity and event impact. The data from this study may provide more insights into some of correlates of growth in Latino populations.

Recommendations for Future Research

The results of this study may provide more empirical knowledge about the incidence of growth in Latino/a college students. However, future studies may address some of the present limitations, and further examine the concepts of growth and religiosity in this population. First, longitudinal studies may examine the directionality of the correlation between growth and religiosity. Knowing the direction of the correlation (i.e., whether the primary relationship is religiosity influencing the development of growth, or vice-versa) will further understanding of growth in Latinos. Second, future studies may investigate possible differences in the relationship between growth and religiosity across different Latino subgroups, such as Central American, South American, and Caribbean Latinos. Finally, it is important for future studies to analyze the current model of growth following trauma, and investigate its application to Latino populations. A more accurate model may expose further areas of research on growth in Latinos.

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Attention Deficit Hyperactivity Disorder and Risky Sexual Behavior in Adolescence

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Abstract

According to the literature, many adolescents diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) have been shown to engage in risky sexual behavior (Flory, Molina, Pelman, Gnagy, Smith, 2006). However, it still remains unknown which particular social and environmental factors influence this positive correlation. Thus, this research examines the social and environmental risk factors that influence risky sexual behavior in adolescence. The results from this research has identified that adolescents reporting having sexual intercourse in their lifetime scored significantly higher on parent reports of externalizing problems, attention problems, rule breaking behavior, and aggressive behavior. Additionally, adolescents that scored high on externalizing symptoms were more likely to report a greater number of sexual partners, and adolescents scoring higher. There also seemed to be a significant gender difference, such that females scored significantly higher on parent reports of total ADHD problems. Considering the potential health problems associated with risky sexual behavior, it is important to identify the specific factors that increase this likelihood among diagnosed adolescents, and to formulate ways to address this issue and thereby reduce its occurrence.

Introduction

Attention deficit hyperactivity disorder (ADHD) is one of the most common psychiatric disorders among children and adolescents (Flory et al., 2006). Symptoms of this disorder can impact academic performance, as well as social behavior. In particular, many adolescents with ADHD have been shown to engage in risky sexual behavior. This correlation has been well documented for the last several years; however, there has been very little research regarding the influential factors that contribute to it. Considering the potential health problems associated with risky sexual behavior, it is important to identify the specific factors that increase this likelihood among diagnosed adolescents, and to formulate ways to address this issue and thereby reduce its occurrence.

Purpose of Study

The purpose of this study is to identify the specific environmental and social factors that cause ADHD diagnosed adolescents' involvement in risky sexual behavior