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Prevalence and Correlates of Myths of Coping

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Psychology and Social Behavior

by

Raquel Garcia Tatar

Dissertation Committee:
Professor Roxane Cohen Silver, Chair
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2017

DEDICATION

To my parents who nurtured weirdness and curiosity as virtues and to Joe who never judged me for it and is always a willing participant in every adventure.

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ABSTRACT OF THE DISSERTATION

Prevalence and Correlates of Myths of Coping

By

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Doctor of Philosophy in Psychology and Social Behavior

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Professor Roxane Cohen Silver, Chair

Despite decades of research into the coping process, the only consistent result has been the variability in coping behavior. Myths of coping, or beliefs about coping held despite inconsistent evidence, have been theorized but not measured for their prevalence, correlates, and possible implications. Coping myths include assumptions that early distress is inevitable after a major stressor, distress is necessary for working through grief (which must occur for appropriate resolution of distress), coping responses are universal and follow a predictable pattern, there is a dose response relationship between exposure to event and level of distress, and reduction of distress should occur after a certain period of time. Using a longitudinal study of a U.S. nationally representative sample following individuals from shortly after the Boston Marathon bombing and the Pulse nightclub shooting in Orlando, Florida, we sought to explore the relationship between myths endorsement, trauma history, media exposure, and acute stress. Study 1 found that coping myths were prevalent in our society. Results showed that older and female participants tended to endorse myths more frequently than younger and male participants. Study 2 found that individuals reporting greater numbers of stressful life events were more likely to endorse coping myths, which was also associated with higher acute stress following a

subsequent collective trauma. Further analyses showed that coping myths mediated the positive relationship between stressful life event history and acute stress following a collective trauma. Moderation analyses showed that recent stressors moderated the positive relationship between myth endorsement and acute stress. Study 3 found no significant associations between myth endorsement and media use for participants overall, though interaction analyses suggested age differences in this relationship. Younger participants were less likely to endorse myths if they were exposed to greater levels of media prior to the Boston Marathon bombing, but the opposite pattern was seen for older participants, approximating significance. These studies have implications for several groups of people, such as clinicians treating traumatized patients. Understanding how individuals develop beliefs about the coping process may help us understand what drives individuals to cope in specific ways and how interventions can best be targeted to reduce distress following collective stressors.

CHAPTER 1-OVERVIEW

Research on coping processes has burgeoned in the past 35 years, with over 800,000 articles published since 1980 (Frydenberg, 2014). This line of research is critical to the improvement of thousands of lives impacted by traumatic or stressful events, since it is now accepted that just about every person will be exposed to at least one, but usually several, traumatic events in his or her lifetime (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Skinner, Edge, Altman, & Sherwood, 2003). Given this ubiquity of trauma, there is a need for better understanding of how affected individuals handle trauma and what may be the best practices for clinicians to help them recover. Although there has been a significant paradigm shift in recent research, moving away from early beliefs concerning coping with loss, many basic assumptions about this process remain constant in a large portion of models proffered. Concepts like the need to express emotion after a loss fluctuate in popularity, often remaining widespread despite lack of evidence. Despite how long researchers and theorists have been delving into coping processes, starting as early as Freud in 1917, the only truly reliable finding from this literature is how variable and unique the coping process can be (Rothaupt & Becker, 2007; Silver, 2004; Silver & Wortman, 1980; Wortman & Boerner, 2007, 2011).

In order to fully examine this vast literature, it is important to understand the definitions of the variables being investigated, namely coping, trauma, and bereavement. According to Silver and Wortman (1980), coping, at its most basic level, refers to the cognitive, emotional, or social responses made by individuals facing a stressful or traumatic life event. There is still some debate around what should be considered a “traumatic event.” Some researchers (e.g., Lieberman & Van Horn, 2008) argue that traumatic events must overwhelm one’s subjective ability to deal with the event, whereas others (e.g., Norris, 1990) maintain that traumatic events must only

include violent events, defined as events involving extreme outside forces. The Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5, American Psychiatric Association, 2013) defines trauma as resulting from actual or threatened death, injury, or violence either by direct exposure, witnessing of the event, or learning of the event having occurred to a close family member or friend. Bereavement is typically defined as the response associated with the loss of a loved one (Parkes, 1986), although some (e.g., Kübler-Ross, 1969) see similar responses in people who are dying or in those who experience loss of ability from disability (e.g., Hewson, 1997). Although the literature on coping originally focused on coping with losses of loved ones, the literature has since expanded to coping with different types of loss, such as loss of ability, loss of home, or the development of chronic illness (e.g., Horgan & MacLachlan, 2004; Livneh & Antonak, 2005; Parkes, 1975). Evidence for applicability of loss models to other forms of stress or trauma has been established in some studies. For example, some researchers found responses similar to those coping with a loss in individuals coping with a company's downsizing and mass firings (e.g., Bell & Taylor, 2011) or sexual assault (e.g., Gibson & Leitenberg, 2001), which can be traumatic and extremely stressful but is not typically considered to be a "loss".

Freud's (1917) coping with loss paradigm is arguably the most influential model of coping posited in Western culture (Rothaupt & Becker, 2007). Table 1.1 provides a brief overview of the major coping models and their main characteristics for comparison. It is interesting to see that many features of Freud's (1917, 1957) early model still influence many of the models being theorized as recently as in the last decade. In Freud's model, the ultimate goal of a person dealing with a loss is eventually to detach or "let go" of the deceased person, usually through a long and difficult internal process, dubbed the "work of mourning" or "grief work". This model also contained the early idea of stages of coping, where the bereaved person would

first go through a period of intense longing and depression, and ultimately accept the loss and relinquish attachment to the deceased. Freud also originally posited that grief should not last indeterminately and that ongoing grief is pathological and should be addressed with professional help (Rothaupt & Becker, 2007).

Erich Lindemann was a contemporary of Freud's who posited a similar grief model from his study of bereaved individuals. Lindemann (1944) agreed with Freud's notion of grief work and maintained that in order for healthy resolution to occur, bereaved persons would have to process and confront their loss, express their emotions, and ultimately sever all emotional bonds to the deceased. Lindemann's and Freud's models influenced clinical beliefs and methods for dealing with grief for over 50 years, and several aspects of these models -- mainly that continued grief is unhealthy and pathological -- continue to influence research and clinical practice to this day (e.g., Bryant, 2012; Walsh & McGoldrick, 2004).

Stemming from this framework, Bowlby (1969, 1973, 1980) developed his own bereavement model, largely based on his early work on attachment theory. Bowlby argued that attachment to the deceased would not necessarily have to be severed; rather, the mourner would have to adapt to the loss and then change his or her relationship to the deceased. He posited that a mourner would go through four stages of grieving before being able to return to normal functioning:

1. Numbness or shock
2. Longing or yearning for the deceased person, usually paired with intense anger
3. Despair and depression
4. Reorganization of life post-loss, recovery and acceptance

Attachment theory informed many aspects of this model by hypothesizing that a mourner's attachment history, both in general and specifically to the deceased, would greatly influence the progression and severity of the coping process. This was paradigm shifting since it allowed researchers and clinicians to incorporate individual differences for the first time. Bowlby also maintained that the ultimate goal of grief work was to accept the loss and return to normalcy, once the bereaved was able to reorganize his or her life. The notion that individual differences could influence coping with loss and the expectancy of recovery and the return to status quo has remained influential throughout the subsequent decades of coping research and is included in most major models to date.

Several contemporaries of Bowlby's (e.g., Kübler-Ross, 1969; Ramsay & Happee, 1977) continued Bowlby's and Freud's lines of work by theorizing other linear stage models of coping, in which a person dealing with a loss should go through several stages before reaching resolution. The most widely known of these is Kübler-Ross's (1969) stage model, developed from her extensive work with dying patients upon their discovery of impending death. She proposed that when working through a loss, people with terminal illnesses will go through five distinct and predictable stages. It is noteworthy that although this model was originally conceptualized for patients dealing with the impending loss of their own lives, it also has been applied to people handling a loss that has already occurred. In the first stage, people will respond with intense shock and denial, which, according to Kübler-Ross, Wessler, and Avioli (1972), may last from "a few seconds to a few months" (p. 36). In this stage, the patient will refuse to accept or even acknowledge the loss and may also experience significant emotional numbing. In the second stage, the dying patient will get angry and become extremely difficult to handle. Kübler-Ross et al. (1969) recommended that some professional help is generally needed

for both the family's sake, so they do not have to endure prolonged periods of handling a demanding family member, and for the patient's sake, since in this stage the patient needs to express his or her anger in order to move on to further stages. In the third stage, dying patients will engage in bargaining, either with some external deity (e.g., for more time, deliverance, forgiveness) or with other people (e.g., medical personnel for favors during dying person's last days). In this third stage, dying patients will have started to acknowledge the loss and will be ready to process what the loss means (e.g., loss of financial support or companionship). During the fourth stage, dying patients will experience some type of depression. Kübler-Ross (1969) distinguished between two distinct types of depression that happen sequentially, the first of which she called "reactive depression," involving outward signs of depression, such as crying and expressive mourning. Kübler-Ross argued that physicians and clinicians should encourage their patients to express these depressive feelings in order to move onto the second type of depression, dubbed "preparatory grief," involving acknowledgement of what the loss will entail and grief for the changes that will come. After this, dying patients will enter the fifth and final stage of acceptance; in they have separated themselves from their earthly life (called "deaths" and are comfortably waiting for their death. In the bereavement context, the fifth stage involves detachment from lost loved one and a gradual return to normalcy.

Although this strict stage model has largely been abandoned in scientific circles, it is still widely cited and used by laypersons or discussed in self-help books and on websites. It is not entirely clear why there is so much resistance to discarding this model, though some theorists have claimed that the American culture does not handle death and loss very well and people struggle to find a predictable way to console a bereaved person or survive a loss (Parkes, Laungani, & Young, 2015). Therefore, a relatively straightforward model such as this one can

bring some structure to a largely chaotic period in life (McGoldrick, 2004; Rothaupt & Becker, 2007). It is important to note that many of the model authors (e.g., Freud and Kübler-Ross) also argued against the strict interpretation of their models that ensued after their original conceptualization, allowing for significantly more variability in responses than is typically associated with these models (Rothaupt & Becker, 2007).

Worden (1982, 1991, 1996, 2002) struggled with the notion of rigid stages of coping with loss and put forward a more flexible model based on tasks that a grieving person must complete in any order and at any time:

1. Work through the pain of grief
2. Adjust to the loss and what it may entail for one's life
3. Emotionally relocate the deceased, rather than detach completely
4. Memorialize and change the nature of the relationship with the deceased

This model was extremely influential since it continued Bowlby's work in allowing for variability and uniqueness in the coping process. As with most models, the end goal of completing the tasks was an eventual return to normal life. Similar to Freud's paradigm, Worden hypothesized that long-lasting distress or longing was not normal and was indicative of complicated or unresolved grief that should be handled by a professional. Otherwise, the grieving person would risk physical and psychological consequences related to complicated or prolonged grief.

Lazarus and Folkman (1984), and subsequently Folkman (2001), postulated what is now called the "stress and coping paradigm". This is the mostly widely researched coping model (Gullotta & Bloom, 2003), remaining prominent throughout the decades since its introduction. In this model, the coping process will be biased by the subjective appraisal of the person's available

coping resources. This appraisal will influence the severity of the distress experienced and also which strategies are actually employed to cope with the outcome. The goal of this model is to predict which coping strategies will be most effective and also how to best help an individual return to normal functioning after a stressful event. This model was and remains influential because it allowed for a much greater influence of cognitive processes in the coping trajectory. Nonetheless, it has been difficult to define and operationalize coping consistently (although the Lazarus and Folkman definition is used most widely), as well as determining ways of measuring coping strategies effectively. Because of these issues, there is still a surprising paucity of research studies conclusively determining which coping strategies are most beneficial and which are maladaptive, with many researchers continuing to call for more and better coping studies (e.g., Lazarus, 2000; Stanton & Revenson, 2011).

Lazarus and Folkman's model was also among the first to emphasize the potentially beneficial role of positive emotions (Wortman & Boerner, 2007). Up until then, positive emotions were not often recognized as being part of a healthy grieving process (see Wortman & Silver, 1987, for a notable exception) and grieving persons who experienced positive emotions were chastised by others. Although many models focus on the negative responses to loss and other stressors, some researchers now incorporate positive emotions and allow for growth as a result of the coping process, rather than just a return to baseline functioning. One example is Marrone (1999), who examined the role of post-loss growth (originally postulated by Tedeschi & Calhoun, 1995). In his model, bereaved persons go through a series of phases, less rigid than stage models but less flexible than the task models (e.g., Worden, 1982). In this model, grieving persons are expected to go through four phases, namely:

1. Cognitively reorganize one's mind to acknowledge and process the loss

2. Fully feel and express grief
3. Develop coping strategies to best adjust to the loss
4. Experience growth-oriented transformation of one's life after the loss

Marrone (1999) postulated that the main goal for a grieving person was to transform his or her life completely, by confronting the loss and realistically acknowledging the ensuing changes, allowing him or herself to feel the full extent of grief, and then using any coping strategies to work through the grief. This model's main strength is the focus on the growth that can occur (and should occur, according to Marrone) after a loss, while still providing some structure to be followed by clinicians or the grieving persons themselves. However, it still focuses on the belief that grief work is essential to the coping process and emphasizes the dangers of suppressing grief.

In recent years, a few more models have been posited, most notably Bonanno's four-component model (Bonanno & Kaltman, 1999, 2001) and the dual-process model by Stroebe and Schut (1999, 2001), collectively dubbed "integrative models." These models arose specifically to address bereavement, and to integrate the many models that came before them. In the four-component model, the grieving process is impacted by 1) the context of the loss, 2) the subjective meaning of the loss, 3) any changes in attachment to the lost loved one, and 4) coping and other emotional processes that could influence the level of psychological stress experienced. In the dual-process model, Stroebe and Schut (1999) argue that during bereavement, people will fluctuate between loss-oriented coping (i.e., processing or resolving different aspects of the actual loss) and restoration-oriented coping (i.e., adapting to the changes resulting from the loss). In both of these models, it is suggested that recovery is the ultimate goal for which to strive and expect. These models remain important since they both emphasize that expressing one's grief

may not always be helpful and that it is possible for recovery to occur without directly confronting the loss (Archer, 1999; Wortman & Boerner, 2007, 2011). Since these models are still relatively new, there has not been a great deal of research to examine their validity, though more researchers are including one or both of these models in their studies (e.g., Bonanno, Papa, & O'Neill, 2001).

Walsh and McGoldrick (2004) have put forth a more recent grief model, typically referred to as “family systems theory” (Murray, Toth, & Clinkinbeard, 2010). Like Worden (1982), they hypothesized that grieving persons should complete tasks, rather than be expected to go through a number of fixed stages. Similar to Bowlby, they also allowed for individual differences to modify the coping process, rather than pathologizing diverse responses. According to this model, the two essential tasks for a grieving person are to recognize and confront the loss, and to reorganize one’s life and invest in the family unit. During the first task, people are encouraged to express their emotions and share their pain with friends and family members who are also grieving. During the second task, people are encouraged to redefine their role in their lives and families in the context of the loss. Although there are several strong points in this model, particularly the role of social support and acceptance of coping differences, there are some aspects that other researchers have argued against. Most notably, Walsh and McGoldrick (2004), and Worden (1982) argue that mourning and depression are a necessary part of processing grief and regaining equilibrium (Rothaupt & Becker, 2007), and that unresolved grief can be problematic and may lead to future psychopathology.

Myths of Coping

Silver and Wortman (1980) first examined the available evidence regarding many coping and bereavement theories and found a paucity of support for most models. They dubbed these

unsubstantiated beliefs "myths of coping". Subsequent reviews have found that several of these beliefs have persisted, even after Silver and Wortman (1980) drew attention to their existence (for more recent reviews see, Rothaupt & Becker, 2007; Silver, Poulin, Holman, McIntosh, Gil-Rivas, and Pizarro, 2004; Wortman & Boerner, 2007, 2011). Silver and Wortman (1980, see also Wortman & Silver, 1989, 2001) postulated these coping myths included the assumption that distress is an unavoidable and necessary part of experiencing a loss; lack of distress is indicative of psychopathology; it is necessary to "work through" a loss in order to recover; recovery will usually happen in a predictable manner (e.g., stages or tasks); and that distress will not last indefinitely and recovery is expected. Since then, another myth has emerged, largely with the rise in media exposure (Konigsberg, 2011), namely that the degree of emotional response will be proportional to the degree of exposure, amount of loss, or proximity to the traumatic event or loved one during loss (Silver et al., 2004). There are several potential psychological health consequences of endorsing these myths. For example, it is possible that bereaved persons judge themselves harshly if they believe that they are feeling the wrong emotions or coping inappropriately (Gilbert, 1997, 2002; Silver & Wortman, 1980). Individuals may believe that they are supposed to cope in a certain way, as is often prescribed in materials widely available to the public, and if they deviate from that pattern then they must be doing something wrong. This added pressure to cope in a particular way may also lead to increased levels of distress, and consequently worse outcomes (Wortman & Silver, 1989).

Holman, Perisho, Edwards, and Mlakar (2010) and Payne, Jarrett, Wiles, and Field (2002) found that coping myths are present in an alarming number of influential nursing and clinical texts available to date. Both Rothaupt and Becker (2007) and Bonanno (2004) hinted at the possible negative consequences of endorsing coping myths for both individuals coping with a

loss and individuals researching the topic. Interestingly, despite coping myths being first identified over three decades ago, few, if any, studies to date have examined the role endorsement of coping myths may play in the actual coping process. Some researchers have theorized that endorsing myths might interfere with how individuals cope with a loss (e.g., Bonanno, 2004); however, there are few studies that have actually examined whether and how endorsement of myths might be associated with the coping process, either by internal pressure (i.e., individuals feel like they need to cope in a particular way) or through external pressure (i.e., members of one's social network disapprove of the ways in which individuals cope with a stressor and overtly or covertly influence their coping behaviors).

After the almost 100 years of research on coping with loss and other traumatic events and the degree of variation present across models posited, there are some beliefs that have been a part of the collective scientific understanding of coping processes. Most models to date include an emphasis on the importance and inevitability of distress and depression after a loss (notable exceptions would be Stroebe and Schut's dual process model in 2001). This is perhaps a lingering influence from Freud's original (1917) coping model or potentially reflecting a scarcity of research examining lack of distress post-loss. Freud's (1917) and Lindemann's (1944) notion of "grief work" is also a part of most models to date and one of the most pervasive coping beliefs in lay texts, with most also highlighting the significance of processing and confronting emotions. Another persistent belief is that coping processes follow a fairly predictable pattern. This notion was quite popular from the 1950s with Freud's work through the late 20th century, with some researchers starting to recognize that the strict linear pattern was unlikely to occur for every person coping with a loss. Recently, however, there has been a revival of this idea with Walsh and McGoldrick's (2004) model, postulating tasks rather than stages of the coping process.

Lastly, researchers are still debating the role of long-lasting distress following a loss. Bryant (2012) and Shuchter and Zisook (1993) describe the current debate centering on grief as a disorder in the both the DSM-3R and DSM-5, stating that many researchers argue that distress should be short-lived and that long-lasting distress is a clear indication of psychopathology, whereas others argue that distress may vary in duration, even indefinitely, without denoting psychopathology.

Wortman and Silver (1987, 1989) originally identified five myths of coping based on the available evidence:

1. Distress and depression are an unavoidable part of experiencing a loss.
2. Distress and depression are not only unavoidable, but also necessary, so lack of distress is indicative of psychopathology.
3. It is necessary to “work through” a loss in order to recover
4. Recovery will usually happen in a predictable manner (e.g., stages or tasks)
5. Distress will not last indefinitely and recovery is expected.

In their seminal articles, Wortman and Silver (1987, 1989) found that several studies provided evidence that contradicted many of these assumptions; however, many studies had methodological limitations, such as use of convenience samples and cross-sectional designs, making it difficult to form definitive conclusions about the veracity of these beliefs. Since then, there has been a revival in grief and bereavement research, utilizing complex and sophisticated methodologies and analytic strategies.

Distress and depression are an unavoidable part of experiencing a loss.

Both Freud’s (1917) and Bowlby’s (1980) original theories on the coping process were based on the idea that individuals must face their loss and experience some distress early in the

coping process. Since then, this assumption remains prominent in the minds of researchers and clinicians. In the past 20 years, some researchers have still supported the idea that once the loss is confronted (or accepted as having happened), then the person should go through a period of depression (e.g., Maciejewski, Zhang, Block, & Prigerson, 2007; Sanders, 1999). Other scholars have argued against this notion, positing that grief may not be the default emotion following a loss (e.g., Stroebe, Hansson, & Stroebe, 1993). Interestingly, despite growing evidence against the ubiquity of distress following a loss, most clinicians expect bereaved persons to experience intense distress and worry when it is not present (Downe-Wamboldt & Tamlyn, 1997; Payne et al., 2002; Worden, 2002). In these instances, when distress is not present, many clinicians will advocate for professional help in order to help the person “work through” his or her emotions (Worden, 2002).

Distress and depression are necessary and lack of distress is indicative of psychopathology.

Failure to experience depression after a loss or trauma is often considered to be indicative of psychopathology, as is posited in the models by Freud (1917), Bowlby (1969), Stroebe and Schut (1999), Kübler-Ross (1969), and Worden (1982). Wortman and Boerner (2007, 2011) also reported that an assumption regarding those not exhibiting intense distress, or experiencing positive emotions, following a loss is that they may not have been attached to the deceased. Some theorists (e.g., Feifel, 1977) also posit that not only is distress necessary, it must be experienced relatively early in the grieving process, otherwise it will be experienced later in greater intensity and accompanied by physical and psychological complications.

However, in most of the bereavement studies conducted in the past 35 years, depression is not reported by the full sample. Some studies examining individuals after the loss of their children or spouses found “normal” grief (that is, following the predicted pattern typically

posited in the coping models of early spikes of distress followed by a gradual return to baseline) to occur in 9% to 41% of bereaved samples (Bonanno et al., 1995; Lund, Caserta, & Dimond, 1986; Wortman & Silver, 1987). In addition, despite a plethora of studies examining a variety of losses (e.g., death of a spouse vs. death of a child), fewer than half of overall participants actually report what would be considered “normal” grief under the original coping models. Thus, coping models appear at best to predict the responses of less than half of grieving individuals, and instead results reveal the wide range of possible emotions after a loss (Bonanno et al., 2002; Bonanno, 2005; Wortman & Boerner, 2007, 2011).

Implicit in the assumption that distress is inevitable and necessary is the notion that attempts to “block” or deny the loss and its repercussions can be potentially dangerous and may lead to psychopathology (Bonanno & Field, 2001; Hewson, 1997). This is still being debated and researchers are examining the role of avoidance versus approach-based coping strategies in a myriad of circumstances. For example, Badour, Blonigen, Boden, Feldner, and Bonn-Miller (2012) and Litman (2006) found that greater use of avoidant coping (i.e., separating oneself from the negative emotional states associated with traumatic stress) was associated with greater Posttraumatic Stress Disorder symptoms longitudinally in samples of military veterans and undergraduate students, respectively. Some scholars have argued that avoiding or denying the loss will inhibit the bereaved person’s ability to process or “work through” it and thus induce or prolong stress (e.g., Resick & Schnicke, 1992).

Bereaved persons must “work through” a loss in order to recover.

The notion that in order to return to baseline after a loss, mourners must first “work through” their grief was first posited by Freud (1917) and has been repeated in most models since then (e.g., Bowlby, 1969; Lindemann, 1944; Worden, 1982). Over the years, “grief work”

has come to include cognitive processes, such as confronting the reality of the loss, and behavioral responses, such as expressing negative emotions, as well as detaching from the loved one and incorporating the loss into one's life story. Nonetheless, studies have not supported the notion that working through or confronting a loss is particularly necessary. Most notably, both the four component model (Bonanno & Kaltman, 1999) and the dual-process model (Stroebe & Schut, 1999) posit that confrontation of the reality of the loss is not an essential part of coping with grief. Researchers have found that participants coping with conjugal loss who utilized avoidant coping strategies were no worse off in terms of psychopathology than those who utilized different coping strategies (e.g., Stroebe & Stroebe, 1991). In addition, Bonanno and Field (2001) found that avoidance and denial 6 months following the loss of one's spouse were actually beneficial for some of the participants in their study. These results show that expressing or confronting one's negative emotions may not always be the best course of action for a bereaved person.

Hand-in-hand with the warning against not confronting one's loss is usually the implication of not expressing emotion (Wortman & Boerner, 2007). This, it is argued, may lead to suppression of distress and may lead to future deleterious consequences, such as complicated grief (e.g., Worden, 1982). A few studies have examined the specific role of expression in bereavement by conducting studies in which participants were encouraged either to talk or write about their negative feelings (e.g., Bonanno & Kaltman, 2001; Bonanno, Keltner, Holen, & Horowitz, 1995; Segal, Tucker, & Coolidge, 2009; see Stroebe, Stroebe, Schut, Zech, & van den Bout, 2002, for a more extensive review of this topic). These studies failed to provide any evidence that there is a direct and strong relationship between expression of negative emotions following a loss and return to what participants report to be their baseline. For example, Stroebe

and colleagues (2002) followed longitudinally 128 participants who had suddenly lost a spouse. They did not find any significant differences in psychological health between those bereaved who expressed versus those who did not express their emotions (through writing thoughts and feelings in a diary) over a two-year period. They concluded that expressing emotions was neither particularly beneficial nor critical for adjustment to loss.

Recovery will usually happen in a predictable manner (e.g., stages or tasks).

The belief that coping with a loss will follow some predictable pattern has largely been discarded, with many of the more recent models pointedly moving away from stage theory (e.g., Bonanno & Kaltman, 1999; Stroebe & Schut, 1999; Worden, 1982). Nonetheless, it should be noted that at least two recent studies have results that the authors claim provide some support for stage models of grief. Maciejewski et al. (2007) conducted a longitudinal study of 233 bereaved individuals and maintained that most participants followed a pattern of disbelief/numbness, yearning, anger, depression, and finally acceptance. Furthermore, Holland and Neimeyer (2010) sought to replicate these findings with inconclusive results. Maciejewski et al.'s (2007) study has been heavily criticized (Bonanno & Boerner, 2007; Silver & Wortman, 2007) for severe methodological issues, such as artificially restricting their sample and using incorrect analyses, drawing significant skepticism regarding their conclusions.

Distress will not last indefinitely and bereaved persons are expected to recover.

All of the early coping models (e.g., Bowlby, 1969; Freud, 1917; Lindemann, 1944), and even several of the recent bereavement theorists (e.g., Bonanno & Kaltman, 1999; Stroebe & Schut, 1999, Walsh & McGoldrick, 2004) have maintained that distress and depression are temporary as the bereaved person is processing the loss and that he or she should work toward a state of resolution or acceptance. It is difficult to conceptualize exactly what it means to reach a

state of resolution after a loss (Wortman & Boerner, 2007). Some researchers describe it as incorporating the loss into one's life narrative (Parkes, 1986), while others conceptualize it as the direct opposite of grief (Holland & Neimeyer, 2010; Prigerson & Maciejewski, 2008). Perhaps because of this difficulty in conceptualization, most studies find that complete resolution or recovery does not occur among a significant portion of bereaved persons (Shuchter & Zisook, 1993; Wortman & Boerner, 2007). Interestingly, Balk (2004) warned against the use of the words "recovery" and "resolution" altogether when referring to bereavement, especially in nonprofessional texts. This practice of using the word "recovery" derived from the medical model that influenced many early theorists. However, Balk (2004) argued that this pathologizes bereavement as a whole by implying that it is a deviation from what one's life "should" be. He also advocated for replacing "recovery" with "adapt" or "adjust" in order to signal that loss and bereavement are a normal part of life and also that a complete return to a pre-loss state is likely to be impossible.

The *Diagnostic and Statistical Manual* (5th ed.) still endorses the belief that depression after 12 months post-loss is indicative of psychopathology (DSM-5, American Psychiatric Association, 2013). The DSM-5 now includes a type of depression called "adjustment disorder related to bereavement", which is specifically geared towards people experiencing intense grief after a year post-loss (Bryant, 2012). There is some evidence to suggest that complicated grief may exist and need special attention, with some studies finding that 10-15% of bereaved participants experience grief for prolonged periods of time that are compounded with other disorders (e.g., Prigerson et al., 2009; Shear et al., 2011). There have also been marked objections to this diagnosis being added to the DSM-5, since many clinicians have been concerned that since prolonged grief is not uncommon or dangerous, bereavement can become

overly pathologized (Bryant, 2012).

There are a few scholars who have argued that resolution does not mean that bereaved people will return to a pre-loss condition or emotional state; rather they will simply be able to function relatively normally in everyday life (Bonanno, 2005; Malkinson, 2001; Weiss, 1993). This seems to be a much more reasonable goal for which to strive. However, the assumption that a bereaved person should be able to return to his or her pre-loss baseline about a year after a loss may still be unachievable for all. Many laypersons and physicians alike still refer bereaved people to professionals if they have not reached a state of resolution after a certain amount of time, usually around 12 months post-loss (Payne et al., 2002).

Despite all this evidence, many of these myths remain deeply embedded in Western culture (Holland & Neimeyer, 2010; Konigsberg, 2011; Wortman & Boerner, 2007, 2011). Since the early days of coping myths research, other papers have evaluated the presence and validity of these myths, still finding many to be considered true despite accumulating evidence otherwise (e.g., Wortman & Boerner, 2007, 2011; Wortman & Silver, 2001). Many models of coping have lost favor in light of new evidence; however, some assumptions remain entrenched in the minds of professionals and laypeople alike (Bonanno & Kaltman, 2001; Rothaupt & Becker, 2007; Wortman & Boerner, 2007, 2011).

One recent addition to this list of misconceptions is the assumption that degree of exposure is related to degree of distress. It is frequently assumed that there will be a dose-response relationship between exposure and response. In fact, many self-help websites and television shows frequently endorse this belief (Konigsberg, 2011). According to Konigsberg (2011), many current and formerly popular television shows, such as *The Simpsons* and *The Office*, include situations perpetuating the idea that individuals should experience different levels

of distress based on the degree of exposure to an event or the amount of loss experienced.

However, even in the absence of personal loss or direct exposure to the trauma, some scholars have found powerful effects of media exposure to collective traumas such as terrorist attacks. For example, in studies of the September 11th terrorist attacks and the Boston Marathon bombing, researchers have found significant associations between greater amounts of media consumption and negative mental and physical health consequences (e.g., Holman, Garfin, & Silver, 2014; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). It is still unknown how prevalent this belief is in the general population, but its endorsement may be associated with a number of possible negative effects, including individuals being chastised for experiencing distress if they did not experience something directly, individuals being expected to experience a certain amount of distress based on their exposure degree or amount of loss, or failure to receive appropriate help from professionals or their support network.

Given that several coping models are widely applied to stressors other than the death of loved ones, it is conceivable that myths of coping would also be applicable to individuals dealing with negative events other than bereavement. For example, violent events, such as terrorist attacks, are not typically considered a “loss”, but individuals still largely expect a dose-response relationship in proximity and distress, as evidenced by the *Diagnostic and Statistical Manual* (5th ed.) PTSD diagnosis excluding media-based exposure for PTSD diagnoses among the general population. Another example comes from Bell and Taylor (2011), who found that individuals are expected to experience distress shortly after being fired during a company downsizing, and often resources are made available to those individuals based on this assumption. Therefore, the study of myths of coping and their implications may be conducted in samples of participants who are dealing with negative life events other than loss of loved ones.

Correlates of Endorsing the Myths of Coping

Several factors may be associated with coping myth endorsement. Although Freud's initial work regarding coping with trauma did not investigate individual differences, he later acknowledged that differences in people's experiences might be associated with how they approach coping with stressors. Later researchers expanded on this idea (e.g., Bonnano & Kaltman, 2001; Bowlby, 1980), by incorporating individuals' previous experiences into the coping models, to account for the variability in coping behaviors. Other factors associated with coping myths may be media exposure, as theorized by Konigsberg (2011). Using the mere exposure effect as posited by Zajonc (1996, 2001), the ubiquity of coping information in media may make it such that greater exposure to media could be associated with endorsing myths. Other researchers further claim that coping beliefs could even be associated with future use of media, based on what kind of information individuals are seeking (e.g., Lohaus, Ball, Klein-Hessling, & Wild, 2005)

Given the vastness of this literature and the significant knowledge gaps still present, this project sought to accomplish three main goals:

1. To determine the prevalence of coping myths and to create a demographic profile of persons frequently endorsing myths.
2. To determine the relationship between trauma history, myth endorsement, and subsequent psychopathology following a major traumatic event.
3. To determine the relationship between myth endorsement and media consumption.

Overall Study Design

In order to address these questions, we conducted a longitudinal study with a national sample, followed over 2 years following the Boston Marathon bombing (BMB), as well as in the

weeks shortly after the Pulse nightclub shooting in Orlando, Florida, hereafter called the Orlando nightclub shooting (ONS). Respondents were part of a larger research panel collected by a research company, GfK, which allowed researchers access to pre-BMB data. All study measures and procedures were approved by the University of California, Irvine, Institutional Review Board.

The BMB occurred on April 15th, 2013, when two homemade bombs were detonated near the finish line of the Boston Marathon, killing three people and injuring hundreds of others. Thousands more used media to follow the bombing aftermath, such as the city-wide search for the culprits which lasted several days and victims discussing the events. The ONS occurred on June 12th, 2016, when one man killed 49 and wounded over 50 people in a nightclub in Orlando, Florida, making it, at the time, the worst mass shooting in United States recent history. Similar to the BMB, media coverage of this event lasted several days, leading thousands of people throughout the United States to be indirectly exposed to this horrific event.

Data were collected in collaboration with a web-based survey research company, GfK. Using address-based sampling methods, GfK recruits and maintains a nationally representative panel of adults (KnowledgePanel). If an individual is interested in being part of their online panel but does not have access to a computer or internet, they are provided by GfK to ensure minimal sampling bias due to socioeconomic status. Data for the study were collected online and anonymously. In exchange for completing 3-4 surveys per month, participants on the panel are compensated either with points that are exchanged for merchandise or with free Internet access. Participants were asked to answer questions regarding their lifetime trauma history, media exposure, acute stress symptoms, endorsement of myths of coping, and other variables.

Information about specific waves of data collection and measures assessed will be described in subsequent chapters (see Table 1.2 for full timetable of variables used in the present studies).

Table 1.1 Side by side comparisons of major coping models.

Theorist (year)	Features	Ultimate goal	Strengths	Weaknesses
Freud (1917, 1957)	“Grief work” includes painful struggle, intense yearning for deceased, followed to gradual withdrawal.	Emotional and psychological detachment to deceased	Original work on bereavement. Drew attention to the needs of bereaved persons.	“Grief work” is not well defined and extremely broad; does not differentiate between different coping strategies.
Lindemann (1944)	Bereaved person must confront reality of loss and sever emotional bonds to deceased person.	Emotional detachment to deceased and investment of energy into new relationships	Continued Freud’s work into the special needs of bereaved persons and added that component regarding return to normal life after “grief work” has been completed.	Perpetuated notion that loss must be confronted for successful grieving and concept of “healthy” grief.
Bowlby (1969, 1973, 1980)	Bereaved person struggles between emotional attachment to deceased and his/her absence. Mourner must go through 4 stages of grieving: <ol style="list-style-type: none"> 1. Numbness or shock 2. Yearning for loved one, usually co-occurring with anger 3. Despair and depression 4. Recovery and acceptance 	Acceptance of loss and return to normal functioning	Integrated psychodynamic theory with attachment theory and added the possibility for uniqueness and individual differences in grieving process. Also allowed for anger and yearning to be normal parts of grieving process.	Emphasized need to confront loss before “healthy grieving” can occur and perpetuated notion of linear stages.

Kübler-Ross (1969)	Bereaved persons will go through 5 stages: <ol style="list-style-type: none"> 1. Denial 2. Anger 3. Bargaining 4. Depression 5. Acceptance 	Acceptance of loss and peaceful resolution.	Greatly influential and pervasive in medical and lay communities.	Propagated notion that coping responses are predictable and linear. Emphasized role of depression in coping process and expectation of recovery.
Worden (1982, 2002)	Bereaved persons must complete tasks, in any order and as many times as needed, to successfully mourn a loss: <ol style="list-style-type: none"> 1. Work through or process pain of loss 2. Adapt to loss and reorganize life 3. Emotionally reorganize attachment to deceased 	Memorialize and celebrate deceased.	Moved away from rigid stage models and allows for some variability in coping responses.	Emphasized expectancy of resolution and need to confront or work through a loss. Also highlighted notion that distress should be short-lived and long-term distress is indicative of complicated or unresolved grief.
Lazarus & Folkman (1984), Folkman (2001)	Death of loved one will only be distressing if it exceeds a bereaved person's coping resources. Appraisal of loss will influence psychological reaction and which coping strategies will then be employed.	Successful utilization of coping resources to return to normal functioning.	Allowed for greater influence of cognitive processes in the coping process, as well as emphasized the possible role of positive emotions.	Paucity of research on specific coping strategies makes it difficult to predict which are more helpful than others, suggesting that some coping strategies are more appropriate than others.

Marrone (1999)	<p>Bereaved persons go through phases (slightly less rigid than stages):</p> <ol style="list-style-type: none"> 1. Cognitive reorganization to acknowledge loss 2. Feeling and expression of grief 3. Developing coping mechanisms to adjust to loss 4. Growth-oriented transformation of life post-loss 	<p>Complete transformation of one's life to encompass loss of loved one.</p>	<p>Focuses on growth after loss while also moving away from the notion of rigid stages.</p>	<p>Emphasizes role of grief work, particularly with regards to expression of grief and the dangers of emotional suppression.</p>
Bonanno (1999, 2001)	<p>Model stating that coping process is comprised of 4 components that will influence how successful bereaved person is in dealing with a loss:</p> <ol style="list-style-type: none"> 1. Context of loss (risk factors surrounding the loss) 2. Subjective significance of loss (everyday concerns and meaning of life) 3. Changes in emotional attachment to deceased 4. Coping strategies employed 	<p>Successful coping with stressors to eventually regain normalcy in one's life.</p>	<p>Incorporates aspects from various different models to address various theoretical issues. Emphasizes that expressing grief may not be helpful.</p>	<p>Dearth of research to provide sufficient evidence for or against the model. Indicates that grief and acceptance are polar opposites in the coping process, hinting that acceptance cannot co-occur with grief.</p>

Stroebe & Schut (1999, 2001)	Dual-process model postulates that there are two types of coping strategies (loss and restoration oriented) associated with bereavement between which the bereaved person will oscillate.	Successful coping with stressors to eventually regain normalcy in one's life.	Incorporates aspects from different models to address various theoretical issues, mainly from cognitive theories. Allows for individual differences (such as gender and culture) to be incorporated into the model. Allows for grief to be resolved without direct confrontation with the loss.	Not thoroughly studied to determine whether model is accurate. Indicates that acceptance must be reached eventually.
Walsh & McGoldrick (2004)	Bereaved persons must complete 4 tasks, in no particular order: <ol style="list-style-type: none"> 1. Confront and acknowledge loss 2. Express feelings with others 3. Reorganize family units to fit new roles after loss 4. Invest in other relationships and pursuits 	Adjusting to loss by strengthening family and investing in new relationships.	Emphasizes possible variability in coping responses.	Highlights expectancy of recovery and need to confront and acknowledge loss.

Note: This is not an exhaustive list of all coping models; however, these are the major and most influential models as well as indicative of the paradigm shifts in the last 100 years of coping research.

Table 1.2. Timetable of Variables Utilized in Analyses

	“Wave 0” (Pre-BMB)	Wave 1 (2-4 weeks after Boston Marathon bombing, April 29 th - May 13 th , 2013)	Wave 2 (6 months after bombing, Oct 18 th - Nov 17 th , 2013)	Wave 5 (2 years after bombing, Apr 29 th - Jun 22 nd , 2015)	Wave 6 (1-3 weeks after Pulse nightclub shooting, Jun 17 th -July 18 th , 2016)
Demographics				X	
Mental health	X				X
Myths of coping				X	
Lifetime trauma exposure			X	X	
Media consumption	X	X			X

Note: Table denotes timing of variables used in the present analyses, not the total number of times each variable was assessed throughout the entire study. Measures collected at waves 3 (collected at 1 year after BMB) and 4 (collected between 12-24 months after bombing) were not included in the current study.

CHAPTER 2-BRIEF REPORT ON MYTHS OF COPING

Myths of coping have been discussed theoretically for decades, although very few scholars have collected data about their endorsement. Past research, although conducted on small and non-representative samples, provides some clues as to how different demographic groups may think about the coping process. Kubitz, Thornton, and Robertson (1989) found some evidence of this in their study of a convenience sample of undergraduate students who rated transcripts of various bereaved patients. Transcripts varied in terms of gender of the bereaved individual, whether the loss was sudden or expected, and intensity of symptoms experienced by the bereaved person. Researchers found that both men and women expected women to experience lower intensity distress symptoms when the death was expected as compared to when it was unexpected. Moreover, when the death was not anticipated, men expected women to experience higher intensity symptoms. The authors concluded that gender can impact expectations concerning “normal” grieving processes and emphasized the need for better education regarding trauma and loss.

Sexton (2013) also examined how grief-related beliefs varied across subsamples, namely men versus women, medical staff in a VA hospital versus non-staff, and individuals with high levels of prior trauma exposure versus individuals with low prior trauma exposure. Using a retrospective research design, she recruited a convenience sample of 312 persons from a VA hospital in Kentucky. Medical staff included doctors, nurses, medical administrative staff, and students (both medical and nursing). Non-staff included patients (both in- and out-patients), and family or friends of patients. Grief beliefs were assessed by asking participants if statements in a seven-item measure were true or false (e.g., “if we ignore the pain of loss, it eventually goes away”, “the first anniversary of a loved one’s death marks the time when grieving should be

over”, p. 262). Sexton only found significant differences between males and females in terms of agreement with statements, and no significant differences between participants with or without previous traumatic experiences or between staff and non-staff. This study suffered from significant methodological limitations that interfere with drawing substantive conclusions from these data. The use of a convenience sample and retrospective study design allows for memory bias and other errors to create noise in the final data. Further research is necessary to replicate these findings.

Similarly, Rowa-Dewar (2002) found that gender tended to predict some coping responses. That is, in the year following the loss of their child, women tended to express more emotion and men tended to express less intense distress, although both men and women reported *experiencing* similar levels of distress. Rowa-Dewar argued that these results may not actually be indicative of the actual internal processes; however, her participants may have been ascribing to their expected gender norms, as has been postulated by other theorists (e.g., Cook, 1988; Murphy, Johnson, & Weber, 2002). These results begin to show the importance of examining how gender and other demographic variables may be associated with the endorsement of coping beliefs.

Age may also be associated with myth endorsement, since in the past decades of trauma research, many ideas have gained and lost favor with scientific and lay communities alike. For example, the notion that grief may not be necessary in order to cope “correctly” is about 30 years old (e.g., Silver & Wortman, 1980), and there is still great debate among scientific circles regarding this proposition. Therefore, it is likely that older participants, who were not as exposed to the discussion and may have received this type of information as infallible, will endorse more myths than younger participants. Lastly, it is conceivable that different cultural and

socioeconomic backgrounds may also be associated with differences in coping myth endorsement. Some theorize that the sociocultural context matters greatly with regard to coping beliefs because norms and expectations about the coping process differ between cultural groups (Aldwin, 1994; Morimoto, Shimada, & Tanaka, 2015).

Given the paucity of findings available on how myth endorsement may vary by demographic characteristics, the demographic correlates of endorsing the myths of coping was examined in a large representative sample of Americans shortly after the Boston Marathon bombing. It was hypothesized that women would endorse myths more than men and that older participants would endorse myths more than younger participants.

Methods

Sample

Data for this study come from Wave 5 (collected at 2 years post Boston Marathon bombing, BMB). Wave 5 was fielded from April 29 to June 22, 2015 to 4,275 KnowledgePanelists (78% completion rate, n=3,314). GfK, the company responsible for collecting the data, provides poststratification weights in order to correct discrepancies between the sample and U.S. Census benchmarks. Therefore, population-based inferences can be drawn from this sample. Weights are first calculated reflecting unequal selection probabilities for different recruits for the KnowledgePanel. Weights are then post-stratified according to the most recent U.S. Census statistics, compensating for any differential responses levels in the final sample. Finally, the weighted composition of the final sample is examined and compared with the target population as defined by the benchmarks of the U.S. Department of Commerce. In this study, the final weights were computed using iterative proportional fitting to account for the following characteristics: age (18-29; 30-44; 45-59; 60+), sex, race/ethnicity (Hispanic, non-

Hispanic white, non-Hispanic black, non-Hispanic other, non-Hispanic multi-race), education (less than high school, some college, BA/BS or higher), income (\$0-\$24,999, \$25,000-\$49,999, \$50,000-\$74,999, \$75,000+), region (Northeast, Midwest, South, West), metro status (metro, nonmetro), and internet access (see Holman et al., 2014).

Variables

Myths of coping were assessed by asking participants to rate their agreement with ten items on a 5-point agree-disagree scale (1= strongly disagree, 2= somewhat disagree, 3= neither agree nor disagree, 4=somewhat agree, 5=strongly agree). Items were as follows:

Item 1: “Almost all people experience the same kinds of strong negative emotions after experiencing trauma (e.g., assault, natural disaster).”

Item 2: “People go through predictable stages of different emotions (anger, depression, etc.) after experiencing trauma.”

Item 3: “Negative emotions need to be processed or “worked through” following a traumatic experience.”

Item 4: “People who do not experience negative emotions shortly after a traumatic event will develop emotional problems later on.”

Item 5: “You can tell how upset a person will be after a traumatic event if you know how severe the event was (e.g., degree of loss experienced).”

Item 6: “People who are physically close to a traumatic event when it happens will have stronger emotional responses than people who are farther away from it.”

Item 7: “People who do not find resolution or acceptance after a traumatic event will experience prolonged grief.”

Item 8: “It is normal for people to remain distressed more than 10 years after some traumatic events.” (reverse coded)

Item 9: “After experiencing or witnessing a major traumatic event, it is important for people to seek professional help.”

Item 10: “It is abnormal to experience positive feelings soon after a traumatic event.”

GfK collected demographics separately in a data collection prior to the survey in which myths were assessed, and then again at each subsequent wave of data collection. Participants reported their age (originally collected as continuous variable, broken into following categories by research team in order to determine relationship between variables and distinct age groups 18-29; 30-44; 45-59; 60+), sex (male/female), and race/ethnicity (Hispanic, non-Hispanic white, non-Hispanic black, non-Hispanic other, non-Hispanic multi-race), education level (originally collected as less than high school, some college, BA/BS or higher, dichotomized some or completed college vs. no college education), region of residence (New York City area, Boston area, remainder of United States), and income (\$0-\$24,999, \$25,000-\$49,999, \$50,000-\$74,999, \$75,000+).

Results

Demographic breakdown analyses were conducted using sampling weights, correcting results back to United States population. Participants at Wave 5 were 53.7% female.

Race/ethnicity breakdown is as follows: 67.6% White, 10.8% Black, 13.3% Hispanic, 1.5% Multiracial, and 6.8% Other ethnicity. Respondents were 18.3% 18-29 years old, 24.8% 30-44 years old, 28.7% 45-59 years old, and 27.1% over 60 years old. 38.7% of participants had completed high school or less and 61.3% had some or total completed college education, 60.4% of participants had an annual income of over \$50,000. All analyses were conducted using Stata

(Version 15.0; Stata Corp, College Station, TX), using sampling weights correcting sample back to U.S. Census benchmarks on the following dimensions: age, sex, race/ethnicity, education, income, region, Internet access, and metro status.

Analyses began by performing an exploratory factor analysis to determine whether the items mapped onto a different number of factors than originally theorized. Only one factor was extracted with an Eigen value greater than 1.0 (Eigen value=2.46), suggesting that the items were best considered as a composite summative score, rather than as separate subscales. One item (item 8) had a small, negative factor loading, after being reverse coded, and was dropped from the total score. Internal reliability analyses were conducted with the remaining nine items, with the average score achieving a Cronbach's alpha of 0.75, which is within acceptable limits (Tavakol & Dennick, 2011). Finally, a confirmatory factor analysis was conducted using the SEM builder in Stata where all the nine remaining items were mapped onto a single factor. Goodness of fit indices (SRMR=0.077 and CD=0.783) indicate the data fit adequately well with this model (Bollen, Tueller, & Oberski, 2013; Hu & Bentler, 1995; Reise et al., 2000). See Table 2.1 for factor loadings for both exploratory and confirmatory factor analyses. Subsequently, the nine items of the final scale were averaged into a composite score, with higher numbers indicating greater endorsement of myths of coping ($M=3.33$, $SE=0.01$, weighted $n=3,314$). Two-thirds (66.7%, $n=2,210$) of the sample reported a total myth endorsement average above 3.0 (which denoted "neither agree nor disagree" on the 5-point Likert scale), and 12.0% ($n=398$) of the sample reported a total myth endorsement average above 4.0 (which denoted "somewhat agree" on the 5-point Likert scale).

Next, regression analyses between the overall myths of coping measure and demographics were used to build a demographic profile of participants who were more likely to

endorse myths. The model included the overall myths measure as the dependent variable, while the independent variables were sex (female/male), age (18-29 years old, 30-44 years old, 45-59 years old, over 60 years old), race/ethnicity (Hispanic, White, Black, Other, Multiracial), region (Boston, New York, U.S.), income (\$0-\$24,999, \$25,000-\$49,999, \$50,000-\$74,999, \$75,000+), and level of education (some or completed college/no college education). Region, income, and educational level were not significantly associated with myth endorsement, so a final model was run with sex, age, and race/ethnicity as the independent variables. Average myth endorsement was significantly associated with sex, age, and race/ethnicity ($F[8, 3310]=6.49, p<0.001, R^2=0.03$, see Table 2.2). Final model analyses showed that women tended to endorse myths more strongly than men, older participants endorsed myths more strongly than younger participants, and Hispanic participants endorsed myths more strongly than White participants.

Discussion

The purpose of these analyses was to examine whether myths of coping are pervasive in our culture and whether they vary between different demographic groups. Another goal was to examine whether a large-scale validation study to create a robust Myths of Coping scale was warranted.

Exploratory factor analysis found that nine out of the ten items in the myths of coping scale mapped onto a single factor, suggesting the use of a composite measure describing participants' overall endorsement of coping myths. Confirmatory factor analyses reinforced the exploratory factor analysis results that nine items fit well as a single combined measure. Internal reliability analyses reached an acceptable level; therefore, future research should be conducted for a full-scale validation in order to create a myths of coping scale that reaches greater levels of internal reliability.

When examining the prevalence of coping myths, over 60% of the sample reported at least moderate endorsement of coping myths, with a little over 10% of the sample reporting stronger endorsement of coping myths. Several of these myths, such as the need for early distress, have been present in psychological literature since the time of Freud and have not yet been adequately challenged by scholars (Rothaupt & Becker, 2007) . Several other myths, such as that people go through predictable stages when dealing with grief and trauma, are widely distributed through health professional literature as well as via lay media (Konigsberg, 2011). Lastly, another myth measured in the scale, namely the concept that physical proximity to an event is predictive of intensity of negative emotion, is still a topic of much debate, with the current version of the DSM-5 not allowing for PTSD diagnosis to be given to someone who was only exposed to a traumatic event via media (American Psychiatric Association, 2013).

Secondly, analyses between endorsement of myth items and demographics found a number of interesting results. Participants' age and sex was found to be related to myth endorsement, with older participants endorsing myths more strongly than younger participants and with women endorsing myths more strongly than men. The age differences in myth endorsement likely reflect the fact that scientific notions are currently subject to public debate, and have really only been challenged at large in the past 30 years (Konigsberg, 2011). Older participants were likely exposed to psychological literature as absolute truth and were not exposed to the notion that coping responses can and usually do vary, since the introduction of individual variation in coping processes started to gain traction in the 1980s (e.g., Silver & Wortman, 1980). Since then, several models have arisen with this inherent variability actively incorporated, such as the integrative models of coping (e.g., Stroebe & Schut, 2001), which allow for variations in coping strategies based on people's previous life experiences. Individuals

who grew up and experienced significant negative life events before this debate began might have been exposed to stricter beliefs and expectations about the coping process. The sex finding is consistent with previous research demonstrating that women more frequently endorsed myths that may be conforming to gender norms (e.g., Rowa-Dewar, 2002; Sexton, 2013). Analyses into differences between ethnicities only resulted in Hispanic participants endorsing myths more strongly than other participants. Previous work has posited that Hispanic participants have different coping styles from White participants. Cobb, Xie, and Sanders (2015) and Epstein-Ngo, Maurizi, Bregman, and Ceballo (2013) found that Hispanic participants dealing with community violence and other stressors tended to engage in social support seeking and emotional coping, which they argue signals that Hispanic participants deal with losses by attempting to work through distress and by expressing their emotions. This could signal a cultural expectation that this is the “correct” manner to deal with loss and other negative life events.

This study sought to begin understanding how myths of coping are associated with demographic factors. Further research on this topic should delve into longitudinal considerations about the relationship between coping myths and psychological health, as well as other factors associated with their endorsement in the first place. Better understanding of preconceived notions concerning the coping process will help media outlets, health professionals, and the general public deal with stressful life events, whenever they occur, whether they are collective, such as the 9/11 attacks, or private, such as a loved one passing away.

Table 2.1 Factor Loadings for Exploratory Factor Analysis and Confirmatory Factor Analysis

Item #	Item subtitle	EFA	CFA
1	All distressed	0.51	0.47
2	Predictable stages	0.59	0.61
3	Must work through	0.53	0.57
4	Early distress inevitable	0.57	0.57
5	Severity=distress	0.44	0.39
6	Proximity=distress	0.48	0.52
7	Not resolved=grief	0.63	0.66
8	Resolves over time	-0.29	--
9	Must seek help	0.47	0.51
10	No early positive emotion	0.32	0.30

Note: EFA results suggest one factor (factor 1 Eigen value= 2.46). Item 8 was dropped from confirmatory factory analysis.

Table 2.2. Demographic Correlates of Mean Myths Endorsement at Wave 5 (n=3,314)

Demographic variable	Mean myths endorsement (SE)	β	95% CI	t
Sex				
Male	3.30 (0.02)	-	-	-
Female	3.36 (0.02)**	0.08	.01, .13	2.60
Age				
18-29 years old	3.22 (0.04)	-	-	-
30-44 years old	3.29 (0.03)	0.07	-.03, .17	1.32
45-59 years old	3.36 (0.03)**	0.17	.07, .26	3.27
Over 60 years old	3.42 (0.02)***	0.23	.14, .33	4.80
Race/Ethnicity				
White	3.32 (0.01)	-	-	-
Hispanic	3.42 (0.05)**	0.17	.07, .27	3.30
Black	3.30 (0.05)	-0.01	-.11, .09	-0.22
Other	3.36 (0.08)	0.06	-.12, .23	0.63
Multiracial	3.23 (0.09)	-0.06	-.23, .12	-0.63
Education				
Some/completed college	3.32 (0.02)	-	-	-
No college	3.35 (0.02)	-	-	-
Income				
\$0-\$24,999	3.36 (0.05)	-	-	-
\$25,000-\$49,999	3.38 (0.03)	0.03	-.09, .14	0.47
\$50,000-\$74,999	3.29 (0.03)	-0.07	-.19, .05	-1.17
\$75,000+	3.32 (0.02)	-0.30	-.14, .08	-0.58
Region				
Boston	3.32 (0.02)	-	-	-
New York City	3.37 (0.04)	-	-	-
National	3.35 (0.05)	-	-	-

Note: Reference variables were Male, 18-29 years old, White, no college education, annual income under \$25,000, and Boston region. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Education, region, and income were not significantly associated with myths endorsement and were dropped from final model.

CHAPTER 3- MYTHS OF COPING AND STRESSFUL LIFE EVENTS

We still do not know why both lay persons and clinicians alike continue to endorse certain myths of coping, despite evidence against them. When Freud first began his research into coping with bereavement in the early 1900s, he proposed coping as a process that varied little from person to person. Later in his studies, he began to soften this position, conceding that some variations in people's experiences may translate into differences in their coping processes (Rothaupt & Becker, 2007). Bowlby (1980) originally maintained that there is a strong relationship between attachment and trauma history and how a bereaved person will cope with a loss. He posited that individuals with healthier attachment styles (subsequently called "secure" attachment by future scholars) would handle losses much better than individuals who had less healthy attachment styles (called "anxious" or "avoidant" by future scholars). By handling current losses better, Bowlby postulated that an individual would learn from those experiences and feel better prepared to handle future losses, and thus would experience less distress and depression when confronted with a loss. He also posited that attachment styles would influence beliefs concerning how to cope with different events, potentially making more securely attached individuals less susceptible to false coping beliefs (Wortman & Boerner, 2007, 2011). Since then, the rise in "integrative models" of coping (e.g., Stroebe & Schut, 2001) emphasized that grief -- and therefore the coping process -- would differ depending on certain characteristics, such as the context of the stressor, subjective meaning of the stressor, and one's personal history with other stressors. Therefore, one possibility is that people will -- or will not -- endorse myths based on their prior exposure to loss or trauma. If evidence shows that lifetime traumas play a significant role in forming coping myths, then they may be a useful source of information for future research and intervention.

Further studies have found a link between trauma history and psychological outcomes post-trauma (Seery, Holman, & Silver, 2010), finding a complex relationship between trauma history and outcomes. Seery et al. (2010) found that individuals who had previously experienced a few traumatic events experienced lower psychological distress, functional impairment, and posttraumatic stress symptoms than both individuals who experienced no traumatic events and individuals who experienced a great deal of trauma. The authors hypothesized that experience with previous stressors might actually teach people what their resources are and what strategies might work. Given the link between trauma history and psychological outcomes, it is possible that trauma history may be associated with the degree of myth endorsement, perhaps by allowing some individuals to learn effective coping strategies from past traumatic experiences. Individuals who have experienced a few traumatic events might understand how to best handle different stressors or merely that they are capable of dealing with negative life events. One study has examined this possibility in part, by asking participants from a VA hospital to rate their endorsement of myths and comparing results between individuals with or without prior traumatic experiences (Sexton, 2013). Although Sexton (2013) did not find any significant differences between the groups, this study was conducted using a small, non-representative sample and suffered from other methodological issues that hinder the ability to draw strong conclusions.

These changes in models and expectations about coping might impact not only the clinicians and researchers delving into this literature, but also how individuals receive coping information and professional help while dealing with a stressor. For example, Cohen-Louck and Ben-David (2016) argue that coping with violent trauma is typically different from coping with other types of trauma, often because of how victims are treated by health professionals. That is, frequently health professionals have different expectations for the coping process of people who

experienced violent trauma (such as the need to seek professional help or process the trauma emotionally) and this could contribute to what the victims themselves believe about the coping process. Although clinicians are attempting to help, they may also be inadvertently contributing not only to a continued belief in coping myths overall, but also in emphasizing one myth over another depending on the type of stressor. This could contribute to myth endorsement differing between groups of people with different histories of exposure to stressful events.

The time in one's life during which a major stressor is experienced may also be associated with strategies employed to cope with the stressor. Skinner and Zimmer-Gembeck (2007) examined the extant literature on the development of coping with stressors and found that several patterns regarding coping and stage of human development emerged. For example, support seeking was more frequently used by young children compared to young adults, whereas distraction and escape tended to be used more often by pre-teens (individuals under 13 years old) than by young adults. Similarly, Seiffge-Krenke, Aunola, and Nurmi (2009) found that avoidant coping was more commonly used by children and pre-teens than by older adolescents and adults. Interestingly, Seiffge-Krenke and colleagues (2009) found an interaction between age and situational factors (i.e., type of stressor) such that adolescents were more likely to use active forms of coping (i.e., problem-focused) with school-based stressors than with stressors related to parents or romantic partners. Older adults, in contrast, typically show declines in active coping, such as seeking instrumental support from network members, and cognitive reframing of obstacles (Aldwin, Sutton, Chiara, & Spiro, 1996; Felton & Revenson, 1987; Pearlin & Schooler, 1978). After experiencing a high number of stressful events early in life, individuals may continue using the coping behaviors that were successful for those early stressors. This may lead to an association between different beliefs about the coping process among these individuals

compared to those who encountered stressors later in life. For example, early stressors could be associated with low endorsement of the need to express negative emotions shortly after a stressor, since children and adolescents frequently use avoidant coping. However, experiencing more stressors as an adult may be associated with higher endorsement of the need to process one's emotions, since adults tend to use more active coping methods.

Coping myths have been a subject of conversation for over 35 years and much research has been conducted to examine the arguments originally raised by Silver and Wortman (1980). Despite how long scholars have known of the fallibility of many coping models, a great deal of flawed information is still presented to the medical, nursing, and lay public (Downe-Walboldt & Tamlyn, 1997; Holman et al., 2010; Payne et al., 2002). This is particularly problematic since the vast majority of people in the United States will experience at least one traumatic experience, including loss, in their lifetimes, if not more (Kessler et al., 1995; Skinner et al., 2003). Societal pressure and judgment against coping "incorrectly" may actually keep individuals from receiving social support or other outside sources of help after a traumatic experience or loss (Silver & Wortman, 1980; Wortman & Silver, 1989).

Rothaupt and Becker (2007) hinted at the possible negative consequences of endorsing coping myths for individuals coping with a loss. Some researchers have theorized that endorsing myths might interfere with how individuals cope with a loss (e.g., Bonanno, 2004); however, there are few studies that have actually examined whether and how endorsement of myths might be associated with the coping process, either by internal pressure (i.e., individuals feel like they need to cope in a particular way) or through external pressure (i.e., members of one's social network disapprove of the ways in which individuals cope with a stressor and overtly or covertly influence their coping behaviors). There is also no work to date examining the relationship

between endorsement of myths and future acute stress after a loss, since added pressure during the coping process may be associated with higher levels of distress, as suggested by Rothaupt and Becker (2007). The current study aims to investigate the relationship between overall and specific types of lifetime trauma and coping myth endorsement, as well as what impact the timing of these events might have on endorsement patterns. Furthermore, we sought to examine whether endorsement of myths of coping was associated with greater distress following another major stressor, namely the Pulse nightclub shooting in Orlando, Florida in June, 2016. Supplemental analyses were conducted to explore 1) whether myth endorsement mediated the relationship between stressful life event exposure and acute stress, and 2) whether the interaction of total recent events (i.e., occurring in the past 12 months) and myth endorsement was associated with acute stress following a subsequent major stressor.

Methods

Sample

Data for the current study comes from Wave 2 (6 months post Boston Marathon bombing, BMB), which included measures of stressful life events; Wave 5 (2 years post BMB), which included measures for myths of coping endorsement, demographics, and stressful life events; and Wave 6 (1-3 weeks after Orlando nightclub shooting), which included measures for acute stress.

Wave 2 was conducted from October 18th, 2013 to November 17th, 2013, with an 81.0% completion rate (n=3,588). Wave 5 was fielded from April 29 to June 22, 2015 to 4,275 KnowledgePanelists (78% completion rate, n=3,314). Wave 6 was fielded from June 17, 2016 to July 18, 2016 to 4,292 KnowledgePanelists (75% completion rate, n=3,199).

Variables

Myths of coping were assessed by asking participants to rate their agreement with ten items on a 5-point agree-disagree scale (1= strongly disagree, 2= somewhat disagree, 3= neither agree nor disagree, 4=somewhat agree, 5=strongly agree). One item was dropped (see Chapter 2) and scores for nine of these ten items were averaged, such that a higher average was indicative of greater myth endorsement ($\alpha=0.75$).

Acute stress symptomatology was assessed using the Acute Stress Disorder Scale-5 (Bryant, 2014), a 14-item measure asking participants to answer questions about how they felt since the Pulse nightclub shooting on June 12, 2016 in Orlando, Florida (e.g., “do you have problems with concentration?”) on a 5-point Likert scale ranging from 0 (Not at all) to 4 (A great deal). Responses from all 14 items were summed, where higher numbers indicate greater acute stress symptomatology.

Life events history was assessed by asking respondents whether they ever experienced each of 37 adverse events, and whether the events had occurred in adulthood (after 18 years old), childhood (before 18 years old) at Wave 2, or in the past 12 months at Wave 5. This measure was developed by members of the current research team and has been used to collect data from comparable national samples (e.g., Seery et al., 2010; Silver et al., 2002). Based on previous work, such as Blum, Poulin, and Silver (2014) and an iterative process between research team members, the items in this measure have been divided into seven categories: *illness/injury to self* (e.g., experienced a serious illness or accident); *illness/injury to another* (e.g., close relative's illness, witnessing injury/death to someone other than a family member); *violence* (e.g., physically attacked or assaulted; had sexual relations under force or threat), *bereavement* (e.g., death of relative); *social-environmental stress* (e.g., experienced serious financial difficulties; lived in dangerous housing or neighborhood); *relationship stress* (e.g., experienced parents'

divorce); and *disaster exposure* (e.g., experienced a major fire, flood, earthquake, or any natural disaster).

Life events history data was coded in several ways. First, timing of event was coded as a categorical variable indicating whether the event occurred in the participant's childhood (1), adulthood (2), or in past 12 months (3). Second, the event type was coded as a categorical variable, using the categories described above. Thirdly, total number of stressful life events was calculated for each participant by summing all events indicated to have been experienced and used as continuous variable.

Covariates included mental health history, measured by GfK prior to the BMB. Almost 75% of the respondents had completed modified items from the Centers for Disease Control's National Center for Health Statistics Annual National Health Interview Survey (NHIS), assessing prior physician-diagnosed depression and anxiety disorders. Missing data were then imputed using sequential Hotdeck imputation (see Holman et al., 2014). Responses were coded 0 (no diagnoses of depression or anxiety), 1 (either anxiety or depression), or 2 (both depression and anxiety). This was included to account for possibility that higher acute stress symptoms may be associated with mental health diagnoses occurring before the Boston Marathon bombing. Models also included direct exposure to 9/11 or BMB, measured by asking participants whether they or someone they were close to was at, injured by, or near the site of the 9/11 terrorist attacks or the Boston Marathon bombing on April 15, 2013 (0=no exposure, 1=any direct exposure). This was included to account for possibility that direct exposure to collective traumas may be associated with higher levels of acute stress, regardless of myth endorsement or previous trauma history.

Analytic Strategy.

Statistical analyses were conducted using Stata (Version 15.0; Stata Corp, College

Station, TX). All analyses in the current study used sampling weights provided by GfK, which retains oversampling of participants from New York and Boston. All analyses also included demographic variables (sex, age, and ethnicity, region, income, and education), pre-BMB mental health, and 9/11 or BMB exposure, with variables not reaching significance being removed from final models.

In order to ascertain the relation between prior stressful life event exposure and myth endorsement, multiple regressions were used with average myth endorsement as the dependent variable. Timing of events (childhood vs. adulthood vs. recent events), type of events (death of loved one, serious illness of loved one, interpersonal/relationship stress, socio-environmental stress, violent events, own serious illness, and disasters), and total number of stressful life events were included individually as the independent variable in a series of models. Composite variables summing all the negative events before age 18, after age 18, and in past 12 months were also run in multiple regression models to determine the possible aggregate association between timing of events and myth endorsement.

In order to establish the association between myth endorsement and acute stress symptoms, a negative binomial regression was used with acute stress total score as the dependent variable and myth endorsement average as the independent variable. Negative binomial regression was used for these analyses because of overdispersion in the acute stress variable, where the standard deviation was larger than the mean.

Results

Stressful Life Events Predicting Myths of Coping

Total stressful life events.

Analyses began by examining whether the total amount of stressors in one's life was associated with the degree to which individuals endorsed myths of coping. To explore this, a score of all stressful life events experienced was used as the predictor of average myth endorsement. Analyses showed that higher total lifetime stressful event exposure was significantly associated with greater endorsement of myths of coping ($\beta=0.007$, $p=0.04$), though the relationship was small.

Type of events.

The most common type of stressful life event reported by participants (weighted $n=3,341$) was death of a close friend or family member (78.4% of participants reported at least one), followed by serious illness of family or friends (75.3%). See Table 3.1 for frequency of negative life events reported by participants.

Analyses continued by examining whether different types of stressful life events were predictive of overall myth endorsement. Higher reports of violent events ($\beta=0.03$, $p=0.02$), death of loved ones (approximating significance, $\beta=0.05$, $p=0.05$), and relationship stressors ($\beta=0.02$, $p=0.008$) were associated with higher endorsement of coping myths.

Timing of events.

Participants (weighted $n=3,341$) reported between 0-26 stressful life events in childhood ($M=1.80$, $SD=2.62$), 0-29 events in adulthood ($M=4.86$, $SD=3.97$), and 0-9 events in the past 12 months ($M=0.54$, $SD=0.95$).

Analyses were conducted to ascertain whether the cumulative effect of events occurring at specific time points (i.e., childhood, adulthood, past 12 months) was associated with myth endorsement. When examining the total number of stressful life events that occurred in childhood ($\beta=0.0003$, $p=0.982$), adulthood ($\beta=0.004$, $p=0.357$), or in the prior 12 months

($\beta=0.03$, $p=0.179$), no results reached significance. Subsequently, analyses were conducted to examine whether the timing of the specific types of events over the lifespan might be associated with myth endorsement. For these analyses, participants were asked, after indicating that an event had happened to them, to specify if the event had occurred prior to or after 18 years of age. Analyses showed that higher reports of childhood relationship stressors ($\beta=0.02$, $p=0.03$) and adulthood relationship stressors ($\beta=0.06$, $p=0.02$) were associated with stronger endorsement of myths of coping.

Myths of Coping Predicting Acute Stress

Finally, analyses were conducted to examine the hypothesis that higher endorsement of myths would be associated with higher levels of acute stress in response to a subsequent collective trauma. Acute stress scores could range from 0-56 (weighted $n=3,341$, $M=7.02$, $SD=7.98$). Results showed that higher endorsement of coping myths was associated with greater levels of acute stress symptoms ($\beta=0.24$, $p<0.001$).

Supplemental Analyses

Mediation analysis.

Since the regression analyses between stressful life events and myth endorsement showed a positive relationship between stressful life events and coping myths, and given the literature linking stressful life events and acute stress (e.g., Andersen, Silver, Stewart, Koperwas, & Kirschbaum, 2013; Garfin, Holman, & Silver, 2015), mediation analyses were conducted in order to determine the possible role myths of coping may play in mediating the relationship between prior stressful life event experience and acute stress in response to a subsequent collective trauma. These analyses were conducted using the Preacher-Hayes (2004) method, using bootstrapping in lieu of the Sobel test as suggested by Zhao, Lynch, and Chen. (2010).

This methodology has recently been favored rather than the traditional Baron and Kenny (1986) model because it does not require the zero-order effect of X on Y to be significant before indirect effects can be tested. Furthermore, many scholars have argued that direct effects may actually be masking mediators and that partial mediations (or indirect effects in addition to direct effects) are theoretically and statistically sound (Shrout & Bolger, 2002; Zhao et al., 2010). Preacher and Hayes (2004) further argue that a bootstrap test is more robust than the typical Sobel's test, because Sobel's test does not yield a normal distribution leading to inaccurate conclusions. The bootstrapping test works around this issue by generating several other sampling distributions based on the study sample parameters and using those to determine the 95% confidence intervals (Preacher & Hayes, 2004, 2008).

Acute stress was used as the dependent variable and the independent variables were the life events variables that were significantly (or close to) associated with myth endorsement, including lifetime relationship stressors, death of loved ones, violent events, relationship stressors in childhood and adulthood, and lifetime total of negative events. Average myth endorsement was included as the mediating variable. Mediation analyses with violent events, or childhood and adulthood relationship stressors, were not significant (see Table 3.2).

Mediation analyses found that higher reports of lifetime relationship or interpersonal stressors (e.g., getting divorced) were significantly associated with greater myth endorsement ($\beta=2.11, p<0.001$), which in turn was associated with higher levels of acute stress ($\beta=0.04, p=0.008$). Higher lifetime relationship stress remained significantly associated with greater acute stress, indicating a partial mediation ($\beta= 0.61, p<0.001$).

Mediation analyses found that higher reports of deaths of loved ones were significantly associated with greater myth endorsement ($\beta=1.99, p<0.001$), which was also associated with

higher levels of acute stress ($\beta=0.12, p=0.002$). Higher lifetime levels of deaths of loved ones was no longer significantly associated with greater acute stress, indicating a full mediation ($\beta=0.80, p=0.07$).

Mediation analyses found that higher reports of total lifetime stressors was significantly associated with greater myth endorsement ($\beta=2.10, p<0.001$), which in turn was associated with higher levels of acute stress ($\beta=0.01, p=0.027$). Higher lifetime stressful life event levels remained significantly associated with greater acute stress, indicating a partial mediation ($\beta=0.28, p<0.001$).

Moderation analysis.

Endorsement of myths of coping is theorized to be relatively stable throughout one's life, being forged through a lifetime of experiencing stressors. For this reason, we sought to examine whether the interaction of myth endorsement and the experience of a recent stressor (i.e., in the previous 12 months) moderated the relationship between stressor history, myths endorsement, and acute stress. In order to conduct these analyses, a variable summing all recent events was mean centered and then used to create an interaction term with the overall myth endorsement measure, which was also standardized. A multiple regression model was computed where acute stress level was the dependent variable, myth endorsement and recent stressors were the independent variables, and the interaction term was added last as the moderating variable. As shown in Table 3.3, greater myth endorsement was associated with greater acute stress symptoms, and higher reports of recent stressors significantly moderated this relationship, such that the interaction between recent stressors and myth endorsement was more highly associated with acute stress than either independent variable alone.

Discussion

This is the first study, to our knowledge, to examine the possible correlates of endorsing coping myths. This investigation had two goals. First, it sought to examine the relationship between stressful life events and endorsement of myths of coping. Second, it sought to determine whether greater endorsement of myths of coping was associated with greater acute stress following a major stressor more than one year later. Supplemental analyses examined 1) whether greater endorsement of coping myths mediated the relationship between higher lifetime trauma exposure and greater acute stress, and 2) whether the interaction between recent events and myths was associated with greater acute stress. The main strengths of this project include the nationally representative sample with pre-BMB mental health, as well as the use of a longitudinal design.

Analyses showed that greater levels of total lifetime trauma were associated with higher myth endorsement. We further found that higher myth endorsement was associated with greater reports of deaths of loved ones, relationship stressors, and violent stress. Lastly, higher reports of relationship stressors specifically in childhood and adulthood were also associated with greater endorsement of coping myths.

Mere exposure literature may help explain these effects. Zajonc's (1968) original exploration of this phenomenon showed that, at its simplest, the mere exposure effect refers to the tendency for individuals to perceive a stimulus more positively after repeated exposure to it. It is possible that repeated exposure to myth-laden messaging from both media and social network members could eventually push individuals to perceive those messages more positively, especially if this comes from multiple sources (e.g., TV, health care professionals, and friends). If an individual experiences one negative event, she/he likely encounters some myth information from network members, but after limited exposure to this information, she/he may or may not

believe it. If this individual continues to experience more negative events, continued exposure to myths may contribute to the greater endorsement of these misconceptions. This could come from well-meaning individuals, such as physicians who when focusing on trauma-informed care (Classen & Clark, 2017) may provide greater amount of coping information for patients who have experienced greater numbers of stressful life events.

This could be especially true for particularly popular models, such as the Kubler-Ross (1969) model, which may explain why greater myth endorsement was associated with greater frequency of death of a loved one. It is possible that this reflects the continued prevalence of the Kubler-Ross (1969) model in hospitals and nursing texts (e.g., Holman et al., 2010), which emphasizes that distress must be worked through in order for resolution to be achieved. This further implies that individuals may be receiving this information from sources of authority, such as medical professionals during times of crisis. Deaths of loved ones can be unpredictable and if those deaths are the result of a prolonged illness, those seeing loved ones go through a painful process might seek out any fonts of certainty. These individuals, feeling helpless for themselves and their loved ones, may offer these coping beliefs as a way of doing something active about their experience rather than just be passive spectators. Further research could explore whether, and if, a saturation point is eventually reached, meaning whether the linear relationship between stressful life events and myth endorsement eventually becomes asymptotic and ceases to increase.

Another possible explanation for this could be that violent and relationship stressors both could be considered events that threaten one's worldview, meaning that the average person is unlikely to expect to experience these events and when they do occur, it causes a significant shift in their understanding of the world (Janoff-Bulman, 1989; Schwartzberg & Janoff-Bulman,

1991). Once this chaos is introduced into their lives, they might seek out frequently espoused notions about coping as a way of adding more order and sense into their lives. Another possibility is that media messaging likely plays a key role in propagating both myths of coping and distress after these types of events. Both fictional (drama TV shows and movies) and non-fictional (news) sources of media typically portray people responding to violent and relationship stressors with intense distress, and show that those who do not experience those emotions are unusual (Konigsberg, 2011). Mere exposure literature (Zajonc, 2001) may provide a possible mechanism through which myths are socialized or internalized following discussion by TV characters or celebrities who are simply trying to help.

We also found that greater endorsement of myths of coping was associated with higher acute stress. This follows the theorized relationship (e.g., Rothaupt & Becker, 2007) between myth endorsement and acute stress where pressure to cope in a particular way can lead to greater stress. Based on hypotheses by Bonanno (2004) and Konigsberg (2011), participants might have experienced pressure to cope in specific ways or experienced judgement for being “not distressed enough” or “too distressed”. These findings highlight the need for continued and greater attention to this relationship because despite our best efforts, society as a whole as well as health professionals may be inadvertently causing more distress for a vulnerable population, such as those who have experienced high numbers of stressful life events.

The mediation analyses revealed some interesting results. Myth endorsement was found to significant mediate the relationship between acute stress and violent events, relationship stress, and total life events. If just about any person can reasonably be expected to experience an already upsetting event, it is particularly important that he/she is not then led to experience even greater distress simply because others are trying to make him/her cope in predetermined --and

potentially unhelpful -- ways. Especially in cases of more frequently experienced stressors, like death of loved one or relationship stress, it is important to remember that the only truly reliable finding in the last century of coping research is how variable coping responses can be. These findings may highlight that coping myths are still potentially being disseminated to the general public and becoming embedded in the dominant lay culture, as argued by Konigsberg (2011).

Finally, moderation analyses showed that the interaction between myth endorsement and total events occurring in the prior 12 months was associated with greater acute stress following a collective trauma. These findings suggest that myth endorsement may amplify the relationship between recent traumatic events and acute stress. Participants going through a significant negative stressor in the prior year are already at risk for experiencing higher acute stress, and may also experience guilt over not coping “correctly”. This inconsistency between expectations about the coping process and the reality of actually going through it may lead to feelings of cognitive dissonance, which can in turn also be distressing (e.g., Cronqvist, Theorell, Burns, & Lutzen, 2001). This could lead to a synergistic effect and higher acute stress than either myth endorsement or recent events would account for separately.

The current study had several strengths and limitations. Having information about participants pre-BMB mental health allowed us to control for a significant source of variance in our analyses on acute stress response to the Orlando nightclub shooting. One major limitation is that we do not have information about how the participants actually coped after both the BMB and the Orlando shootings. Future studies should not only use a more developed coping myths assessment, but also measure participants’ coping behaviors so that endorsement of myths can be studied in conjunction with (or at least while controlling for) coping behaviors. Future studies can also examine different levels of coping myths, where participants could endorse a myth for

the population as a whole but hold entirely different beliefs for how they themselves should cope with a stressor. Finally, further research should be conducted on how coping myths develop and what role media may play in disseminating this information to the population at large. Since a few studies have already found that nursing texts are rife with coping misconceptions, it will be helpful to also know how the lay public acquires this information.

There are several implications to be derived from these findings. The most surprising is that individuals do not seem to be learning “best practices” from past traumatic experiences. If anything, results indicate that greater number of stressful life events may make persons more susceptible to believing in some coping myths, making them an especially vulnerable population. It is also possible that the ubiquity of stressful life events reported by scholars (e.g., Skinner et al., 2000) may be part of the mechanism through which myths of coping remain embedded in current society, despite lack of evidence for them. Intervention efforts can target individuals who have experienced high numbers of traumatic events and address these specific myths with them. For example, knowing that individuals experiencing a death of a loved one are more likely to believe in coping myths, such as that distress is necessary, can help hospital staff be prepared to field questions from friends and family members who do not feel they are distressed enough. Given the difficulty in reaching individuals after a major traumatic event, it will be important to also continue working towards eradicating coping myths from the majority of wide-reaching sources, such as media content and self-help books. Findings from this study clearly indicate that future research is imperative to more fully understand the relationship between lifetime trauma history, coping myths, and acute stress.

Table 3.1 Percentage of Sample Reporting Lifetime Exposure to Different Types of Negative Life Events (n=3,341).

<u>Type of event</u>	<u>% participants reporting</u>
Death of loved one	78.4%
Serious illness of loved one	75.3%
Interpersonal/relationship stress	61.8%
Socio-environmental stress	51.4%
Violent events	40.1%
Own serious illness	33.7%
Disasters	21.3%

Table 3.2. Results of Mediation Analyses between Stressful Event Variables and Acute Stress Mediated by Myths (n=3,341).

Independent Variable	Path axb		Path a	Path b	Path c		Type of mediation
	β	95% CI	β	β	β	95% CI	
Violent events	0.03	-.005, .08	1.94	1.08	1.13	.61, 1.64	None
Death of loved one	0.12	.05, .20	1.99	0.69	0.80	-.07, 1.67	Full
Relationship stress	0.04	.01, .07	2.11	0.55	0.61	.30, .93	Partial
Childhood relationship stress	0.03	-.00, .07	2.16	0.66	0.71	.33, 1.10	None
Adulthood relationship stress	0.09	-.00, .19	2.56	0.62	0.75	-.02, 1.51	Full
Total lifetime stressor	0.01	.00, .03	2.11	0.27	0.28	.15, .42	Partial

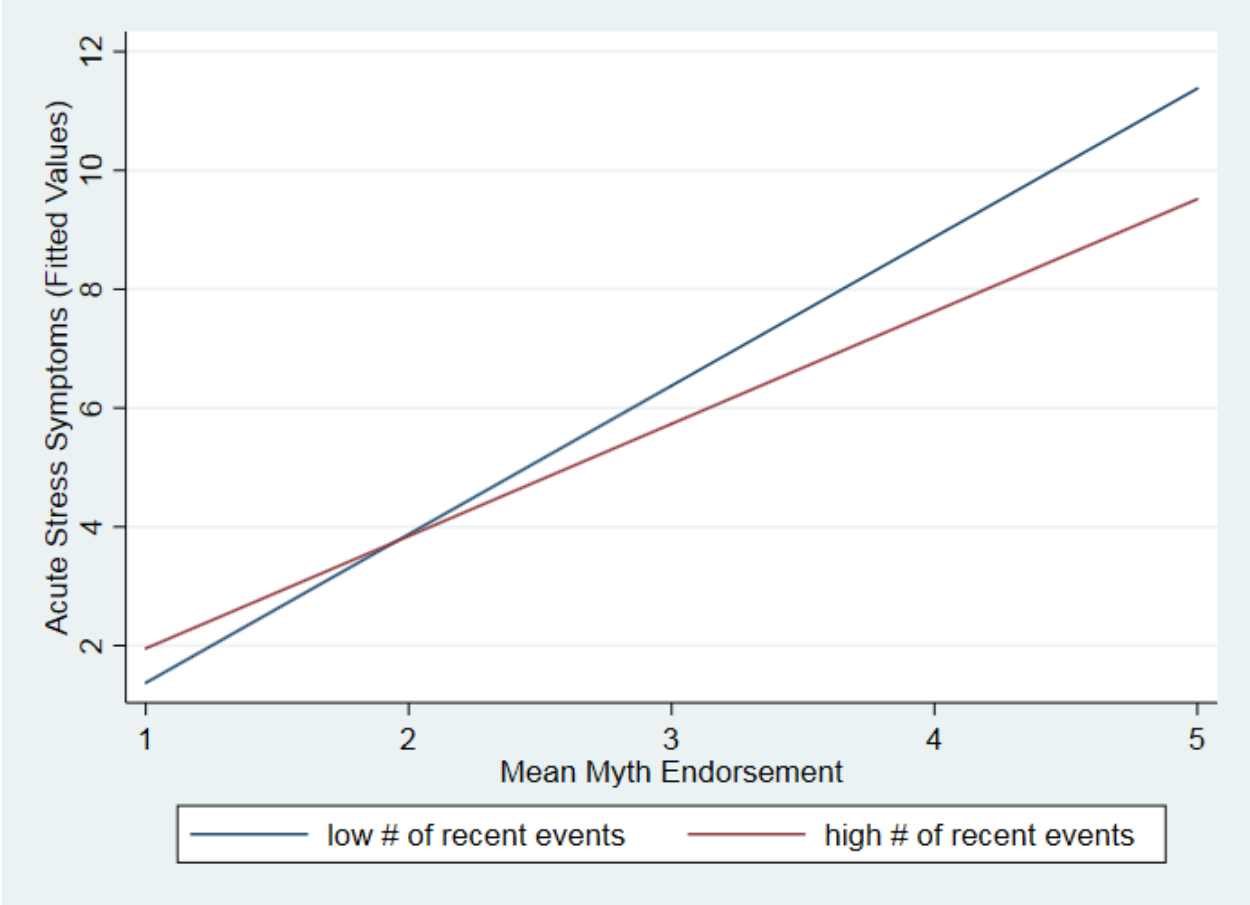
Note: Only significant results listed. Path axb refers to the indirect, mediated effect of life events to acute stress through myth endorsement; path a refers to the effect from negative life events to myth endorsement; path b refers to the effect from myth endorsement to acute stress; path c refers to the effect of life event history on distress.

Table 3.3. Moderation Analysis Predicting Acute Stress by the Interaction of Recent Stressors and Myths Endorsement (n=3,318)

	β	p	95% CI
Total recent stressors	1.17	<0.001	.66, 1.67
Mean myth endorsement	1.93	<0.001	1.15, 2.71
Recent stressors X Myth endorsement	7.08	0.043	0.02, 1.29

Model statistics: $F(3, 2,310) = 21.43, p < 0.001, R^2 = 0.054$

Figure 3.1. Interaction Analysis for Differences in Number of Recent Events in Myth endorsement Predicting Acute Stress Symptoms.



CHAPTER 4- MYTHS OF COPING AND MEDIA

Media has been playing an increasing role in stressful life events, especially following mass traumatic events such as the BMB, because of how and how often these events are discussed (Konigsberg, 2011; Slone & Shoshani, 2006; Thoresen, Jensen, & Dyb, 2014). Konigsberg (2011) hinted at the possibility that the source of myth information may impact how much individuals endorse particular beliefs. She posits that media, support network members, medical personnel, and a variety of texts (medical, psychological, and nonprofessional) can propagate coping myths. She focused primarily on how media may have a large influence over myth endorsement and concludes that it would be helpful to determine if this is true. Silver (2004) further claimed, “‘Coping Do’s and Don’ts’ are frequently espoused in the media, without acknowledgement of the limitations of the research base” (pg. 48). If evidence shows that media plays a significant role in propagating coping myths, then it may become a prime target for future research and intervention. To date, no studies have examined all the possible sources of myths, typically focusing on only one, such as nursing texts (e.g., Holman, Perisho, Edwards, & Mlakar, 2010).

Although scientific researchers have found evidence that does not support many previously held assumptions about coping, several lay or nursing texts still endorse many coping myths (Holman et al., 2010). Despite lack of evidence that all griever achieve recovery, many clinical textbooks still include an expectation that it will happen, after an appropriate amount of time grieving, usually around a year (Holman et al., 2010; Malkinson, 2001; Payne et al., 2002; Wortman & Silver, 2001). The expectancy of recovery is so ubiquitous that many self-help websites (e.g., www.helpguide.org/articles/grief-loss/coping-with-grief-and-loss) include some type of timetable during which “normal” grieving should occur. After a given amount of time,

grief would then be labeled as “complicated” or “unresolved” and professional assistance is strongly recommended (Bryant, 2012).

In the lay community, the endorsement of stage models of grief is especially salient. Many popular self-help books and websites still endorse stages of grief, beginning with depression. Many of these sites are extremely reputable (e.g., WebMD) and are the top results when researching “how to grieve” (e.g., www.webmd.com/mental-health/mental-health-coping-with-grief; www.mentalhealthamerica.net/conditions/coping-loss-bereavement-and-grief; www.helpguide.org/articles/grief-loss/coping-with-grief-and-loss) in the most popular search engines. The Kübler-Ross (1969) model is arguably the most widely known for laypersons (Wortman & Boerner, 2007), being frequently referenced in popular U.S. media, such as among television personalities Conan O’Brien and Stephen Colbert and in television shows such as *Lost*, *The Office*, *Scrubs*, and *The Simpsons* (Konigsberg, 2011). Despite accumulating evidence against this assumption, the public has not been equally educated on recent findings concerning coping.

A few researchers have examined various texts and interviewed clinicians to determine what content is actually provided to trauma therapists and nursing professionals (e.g., Downe-Wamboldt & Tamlyn, 1997; Holman et al., 2010; Payne et al., 2002). Downe-Wamboldt and Tamlyn (1997) investigated nursing and medicine programs in the United Kingdom and Canada to assess which theories were taught most heavily and found that the stage models of coping posited by Kübler-Ross (1969) and Parkes (1986) were the most often cited and utilized. These results have been replicated in other studies (e.g., Holman et al., 2010), finding that up to 87% of nursing textbooks endorsed stage models of coping or other coping myths.

In order to determine how grief counselors in the United Kingdom actually conducted

therapy for bereaved patients, Payne et al. (2002) interviewed 29 therapists and found that most of these clinicians implicitly structured their therapeutic plans around stage models of grief, with the expectation of recovery over time. Furthermore, these researchers found that 52% of their participants believed that there is a relatively normal pattern of grieving that followed a sequence of stages or phases that could be mapped onto a patient. Paradoxically, the researchers also found that the clinicians believed that the coping process is highly individualized, meaning that the intensity and duration of stages could be quite different between patients. They often recognized the impact of individual circumstances but claimed, “on the whole they have a generalized pattern” (p. 168). Therapists in this study also tended to agree with the concept of a patient being “stuck” in a particular stage, unable or unwilling to move on to the next stage and requiring professional help to do so (this finding was also replicated in a patient sample by Bjørkløf, Kirkevold, Engedal, Selbæk, & Helvik, 2015). Lastly, clinicians in the Payne et al. (2002) sample held onto an estimate of time during which patients should go through their “grief work” and be helped to express their grief in order to improve and resume normal functioning, which tended to be around 1 year post-loss. Misinformed clinicians can be especially detrimental when presented in the media as experts, potentially exposing and influencing a wide audience on coping myths (Klin & Lemish, 2008).

The relationship between media exposure and coping with stressors has been examined for several years, with scholars finding that media can help crystalize how the public perceives coping behaviors and mental health after a collective stressor, in the days and weeks thereafter (Corrigan et al., 2005; Purtle, Lynn, & Malik, 2016; Sieff, 2003). If the information being disseminated is fallacious, as it often is (Klin & Lemish, 2008; Konigsberg, 2011), then some people exposed to that material can form distorted beliefs about the coping process. According to

Konigsberg (2011), the type of media (e.g., social media vs. television) can also play a role in how information is perceived based on differences in target audiences and other inherent biases. Some scholars have delved more deeply into how media shapes the public discourse on coping with stressors (e.g., Lemyre et al., 2010; Thoresen et al., 2014); this research can be interpreted to show how specific coping myths may inadvertently be disseminated by different types of media. One avenue that has been identified is television programs' frequent use of interviews of directly exposed victims (Thoresen et al., 2014). Although these persons have unique insights into an event and may be key sources of information, especially in the early hours immediately after a major collective trauma, they also often impart information about how they are personally coping with that stressor. Media outlets frequently emphasize the distress that is associated with collective or terrorist events, and repeatedly portray the outpouring of sadness experienced by many following such events. Since these interviews are often replayed repeatedly over the hours and days after an collective or terrorist event, repeated exposure to that information may be associated with others believing that they should they be distressed as well, based on the mere exposure effect (Zajonc, 2001).

According to recent research, crisis situations can lead to increased feelings of uncertainty, and individuals are generally uncomfortable with not having enough information, especially when this lack of information could represent greater future danger (Boyle, Schmierbach, Armstrong, McLeod, Shah, & Pan, 2004). Boyle et al.'s (2004) Uncertainty Reduction Theory further postulates that individuals can then be drawn to media as a way of gathering more information in efforts to reduce uncertainty during crisis events (Spence, Westerman, Skalski, Seeger, Sellnow, & Ulner, 2006). Other studies have found that social media, in particular, can also be extremely effective at transmitting stress and coping information

(Goodwin, Palgi, Hamama-Raz, & Ben-Ezra, 2013; Lemyre et al., 2010). Researchers argue that social media presents not only the “facts” but also the personal narrative that can make that information even more salient. Interestingly, social media may also be a way of questioning the “mainstream” information (Friedman, 2011), such that those who already do not believe the common coping information may be buoyed by interactions on social media to continue coping in a more individualized manner.

Although heightened exposure to media may exacerbate myth endorsement, it is also possible that those who consume more media will endorse different coping myths. Given the potential dangers of too much media exposure after a collective stressor (e.g., Holman, Garfin, & Silver, 2014; Silver, Holman, Andersen, Poulin, McIntosh, & Gil-Rivas, 2013), it is important to determine what could be contributing to individuals seeking out different types of media. Lohaus, Ball, Klein-Hessling, and Wild (2005) found that young adolescents dealing with stressors sought different types of media for help in the coping process. For example, print media is typically associated with stress reduction (e.g., Koopman, 2014), while other media (e.g., internet use or television) may be associated with greater arousal (Kuss, Dunn, Wolfling, Muller, Hedzelek, & Marcinkowski, 2017; Potts & Sanchez, 1994). Therefore, if one believes that stressors need to be processed and faced head-on, then he/she may watch more news media in order to learn as much as possible about a collective stressor and how to deal with it. Similarly, people who follow the stages of grief model may seek out media that will allow them to feel sadness, such as media that includes explicit images (e.g., television) and personal accounts from victims (e.g., social media). Knobloch-Westerwick, Hastall, and Rossman (2009) argue that mood regulation can play a role in driving media consumption, not only in what media individuals gravitate to during a crisis but also what media sources are avoided. They theorize

that in efforts to reduce negative moods and stress, individuals may reduce their normal levels of news exposure about an event. Thus, individuals who do *not* endorse the notion of early distress being crucial may report lower levels of news exposure in the hours and days following a collective traumatic event. Discerning how individuals seek out media can have broad repercussions for understanding how media is associated with psychological functioning and myth endorsement after a major stressor.

Several social psychological theories may be useful in helping explain why individuals gravitate towards specific types of media during times of crisis. Selective Exposure Theory (Finn, 1997; Zillman & Bryant, 1985, 1994), at its simplest, postulates that people will seek out stimuli in their environment based on interest in a particular area. Dutta-Bergman (2004) expanded this theory with the notion that media consumption is a “product of active choice” (pg. 46), where individuals’ belief structure, as well as their current situation (e.g., negative life event), may impact their motivations to use different types of media. LaRose and Eastin (2004) argue in a similar line of reasoning that expectations about the gratification received from media as well as interactions with other individuals experiencing the same event, may drive media content exposure, such that if individuals want to be comforted about their choice of coping strategy, they will seek out media that depicts examples of others coping in similar ways. Niche Theory (Dimmick, 2003; Dimmick, Kline, & Stafford, 2000) and Reinforcement Theory (Atkin, 1985) further add to this line of reasoning by proposing that different media fulfill different needs for consumers and that individuals will seek out media and messages consistent with, and reinforcing of, their preconceived notions. Therefore, endorsement of different myths may be associated with future consumption of different types of media. For example, individuals who believe they must work through their distress and grief may seek out types of media that would

force them to confront the reality of the events unfolding around them, such as television news shows specific to the event. Furthermore, using Management Theory, from communications literature, as a framework, theorists have argued that individuals may use media to modulate their emotions, such that an individual experiencing increased negative emotions may seek out comedies rather than news (Boyle et al., 2004).

Finally, individuals in different age groups may seek out and be impacted by media in different ways. Kaplan (2004) found that adolescents spend almost 40% of their time consuming media in various forms. Similarly, the Pew Research Center (2014) found that half of social media users, especially Facebook, get the bulk of their news information through stories and videos posted there; of those users, the vast majority are between 18 to 29 years old. Research conducted using the current study's participants has also found that users in different age groups consumed different types of media at different rates, with younger participants gravitating towards new media (internet and social media) and older participants using more traditional media (television, radio, and print; Jones, Garfin, Holman, & Silver, 2016). Given this variety in media exposure between age groups, it is conceivable that the relationship between media and myth endorsement would differ between participants of different ages.

In light of this literature, this study sought to examine two main research questions. First, is greater prior media exposure associated with greater myth endorsement, and second, is greater myth endorsement associated with greater future media exposure? We also sought to examine whether the relationship between media exposure and future myth endorsement differed between age groups.

Methods

Sample

For this project, variables came from waves 1 (2-4 weeks post BMB), 5 (2 years post BMB), and 6 (1-3 weeks after the Pulse nightclub shooting in Orlando, Florida). The first survey was fielded between April 29th and May 13th, 2013 (2-4 weeks after the bombing) to 6,098 KnowledgePanelists. A total of 4,675 completed the survey (n=76.66%) during the fielding period. Wave 5 was fielded from April 29 to June 22, 2015 to 4,275 KnowledgePanelists (78% completion rate, n=3,314). Wave 6 was fielded from June 17, 2016 to July 18, 2016 to 4,292 KnowledgePanelists (75% completion rate, n=3,199).

Variables

Myths of coping were assessed by asking participants to rate their agreement with ten items on a 5-point agree-disagree scale (1= strongly disagree, 2= somewhat disagree, 3= neither agree nor disagree, 4=somewhat agree, 5=strongly agree). One item was dropped (see Chapter 2), and the remaining nine items were averaged into a composite measure of myths endorsement, where greater values signify greater endorsement of myths ($\alpha=0.75$).

Media exposure to a collective trauma was collected at wave 1 and wave 6 by participants indicating how many hours per day (ranging from 0 to 11+ hours) during the week after the Boston Marathon bombing (or Orlando nightclub shooting) they were exposed to several types of media (e.g., television, radio, online news, social media). These data were used to create a continuous variable indicating the degree of media exposure (in hours per day) in the weeks after the bombing (wave 1) and the Orlando shooting (wave 6). Two more continuous variables were created separating the media consumption responses into “traditional” media (television, radio, print) and “new” media (online news, videos, and social media). Since participants could choose more than one type of media, it was possible for exposure totals to

exceed 24 hours; therefore, we standardized responses for media use in wave 1 such that results are in standard deviation units to facilitate comparisons between types of media.

Pre-BMB television watching, collected by GfK prior to the BMB on the majority of the wave 1 sample (93.96%, n=4,393). Participants reported how frequently they watched 117 television channels (e.g., CNN, TBS, local morning news channels) during the last 6 months (i.e., 6 months prior to the bombing) on a 5-point scale (1=never to 5=three times a week). The mean frequency consumption across all channels was created as the pre-BMB television watching index.

Covariates included demographics as well as direct exposure to 9/11 or BMB, measured by asking participants whether they or someone they were close to was at, injured by, or near the site of the 9/11 terrorist attacks or the Boston Marathon bombing on April 15, 2013 (0=no exposure, 1=any direct exposure). 9/11 exposure was included as a possible covariate in order to account for possibility that greater exposure to a major collective stressor would be associated with different levels of media use after another major collective traumatic event.

Analytic Strategy

All analyses in this study used the sampling weights that retained the oversampling of participants from New York and Boston. All analyses included demographic variables (region, education, sex, income, age, and ethnicity), exposure to prior collective traumas (i.e., 9/11), degree of exposure to BMB, with variables not reaching significance being removed from final models.

In order to determine the relationship between media exposure (at wave 1) and myth endorsement, multiple regressions were conducted with myth endorsement as the dependent variable. An initial bivariate model was run with pre-BMB media consumption as the

independent variable. A second model was then run with pre-BMB media consumption and BMB-related traditional media as the independent variables. A third model included pre-BMB and BMB-related traditional media consumption as the independent variables, adding in demographic covariates as well. Lastly, past research has found age differences in media consumption, so it is possible that age moderates the relationship between media use and myth endorsement (e.g., Jones et al., 2016; Kaplan, 2004). To examine this possibility, an interaction term was created for media use (mean centered) and age (mean centered). This interaction term was added to a final model with independent variables (pre-BMB media use and BMB-related traditional media consumption), as well as demographic covariates. The same procedure was used to examine the relationship between myth endorsement and new media.

To determine the relationship between myth endorsement and media use following a future collective trauma, a second set of analyses were conducted. Specifically, multiple regressions were run with media exposure after the Orlando nightclub shooting as the outcome (total hours for traditional or new media) and myth endorsement as the independent variable. An initial bivariate model was run with just overall myth endorsement as the independent variable. Then, a second model was run with overall myth endorsement, as well as pre-BMB media use and BMB-related traditional consumption as independent variables. A third model was run that included myth endorsement, pre-BMB, and BMB-related traditional media consumption as independent variables, adding in demographic covariates as well. The same procedure was used to examine the relationship between myth endorsement and new media.

Results

Media Use

At wave 1, participants were exposed to a weighted average of 3.75 hours of traditional media ($SE=0.06$) and an average of 2.07 hours of new media ($SE=0.06$). At wave 6, participants were exposed to a weighted average of 1.92 hours of traditional media ($SE=0.04$) and an average of 1.54 hours of new media ($SE=0.06$). For both waves, participants tended to consume more traditional media than new media, though this difference was smaller in wave 6. The average for frequency of television watching prior to BMB was 2.90 (Range= 1 (never) – 5 (three times per week), $SE=.01$).

Wave 1 Media Predicting Myth Endorsement

Traditional media. Analyses showed that there was no association between greater traditional media exposure and myth endorsement for participants overall. This remained true even after adding wave 1 (post-BMB) media use and covariates in the model. The interaction between media use and age was significant (see Table 4.1 and Figure 4.1); therefore, analyses examining the relationship between traditional media exposure and myth by individual age groups were conducted and are reported below.

18-29 years old. Analyses showed that for the sample's youngest participants, media exposure prior to the BMB was significantly associated with lower myths endorsement ($\beta=-0.37$, $p=0.003$), although BMB-related media exposure at wave 1 was not ($\beta=0.01$, $p=0.58$, $F[4,109]=4.97$, $p=0.001$, $R^2=0.24$)

30-44 years old. For participants between 30 and 44 years old, both pre-BMB ($\beta=0.08$, $p=0.35$) and BMB-related media were not significantly associated with myth endorsement ($\beta=-0.002$, $p=0.79$, $F[7, 185]=3.89$, $p=0.001$, $R^2=0.20$).

45-59 years old. For participants between 45 and 59 years old, pre-BMB ($\beta=0.10$, $p=0.08$) and BMB-related media were not significantly associated with myth endorsement ($\beta=0.00$, $p=0.99$, $F[7, 383]=1.65$, $p=0.12$, $R^2=0.07$).

Over 60 years old. For the oldest participants in the sample, pre-BMB ($\beta=0.10$, $p=0.09$) and BMB-related media were not significantly associated with myth endorsement ($\beta=0.02$, $p=0.07$, $F[3, 546]=3.76$, $p=0.02$, $R^2=0.03$).

New media. Analyses showed that there was no association between greater new media exposure and myth endorsement, for participants overall. This remained true even after adding wave 1 media use and covariates in the model. The interaction between new media use and age was significant (see Table 4.1 and Figure 4.2); therefore, analyses examining the relationship between new media exposure and myth by individual age groups were conducted and are reported below.

18-29 years old. For participants between 18-29 years old, pre-BMB media exposure was associated with lower myths endorsement ($\beta=-0.33$, $p=0.009$), although BMB-related media exposure at wave 1 was not ($\beta=-0.01$, $p=0.38$, $F[3,10]=2.68$, $p=0.05$, $R^2=0.18$).

30-44 years old. For participants between 30 and 44 years old, both pre-BMB ($\beta=0.07$, $p=0.40$) and BMB-related media were not significantly associated with myth endorsement ($\beta=0.005$, $p=0.60$, $F[7, 185]=3.85$, $p=0.0006$, $R^2=0.20$).

45-59 years old. For participants between 45 and 59 years old, pre-BMB ($\beta=0.10$, $p=0.07$) and BMB-related media were not significantly associated with myth endorsement ($\beta=-0.01$, $p=0.42$, $F[7, 383]=1.70$, $p=0.11$, $R^2=0.07$).

Over 60 years old. For the oldest participants in the sample, pre-BMB ($\beta=0.09$, $p=0.12$) and BMB-related media were not significantly associated with myth endorsement ($\beta=0.02$, $p=0.16$, $F[6, 542]=1.42$, $p=0.20$, $R^2=0.04$).

Myth Endorsement Predicting Wave 6 Media Use

Traditional media. Analyses showed that there was no association between myth endorsement and greater future traditional media use. This remained true after adding wave 1 media use, pre-BMB media use, and covariates (see Table 4.2).

New media. Analyses showed that there was no association between myth endorsement and greater future new media use. This remained true after adding wave 1 media use, pre-BMB media use, and covariates (see Table 4.2).

Discussion

The present study sought to examine the relationship between media exposure following a collective trauma and myth endorsement. Specifically, analyses were run to examine whether greater exposure to traditional or new media in a trauma's aftermath was associated with greater endorsement of myths of coping, as well as whether greater endorsement of coping myths was associated with seeking out greater levels of media after a major collective stressor. We further endeavored to understand how this relationship might differ between participants in different age groups. Analyses showed that greater use of both new and traditional media in the aftermath of one collective trauma was not associated with future endorsement of myths in the aftermath of another collective trauma three years later, when analyzing participants all together. Interaction analyses suggested that there might be age differences in the relationship between media use and myth endorsement. When examining whether myths endorsement was associated with media use

after a future collective stressor, analyses showed that there were no significant relationships between myth endorsement and subsequent use of traditional or new media.

When conducting the analyses in separate age groups, some results emerged. For younger participants, greater exposure to traditional and new media prior to the Boston Marathon bombing was significantly associated with lower endorsement of myths of coping, while the opposite was true for older participants, although this only approximated significance. We also found that for younger participants, greater endorsement of myths was significantly associated with higher use of traditional media shortly after the Orlando nightclub shooting.

There are several ways to interpret these results. It is not surprising that results differed somewhat for participants of different ages. According to Zoeteman, Kersten, Vos, van de Voort, and Ale (2010), information disseminated through various media outlets should be and frequently are differentiated for each target group. Previous work (Jones et al., 2016; Kaplan, 2004) found that older participants tend to gravitate towards traditional media, whereas younger participants tend to use newer, alternative forms of media for acquiring news. Based on the audience each of these media types are targeting, the content is likely to be different, with social media focusing more on firsthand accounts of those at the “ground level” and television shows including more “expert” viewpoints (Lemyre et al., 2010; Thoresen, et al., 2014). Agenda Setting Theory argues that news media can have a significant impact on targeted audiences and that often the same information is presented through very different lenses based on the target consumers (Cissel, 2012).

Furthermore, de Waal and Schoenbach (2010) as well as Asur and Huberman (2010) posit that online sources are especially powerful at conveying new messages because of the greater opportunities for interactivity with the material and personal discussion of content with

others experiencing similar situations. Younger participants spend more time on social media, but also on multiple social media sites (Dutta-Bergman, 2004), meaning that they could be exposed to and actively engage with people experiencing the whole gamut of emotions following a major stressor. This potentially explains why, for participants under 30 years old, greater use of new media was associated with lower myths endorsement. LaRose and Eastin's (2004) work presents the possibility that younger individuals, who are already inclined to endorse fewer coping myths (as reported in Chapter 2), may gravitate towards media content that depicts multiple types of coping behaviors and belief structures. This creates a positive feedback loop wherein these individuals would then be exposed to and internalize the inherent variability in coping responses, leading them to endorse even fewer coping myths. According to LaRose and Eastin (2004), people will use media that provide them the gratification they are seeking in certain situations. Therefore, if younger participants need to feel as if their various coping strategies are not wrong, they may seek out types of media content that support this notion. It will be important to continue examining the reach and role of social media news, as research shows that its effects will only grow over time (de Waal & Schoenbach, 2010; Horrigan, 2006).

Reinforcement Theory (Atkin, 1985) might help explain why older participants who consumed more traditional and new media in general were more likely to endorse coping myths, though this result only approximated significance. According to this research, individuals will consume media that reinforces their preconceived beliefs, which then strengthens those beliefs even more. It is difficult to know precisely what content our respondents were exposed to in this study since we only have information about how the information was delivered (e.g., TV, online news) and not the actual material being presented. This finding raises the possibility that older adults may be actively avoiding media channels that contradict their beliefs. This is potentially

problematic for any future endeavors to educate the public about the inherent and acceptable variability in coping strategies.

According to Konigsberg (2011), traditional media, especially television shows, frequently portray the myth that there are stages of coping. The Media Dependency Theory postulates that people will seek out very specific types of media during times of crisis and that they will especially consume already trusted sources (Brasheas et al., 2000; Lachlan, Spence, & Seeger, 2009). Uncertainty Reduction Theory further posits that when confronted with a level of uncertainty that may result in greater levels of danger, individuals will go to tried and true media outlets for their information (Boyle et al., 2004). This would lead individuals dealing with stressors to go to media sources that will buttress that notion.

The present study has some limitations that must be taken into consideration. The two biggest issues are 1) the lack of information about the content to which the participants were exposed, which limits the conclusions that can be drawn from our findings, and 2) what other media sources did participants use shortly after the Orlando nightclub shooting. Lohaus et al. (2005) suggest that individuals can also go to non-news media for comfort and stress-relief after a major negative event. Therefore by limiting participants' responses to just news, we do not know for what other purposes, other than merely information gathering, participants are using media during the aftermath of a disaster. Future research has some specific challenges to explore to continue this line of inquiry. Beyond gathering information on content and other types of media used after a collective trauma, researchers should examine methods of reducing myth endorsement in different populations. There is research showing how difficult it is to change individuals' existing beliefs (e.g., Levi, 1991); therefore, it will be helpful to understand how

individuals form and reinforce these coping beliefs in the first place before they can be challenged.

This study found that myths of coping and media exposure are intertwined in complex ways. The implications of these findings can be wide reaching for trauma and media exposure research currently being conducted. Researchers should examine how we can use media as an intervention tool to counteract the dissemination of coping myths that has occurred for the past several decades. It could be possible to educate newscasters so that they may provide informed commentary on coping processes following collective traumas, such as the recent mass shootings (e.g., Las Vegas shooting in October 2017), or to even educate TV writers about the dangers of using coping myths as joke punchlines. Media will continue to be a ubiquitous and ever-growing presence in today's society; therefore, understanding its relationship with myth endorsement and subsequent coping behaviors can significantly improve outcomes for many individuals struggling with losses and traumas.

Table 4.1. Prior Media Use Predicting Myth Endorsement (n=3,341)

	Traditional media				New media			
	β	95% CI	SE	t	β	95% CI	SE	t
Bivariate								
Pre-BMB media use	0.03	-.05, .11	0.04	0.68	0.03	-.05, .11	0.04	0.68
Multivariate								
Pre-BMB media use	0.02	-.06, .11	0.04	0.59	0.04	-.04, .12	0.04	0.40
Wave 1 media use	0.00	-.01, .01	0.01	0.12	-0.01	-.02, .00	0.01	0.16
Covariates								
Age	0.01***	.00, .01	0.00	3.95	0.01***	.00, .01	0.00	4.03
Sex								
Male	-	-	-	-	-	-	-	-
Female	0.09	-.02, .20	0.56	1.63	0.10	-.01, .21	0.06	1.75
Ethnicity								
White	-	-	-	-	-	-	-	-
Black	-0.16	-.36, .05	0.11	-1.46	-0.16	-.36, .05	0.13	-1.49
Hispanic	0.13	-.32, .44	0.19	0.32	0.15	-.30, .43	0.09	1.71
Other	0.06	-.04, .30	0.09	1.52	0.06	-.02, .31	0.18	0.35
Multiracial	0.14	-.04, .32	0.09	1.50	0.14	-.03, .32	0.09	1.63
Education								
No college	-0.03	-.15, .10	0.06	-0.43	-0.03	-.15, .09	0.06	-0.43
Some/completed college	-0.01	-.02, .01	0.01	-0.90	-0.01	-.02, .001	0.01	-0.87
Income								
\$0-\$24,999	-	-	-	-	-	-	-	-
\$25,000-\$49,999	0.12	-.08, .33	0.11	1.16	0.12	-.08, .32	0.10	1.14
\$50,000-\$74,999	0.30*	.07, .54	0.12	2.56	0.31**	.08, .53	0.12	2.66
\$75,000+	0.04	-.15, .23	0.10	0.41	0.04	-.15, .22	0.09	0.40
Prior exposure to collective trauma	0.05	-.13, .22	0.09	0.55	0.06	-.12, .24	0.09	0.66
Direct BMB exposure	-0.36**	-.60, -.13	0.12	-3.09	-0.32**	-.55, -.08	0.12	-2.66
Interaction								
Media use X age	0.001***	.00, .001	0.00	5.05	0.001*	.00, .001	0.00	1.99

* $p < .05$, ** $p < .01$, *** $p < .001$; BMB=Boston Marathon bombing; Reference groups were Male, White, under \$24,000, and no college. Age (continuous) was added to explore the main effects prior to interaction analyses.

Table 4.2. Myth Endorsement Predicting Future Media Use (n=2,773)

	Traditional media				New media			
	β	95% CI	SE	t	β	95% CI	SE	t
Bivariate								
Myth endorsement	0.59	-.05, 1.22	0.33	1.80	0.43	-.55, 1.41	0.50	0.86
Multivariate								
Myth endorsement	1.00	-.29, 2.30	0.66	1.52	1.55	-.51, 3.60	1.05	1.48
Pre-BMB media use	0.51**	.20, .82	0.16	3.24	0.16	-.34, .66	0.25	0.64
Wave 1 media use	0.18***	.11, .26	0.04	4.64	0.21**	.09, .34	0.06	3.29
Covariates								
Age	-0.00	-.02, .02	0.01	-0.01	-0.05	-.08, .02	0.01	-3.29
Sex								
Male	-	-	-	-	-	-	-	-
Female	-0.59	-1.24, .06	0.33	-1.79	-0.25	-1.21, .07	0.49	-0.52
Race/Ethnicity								
White	-	-	-	-	-	-	-	-
Black	1.67**	.62, 2.71	0.53	3.12	1.14	-.38, 2.67	0.78	1.47
Hispanic	0.52	-.44, 1.48	0.49	1.07	4.29*	.09, 8.49	2.14	2.00
Other	2.94*	.24, 5.65	1.38	2.13	0.24	-1.17, 1.64	0.72	0.33
Multiracial	-0.18	-.88, .52	0.36	-0.50	-0.41	-1.21, .39	0.41	-1.01
Education								
No college	-	-	-	-	-	-	-	-
Some/completed college	-1.01*	-1.81, -.21	0.41	-2.47	-0.72	-1.90	0.61	-1.18
Income								
\$0-\$24,999	-	-	-	-	-	-	-	-
\$25,000-\$49,999	-1.22	-2.52, .08	0.66	-1.84	-1.95	-3.97, .07	1.03	-1.90
\$50,000-\$74,999	-1.31	-3.16, .55	0.94	-1.38	-1.78	-4.53, .98	1.41	-1.27
\$75,000+	-0.90	-2.30, .51	0.72	-1.25	-1.74	-3.88, .40	1.09	-1.59
Prior exposure to collective trauma	-0.24	-1.12, .65	-0.52	0.62	0.30	-1.14, 1.74	0.73	0.41
Direct BMB exposure	-0.57	-1.45, .30	0.44	-1.29	-0.87	-2.17, .43	0.66	-1.31

* $p < .05$, ** $p < .01$, *** $p < .001$; BMB=Boston Marathon bombing; Reference groups were Male, White, under \$24,000, and no college. Age (continuous) was added to explore the main effects prior to interaction analyses.

Figure 4.1. Interaction Analysis for Age Differences in Traditional Media Use Predicting Myth Endorsement.

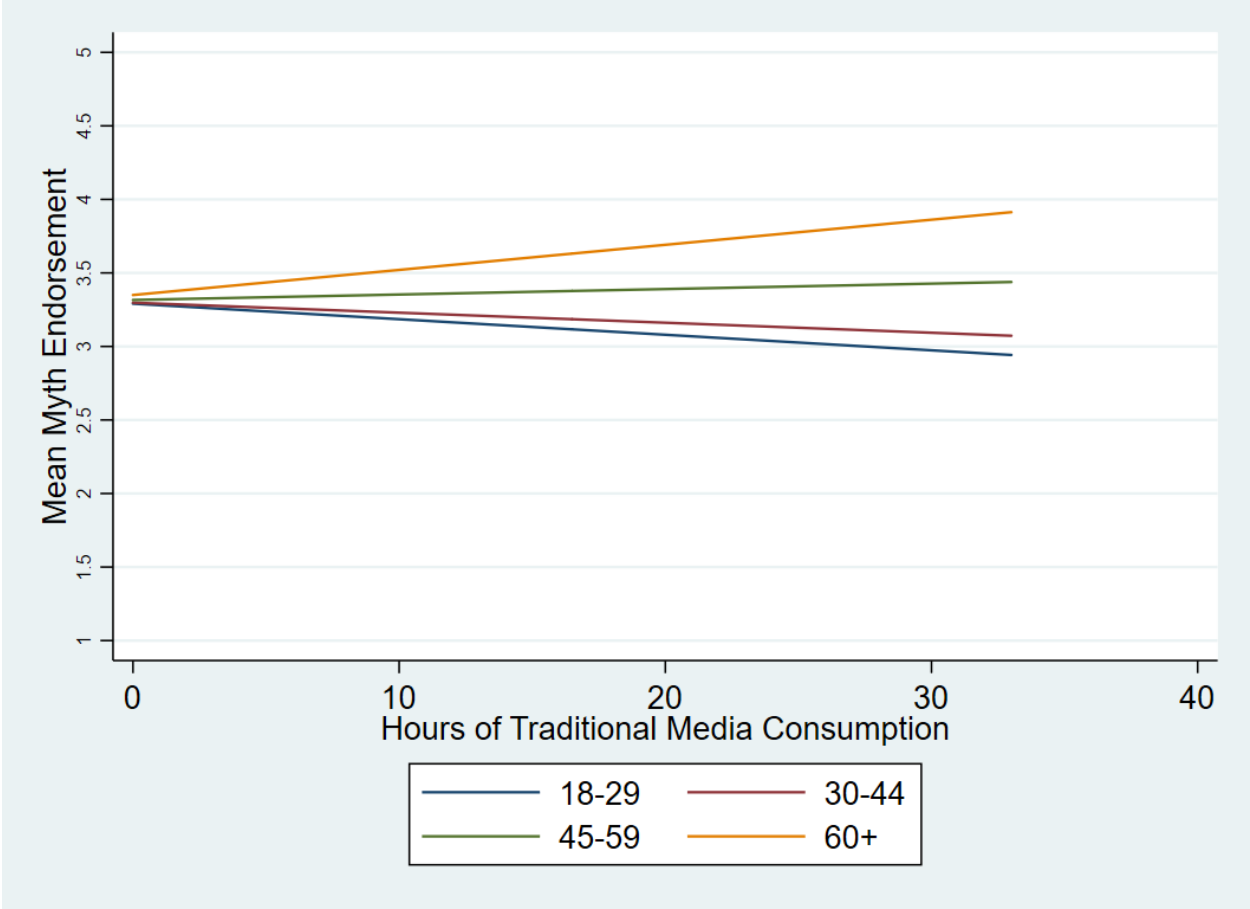
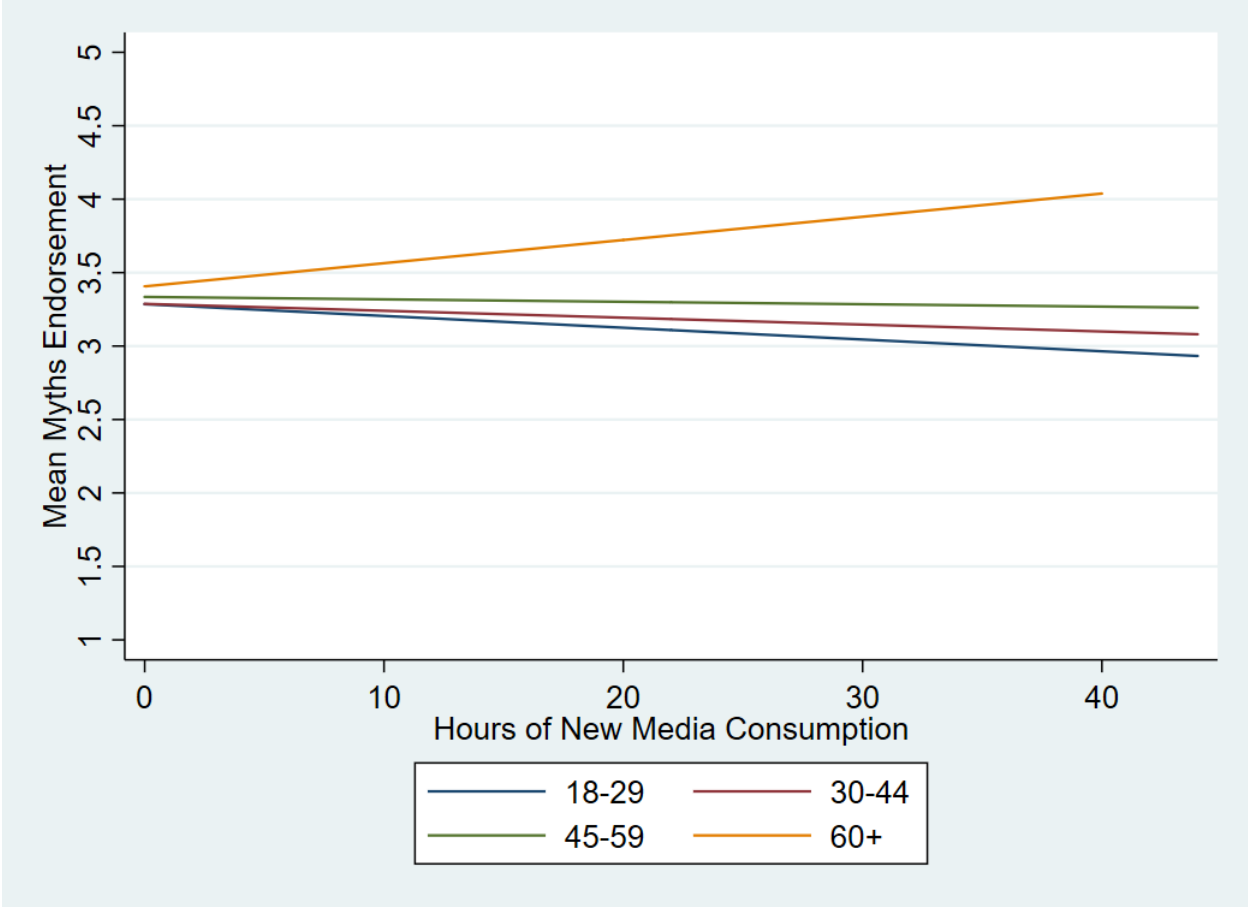


Figure 4.2. Interaction Analysis for Age Differences in New Media Use Predicting Myth Endorsement.



CHAPTER 5- EPILOGUE

The current study sought to examine the many possible factors associated with endorsement of myths of coping. Chapter 2 investigated the prevalence of myths and the profile of individuals who frequently endorsed myths. Chapter 3 explored the relationship between lifetime trauma history, myth endorsement, and acute stress symptoms in response to the Pulse nightclub shooting in Orlando, Florida. Finally Chapter 4 considered the relationship between media exposure following a collective trauma and myth endorsement, with special consideration for age effects. Overall conclusions of this body of work include that coping myths are prevalent in the United States population, greater levels of endorsement are associated with higher levels of lifetime trauma, are being perpetuated by media sources, and are associated with greater acute stress in response to future collective traumatic events.

Chapter 2 found that older participants consistently endorsed coping myths more often than younger participants. Care needs to be taken with this finding since it is possible that younger participants are merely more likely to endorse less certain positions than older participants, as hinted by Hood and Deopere (2002). Myth endorsement was higher for Hispanic participants than for participants of other race or ethnicities, and women also endorsed coping myths more often than men.

Chapter 3 found that greater endorsement of myths was associated with greater reports of respondents having previously experienced violent events, relationship stressors (overall, in childhood, and in adulthood), total lifetime traumas, and death of loved ones. These results provide some insight into what individuals might be told or exposed to after a major stressor. It is possible that after experiencing a major trauma, such as a violent event, or having had experienced a larger number of traumatic events, individuals are frequently told to (and expected

to) display distress and sadness early in the coping process. The finding that having experienced deaths of loved ones was associated with myth endorsement is not wholly surprising, as the Kubler-Ross (1969) model is one of the most frequently cited models (Konigsberg, 2011). Finally, these findings suggest that myths are still being propagated by lay and professional individuals in today's society.

Chapter 3 also found that greater endorsement of myths was associated with greater reports of acute stress following a future collective event. The unexpected findings of trauma history being associated with greater, rather than fewer, myths endorsed prompted supplemental mediational analyses exploring whether myths mediated the relationship between trauma history and greater acute stress. We found that the association between greater levels of relationship stress (e.g., parents' divorce), violent events, and total lifetime traumas, and higher acute stress levels was mediated by greater endorsement of myths. This line of research sheds light into the possible pathways between greater trauma history and acute stress. Previous literature has explored multiple avenues to link these two phenomena, including self-medication (e.g., Garland, Pettus-Davis, & Howard, 2013) or emotion regulation deficits (e.g., Gaher, Hofman, & Simons, 2013). However, to date no study has posited the idea that one of the mechanisms through which greater trauma history could be associated with greater distress is the pressure felt by individual from societal expectations regarding the coping process.

Lastly, Chapter 4 found that the relationship between myth endorsement and media exposure varied by age. For younger participants, greater exposure to both traditional and new media was associated with lower endorsement of myths. Conversely, for older participants, greater exposure to traditional was associated with greater endorsement of myths, although this

only approximated significance. No significant patterns emerged when examining whether myth endorsement was associated with future use of traditional or new media.

These studies have found that myths are not only prevalent, but that individuals who have experienced more traumas in their lifetime are more likely to endorse myths. It is conceivable that when individuals experience a traumatic event, especially a collective stressor, they may seek out media (as found by Jones et al., 2016), potentially as a method of reinforcing their pre-conceived notions about how they should be coping with that stressor. Reinforcement Theory (Atkin, 1985) posits that individuals will generally consume media that does not challenge their existing beliefs. It is interesting that for younger participants, greater exposure to media had the beneficial implication of being associated with lower myth endorsement. We also found that greater exposure to media for older adults may be related to greater endorsement of myths, which may explain why greater levels of lifetime trauma was associated with greater myths endorsement. If individuals who experience greater lifetime traumas also endorse greater myths of coping, it may be an indication that we must examine how these individuals are treated by professionals and others in their social support circle.

This body of work has implications for clinicians who treat patients following significant negative life events. Understanding one's own bias is an integral part of providing care (Chapman, Kaatz, & Carnes, 2013); therefore, clinicians should be aware that they may have been trained to provide erroneous or overstated information to their patients. This may be especially true for clinicians who specialize in treating patients who were exposed to a particular type of event (e.g., sexual assault), as previous research has argued that health professionals might propagate different kinds of myth information based on the event experienced (e.g., Cohen-Louck & Ben-David, 2016). When approaching care of patients, clinicians must be aware

of the inherent variability in coping responses, and that adding pressure for these patients to cope in certain ways can be distressing and deleterious.

The current study suffered from several limitations. First, the myths of coping scale was unvalidated and likely contained items that did not ideally capture all the possible myths. Ideally, if the current study were to be repeated, this scale should be validated ahead of time using a large, demographically diverse sample. Similar to how the trauma history scale asks each participant who responds that an event has happened to them whether it happened before or after 18 years of age, it would be beneficial if the myths of coping scale asked participants whether they endorsed an item about themselves specifically or for the general public. Second, we did not have information concerning how individuals actually coped with the traumas reported. Ideally, we would ask each participant how they coped with the events they report having had occurred, using a validated coping scale, such as the Brief-COPE (Carver, 1997). This would then be used to correlate coping myths endorsement and coping behaviors. Third, we did not have information about coping myths prior to the BMB. If possible, future research should attempt to determine whether endorsement of myths of coping actually changes in frequency or strength after repeated traumatic experiences. It is important to remember that myths of coping were measured two years after the Boston Marathon bombing and one year prior to the Orlando nightclub shooting. Although myth endorsement is likely relatively stable, evolving from a lifetime of experience with negative events, we do not have any data to support this assumption.

Fourth, we did not have information about the content of the media to which our participants were exposed. In order to gather this information, participants should be asked not only what type of media they consumed (e.g., television or social media), but also what channels or sites were visited. Another way of acquiring this information could be to ask follow-up

questions, asking participants to declare what the media was used for, such as information gathering, entertainment, or connecting with others.

This was the first study to date to deeply delve into the implications and correlates of myths of coping, and there is still much research needed to continue exploring them. Most importantly, it is imperative for future research to determine whether coping myth endorsement correlates with or predicts coping behaviors of individuals after a major stressor. For example, it will be interesting to see if someone who endorses myths also talks about their stressor and subsequent distress more often than someone who does not endorse myths. If behaviors do not correlate with myth endorsement, it will be crucial to understand what the relationship between coping myths and behaviors actually is. Then the models built in this set of studies can be replicated with the addition of coping behaviors. For example, scholars should investigate whether the relationship between trauma history, myth endorsement, and acute stress remains the same or changes when adding coping behaviors in the model. It is possible that myths endorsement will not correlate with coping behaviors very strongly, as people generally do not predict their behavior particularly well (Armitage & Conner, 1999), but that disconnect might be exactly why endorsement of myths of coping are seen to be associated with greater distress. Therefore, future studies of myths of coping will need to be conducted in conjunction with research on coping behaviors.

Another very important next step in this line of research is to determine if there are differences in coping beliefs as they pertain to coping in general or how individuals think they themselves should cope. The coping myths studied in the present research only apply to overall beliefs, so it is possible that individuals have differing belief structures for their own coping behaviors versus general coping that take other factors into account, such as cultural expectations

or lessons learned from past traumas. Future studies should include both types of beliefs (individual and general), with the possibility of a myths of coping scale being developed that includes both types of subscales. It will be interesting to see if the interaction between general and personal beliefs regarding coping create a synergistic relationship, ultimately impacting the level of distress experienced after a stressor.

Another potential future line of research focuses on whether the basic tenet of the potential dangers of endorsing coping myths is actually true. Coping myths are not intrinsically false beliefs, they are merely not applicable to all individuals. Bonanno (2004) and Konigsberg (2011) argue that the distress associated with myth endorsement may come from the disconnect between how individuals think they *should* cope and how they *actually* cope. Therefore, future researchers should measure not only endorsement of myths of coping, but also participants' coping behavior after a stressor. This will enable us to ascertain whether greater distress occurs when coping behaviors do not match the "typical" coping pattern described by the myths of coping, especially in participants with high myth endorsement.

Lastly, future investigations should delve more deeply into the sources of myth information as potential intervention targets. The current study only looked at news sources and did not examine the content of those news programs, but scholars argue that coping myths are deeply embedded within all manner of media content, including TV dramas and comedies, self-help books, talk shows, and academic sources (Holman et al., 2010; Konigsberg, 2011). Future work should examine not only the different media content that individuals are consuming after a stressor, but also how often myth information is presented in different types of media.

Media content may not be the only place individuals are being exposed to this type of information. Friends, family members, and health professionals may also be disseminating these

beliefs in society, especially after major collective traumas occur. Subsequent studies should consider media sources as well as network members who offer coping behavior information and what effect these sources may have. It is possible that coping information supplied by a support network member carries more weight, and potentially more guilt and distress if not followed, than information gathered via media sources. Similarly, previous work has found that myth information is present in some nursing texts (e.g., Holman et al., 2010); however, a wide-reaching systematic review of medical and psychological texts has not yet been conducted to examine whether coping myths are prevalent in instructional materials. It will also be significant to determine how many clinicians and researchers endorse different coping myths. Surveys sent to different professional groups within the American Psychological Association and American Medical Association can help shed light into how pervasive coping myths may be to those treating traumatized populations.

Since every individual is reasonably expected to experience at least one major traumatic event, it is imperative for correct information to reach these persons, so that they may cope in the most helpful and beneficial manner possible. Finally, it is of vital importance to remember that coping myths are not necessarily “incorrect” methods of coping. That is, experiencing distress shortly after an event is not inherently wrong or harmful, rather, the belief that one *must* feel distress after a stressor is not accurate. Understanding how to best reach these individuals with accurate coping information and provide them with evidence-based options will improve outcomes following any trauma for years to come, so that all may cope with stressors in ways that best suit their needs rather than merely following expectations.

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