

Effects of Job Control and Situational Severity on the Timing of Help-Seeking

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Studies suggest that the psychopathological effects of involvement in critical incidents among emergency service workers failing to seek help in a timely manner may be detrimental both for the individual and for the organization. However, little is known as to the factors governing *when* individuals seek such help. Consequently, drawing from the help-seeking and coping literatures, we generate a theory explicating how job characteristics (namely, job control) and situational factors (namely, the severity of incident involvement) combine to influence help-seeking delay or, in other words, the amount of time that passes before employees seek help for incident-related distress. Using data collected from firefighters who were involved at varying degrees of intensity in the events in and around the World Trade Center on September 11, 2001, we demonstrate that increasing levels of situational severity influence the relationship between job-control and help-seeking delay with job control having a curvilinear association with help-seeking delay under conditions of high situational severity.

Keywords: help-seeking, trauma, job control, situational severity, distress

Emergency service workers' involvement in critical incidents—emergency and disaster situations both natural and man-made, that are dangerous either to one's self or significant others, and accordingly have the potential to overwhelm the individual's ability to cope (Alexander & Klein, 2001; Monnier, Cameron, Hobfoll, & Gribble, 2002)—is relatively common. For example, Corneil, Beaton, Murphy, Johnson, and Pike (1999) report that over 85% of the US and Canadian firefighters and paramedics surveyed experienced at least one critical incident exposure in the prior 12-month period. Moreover, while the link between such involvement and the potential development of psychopathology has been well established (Halpern, Maunder, Schwartz, & Gurevich, 2011; Vermetten & Bremner, 2002; Jacobsen, Southwick, & Kosten, 2001),

studies consistently suggest that the psychopathological effects (e.g., posttraumatic distress) of such involvement may be amplified among emergency service workers such as firefighters (McFarlane, 1998; Del Ben, Scotti, Chen, & Fortson, 2006). Research also suggests that while for many, symptoms self-resolve within a few weeks (Bisson, Brayne, Ochberg, & Everly, 2007), for others, if untreated, such distress can persist and worsen over time (Beaton & Murphy, 1995; Litz, Gray, Bryant, & Adler, 2002).

Despite mixed evidence regarding the efficacy of early intervention based on single-episode psychological/critical incident debriefing (Litz et al., 2002; Gist & Devilly, 2010), studies consistently demonstrate the clinical benefits of ensuring that those experiencing traumatic distress symptoms receive professional assistance (i.e., clinical assessment and, if necessary, multisession therapy) in as timely a manner as possible (for reviews see Gist & Devilly, 2010; Bisson et al., 2007). Accordingly, the authors of the 2005 U.K. National Institute for Health and Clinical Excellence guidelines recommend that trauma-focused cognitive behavior therapy be made available to all individuals experiencing acute distress between 1 and 3 months after a traumatic event, and most agencies employing emergency service workers now routinely offer mental health services to their employees-in-need (Lewis, 1994). However, despite the increasing prevalence of such services, studies suggest that help is usually sought only by those experiencing more serious symptoms over an extended period of time (Elhai, North, & Freuh, 2005).

Delays in help-seeking for those experiencing acute distress can have severe costs to both the individual and their employer. For the individual, acute distress, if untreated, can spawn secondary sequelae in the form of negative emotional states such as anxiety and depression, and related problems such as alcohol misuse, dimin-

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ished functional ability, and marital strain (Bacharach & Bamberger, 2007; Bacharach, Bamberger, & Doveh, 2008), and if persisting for a month or more, are often predictive of posttraumatic stress disorder (PTSD; Bisson et al., 2007; Gist & Devilly, 2010). For employers, such adverse consequences of delayed treatment for acute distress may manifest themselves in various forms of employee withdrawal (e.g., absenteeism, tardiness, and presenteeism) and misbehavior including alcohol misuse (Byron & Peterson, 2002; Vardi & Weitz, 2004; Bamberger, 2005). Studies suggest that particularly among those demonstrating acute distress symptoms, cognitive-behavioral psychotherapeutic (CBT) interventions in the immediate posttrauma period (i.e., within a month of the event) may minimize the likelihood that such traumatic distress will evolve into a more chronic condition (Ehlers & Clark, 2003; Bryant, Moulds, & Nixon, 2003; Bisson et al., 2007; Roberts, Kitchiner, Kenardy, & Bisson, 2009). Indeed, based on their review of the research, Gist and Devilly (2010) conclude that early intervention based on immediate psychological first aid, early (i.e., 1–2 months postevent) trauma screening and, when indicated by screening results—such as multisession CBT, “has been shown to prevent progression to posttraumatic stress disorder” (p. 169).

Moreover, research suggests that in addition to generating acute distress among some of those involved or exposed to a critical incident, such incidents may also generate more delayed or transient distress, with distress symptoms emerging only months if not years later (Hobfoll et al., 2007). And like acute distress, such transient stress reactions, if left untreated, may over time spawn secondary sequelae such as emotional and/or substance-related comorbidities (Hobfoll et al., 2007; Boscarino, Adams, & Galea, 2006; Solomon, Horesh, & Ein-Dor, 2009). For example, Boscarino et al.’s (2006) study suggests that exposure to psychological trauma may be associated with increases in problem drinking long after exposure. Accordingly, it is reasonable to assume that delays in help-seeking for those experiencing trauma-related distress even months or years subsequent to actual exposure can still have severe costs to both the individual and their employer.

Beaton and Murphy (1995) argue that delayed services utilization likely stems from the fact that early symptoms are typically not readily detectable to others (e.g., family, friends, coworkers) until they are quite severe, making early intervention largely contingent on timely *self*-referral or individual help-seeking—an interpersonal activity involving the solicitation of assistance to manage a particular difficulty or challenge faced by the individual (Nadler, 1991; Lee, 1997). Still, while the literature on help-seeking has identified numerous factors predictive of *whether* an individual ultimately seeks help (Nadler, 1991; Nadler, Ellis, & Bar, 2003; Lee, 1997), little is known as to the factors governing what we refer to as *help-seeking delay* or in other words, the amount of time that passes before individuals actually seek such help (Bamberger, 2009).

Drawing from the literatures on help-seeking and coping, we generate a theory explicating how job characteristics (namely, job control) and situational factors (namely, the severity of the event itself) combine to influence help-seeking delay or, in other words, the amount of time that passes before such workers—commonly referred to as first responders—seek professional help for incident-related distress. More specifically, we posit that the relationship between job control and help-seeking delay is contingent on the level of situational severity. We test these ideas using

incident-related data collected from firefighters who were involved at varying degrees of intensity in the events in and around the World Trade Center on September 11, 2001.

The Antecedents of Help-Seeking Delay

Research on coping efficacy (Terry & Hynes, 1998; Endler, Macrodimitris, & Kocovski, 2000; Averro, Corace, Endler, & Calvo, 2003) provides important insights into the factors likely to affect the timing of help-seeking. More specifically, this research suggests that while individual differences in coping styles may provide a baseline coping preference, coping choices tend to be dynamic, with situational severity and control (the degree to which individuals feel able to control those factors threatening their security) serving to influence perceptions regarding the relative utility of one coping alternative as opposed to another. Accordingly, we propose that above and beyond individual differences in coping style, perceived job control (i.e., the degree to which employees are able to influence task or activity-related decisions on the job, Karasek, 1979, p. 290), and the situational severity (i.e., the intensity of the critical incident itself) are likely to play key roles in determining the timing of help-seeking among first responders involved in a work-related critical incident.

Our theory is grounded on the assumption that, as noted by Nadler (1991), individuals considering turning to another for assistance face a fundamental dilemma. More specifically, Nadler (1991) proposes that the decision to seek help is governed by the tension between the perceived benefits (e.g., ability to solve a problem and/or learn new skills) and costs (e.g., time, energy, economic and psychological—particularly the threat to self-esteem and self-efficacy) of such help-seeking (Nadler, 1991, 1998; Vogel & Wei, 2005; Vogel, Wester, Larson, & Wade, 2006). As we next discuss, both job control perceptions and the situational severity may have implicit implications for first responders’ cognitive calculations regarding the expected net utility (i.e., perceived benefits minus perceived costs) associated with seeking help in a timely manner relative to delaying assistance and coping with incident-related distress on one’s own. To the extent that the level of perceived job control and situational severity result in an overweighing of the relative utility of help-seeking, help-seeking may be expected to occur sooner rather than later. To the extent that they result in the underweighing of the relative utility of help-seeking, help-seeking may be expected to occur later rather than sooner. However, given that, as we describe below, perceived job control (PJC) and situational severity likely have opposing direct effects on the relative expected utility of help-seeking, the impact of the latter (situational severity) on the relationship perceived job control and help-seeking delay is likely to be complex.

Main Effects of Perceived Job Control and Situational Severity on Help-Seeking Delay

Because of the psychological costs of seeking the assistance of others noted above, first responders forced to cope with distress symptoms may at least initially attempt to do so on their own using one of three alternative self-coping styles (Averro et al., 2003). The first style, *task*-focused self-coping involves the attempt to *independently* restore or reconstruct reliance, invulnerability, and predictability schemas by modifying or eliminating those aspects of

their job viewed as most threatening to such schemas (Avero et al., 2003; LeBlanc, Regehr, Jelley, & Barath, 2008). The second style, *emotion*-focused self-coping, revolves around behavioral and cognitive responses aimed at managing emotional reactions or maintaining emotional equilibrium (Avero et al., 2003; LeBlanc et al., 2008). The third style, avoidance-focused coping, involves cognitive efforts "aimed at avoiding the stressful situation" (Endler & Parker, 1999, p. 35).

Research on the efficacy of these alternative self-coping styles has largely been driven by Folkman's (1984) remark that, "a time-honored principle of effective coping is to know when to appraise a situation as uncontrollable and hence abandon efforts directed at altering that situation and turn to emotion-focused processes in order to tolerate or accept the situation" (p. 849). We extend this principle in two ways. First, we argue that perceptions of job control, by influencing individuals' appraisals of the relative utility of task-focused self-coping, can delay the decision to abandon efforts aimed at unilaterally altering the situation in favor of some other mode of coping such as seeking the assistance of others. That is, we propose that help-seeking may be delayed as a function of the degree to which individuals view their job as providing them with the latitude needed to unilaterally intervene in order to prevent the reoccurrence of the situation previously experienced or at least its reoccurrence at a similar level of severity. Second, based on the assumption that more intense situational severity may generate distress symptoms that are not easily or effectively managed even on the basis of emotion-focused (no less avoidance-focused) self-coping, we argue that situational severity may operate to accelerate the decision to seek the assistance of others.

PJC and help-seeking delay. Perceived job control reflects the belief or cognition that one is able to influence or change a salient job-related situation (Ganster, 1989; Ganster & Fusilier, 1989). Previous treatments of job control have incorporated a wide range of domains and factors in their conceptualization and operationalization of job control including such factors as skill discretion and variety (Karasek, 1979; Sauter, 1989), and self-determination and autonomy (Brockner et al., 2004; Elsass & Veiga, 1997). Over the years, scholars (e.g., Sauter & Hurrell, 1989; Fox, Dwyer, & Ganster, 1993) have questioned what can be learned theoretically when job control is so broadly conceived, and how findings may be applied toward the development of domain-specific interventions when operationalized in such a global manner (Hurrell, Nelson, & Simmons, 1998). Accordingly, following Dwyer and Ganster (1991), in the current study we focus on employee perceptions of their degree of influence over critical workplace decisions, and even more specifically, those particular decision domains most likely to affect respondents' personal risk exposure on a day-to-day basis (i.e., decisions relating to work rules, job safety precautions, and equipment procurement).

Perceived control over such decisions (herein referred to as PJC) is expected to influence the point at which first responders seek assistance for emotional problems associated with critical incident involvement because it affects the perceived utility of task-focused self-coping. While, by definition, self-coping allows the individual to avoid many of the psychological costs associated with seeking the assistance of others, the relative utility of such coping depends on the degree to which individuals perceive themselves as having the autonomy and decision latitude in their work necessary in order to make desired job or task-related changes (Endler et al., 2000;

Endler, Speer, Johnson, & Flett, 2000). To the extent that individuals perceive a higher degree of control over the tasks performed in their job, they are likely to associate a higher probability of securing the benefits associated with such a task-focused mode of self-coping. And to the extent that these benefits may be secured at a lower psychological cost, the expected utility associated with task-focused self-coping may be greater than that associated with help-seeking. This may, in turn, encourage individuals to at least attempt to make decisions that change task assignments or job parameters (e.g., the steps they follow when executing a particular mission or the equipment they use when doing so) as a means by which to prevent the reoccurrence of a threatening situation *before* adopting an alternative mode of coping, such as seeking the assistance of others.

While we are unaware of research examining the impact of any type of PJC on help-seeking delay, studies whose findings are consistent with the logic noted above have been reported in both the coping and empowerment literatures. For example, coping scholars report that task-focused coping increases as a function of situational control (Compas, Banez, Malcarne, & Worsham, 1991), and Endler et al., (2000) found task-focused coping to be more widely used under conditions of higher perceived control. Additionally, empowerment researchers have found that individuals perceiving a higher degree of job control tend to be slower to recognize the potential benefits to be derived from seeking the assistance of others (Spreitzer, 1995; Spreitzer, DeJanasz, & Quinn, 1999).

Taken together, the logic and findings noted above suggest that first responders that view themselves as sufficiently empowered in their job to make decisions regarding job parameters viewed as affecting personal vulnerability may, at least initially, attribute higher expected utility to self-help modes of coping than to any type of assistance that might be solicited from others and thus delay seeking external help. Accordingly, we posit:

Hypothesis 1: PJC is positively associated with delay in first-responder help-seeking.

Situational severity and help-seeking delay. Situational severity has been consistently identified as a key factor influencing the prevalence or likelihood of help-seeking (Bamberger, 2009), with studies generally finding the likelihood of help-seeking for emotional-laden issues to increase as a function of problem severity (e.g., Hinson & Swanson, 1993; Fisher, Winer, & Abromowitz, 1983; Scott & Roberto, 1985). Such findings make intuitive sense in that, as noted by Cauce et al. (2002), "help seeking cannot begin in earnest until a problem or mental health need is recognized" (p. 46), something more likely to occur as a function of situational or problem severity. Such findings also suggest that situational severity is likely to be inversely related to help-seeking delay in that the instrumental benefits of help-seeking relative to alternative modes of coping are likely to increase as a function of situational severity, while the psychological costs associated with help-seeking relative to alternative modes of coping are likely to decline as a function of situational severity.

In terms of the *benefits* of help-seeking relative to alternative forms of self-focused coping, more situational severity has been shown to be associated with an increased risk and severity of posttraumatic distress (Del Ben et al., 2006; Brewin, Andrews, & Valentine, 2000), making normal functioning without help increas-

ingly difficult over time, and thus increasing the likely net benefit of seeking help sooner rather than later. For those routinely exposed to critical incidents such as first responders, to the degree that low or moderate situational severity results in any such distress symptoms, these symptoms are likely to be effectively managed on the basis of task- or emotion-focused self-coping (Yehuda, McFarlane, & Shalev, 1998). However, when situational severity is more intense, distress symptoms are likely to be more prevalent, more severe, and more likely to spawn the secondary distress symptoms that make normal functioning increasingly difficult and for which emotion-focused self-coping is typically ineffective (Lazarus, 1993; Endler & Parker, 1990). Indeed, several studies have found that under situations deemed uncontrollable, neither task- nor emotion-focused self-coping are associated with lower distress symptoms (Vitaliano, DeWolfe, Maiuro, Russo, & Katon, 1990; Conway & Terry, 1992), and that avoidance-focused coping is generally maladaptive (generating higher distress) particularly in the long term (Avero et al., 2003). Accordingly, for those whose symptoms, rather than receding over time, only become exacerbated, the relative benefits of quick relief through help-seeking are therefore likely to be perceived as increasingly attractive.

The relative utility of help-seeking over self-coping is also likely to be perceived as greater in the context of situational severity in that the psychological costs of seeking the assistance of others tends to decline as a function of situational severity. This is because in more severe situations, victims are more likely to perceive consensus around the legitimacy of help-seeking (Addis & Mahalik, 2003), and thus view such behavior as posing less of a threat to their self-image and sense of self-efficacy (Nadler, 1991; Lee, 2002). This ability to externalize the need to seek help may play an even more significant role in reducing the emotional costs of help-seeking in occupational cultures characterized by macho, "John Wayne" norms. This is because while help-seeking may generally be viewed as a sign of personal weakness in such cultures, "when the bone has broken the skin," help-seeking is likely to be deemed to be not only legitimate, but "the right thing to do" (Beaton & Murphy, 1995). Accordingly, with the instrumental benefits of help-seeking in such situations likely to be greater, and the psychological costs of help-seeking likely diminished, we posit that:

Hypothesis 2: Situational severity is inversely associated with delay in first-respondent help-seeking.

Perceived Job Control—Situational Severity Interaction and Help-Seeking Delay

Logically, the obverse main effects of PJC and the intensity of incident involvement on help-seeking delay proposed above suggest that the delaying effects of perceived job control on help-seeking are likely to be attenuated as a function of situational severity. While we are unaware of any direct tests of the impact of situational severity on the relationship between PJC and help-seeking delay, empirical tests of the so-called "goodness of fit" hypothesis (Conway & Terry, 1992)—that task-focused self-coping will be more effective in objectively less intense and hence more controllable situations, and decline in efficacy in more intense/less controllable situations—are largely consistent with the logic noted above. These studies have found that emotional distress is elevated when task-focused self-coping is used in situations

whose very nature and/or severity make them less subject to the individual's control (Compas et al., 1991), and when attempts are made to actively manage or solve objectively unresolvable or high complexity problems (Terry & Hynes, 1998). Such findings suggest that, regardless of the level of PJC, task-focused self-coping is less likely to generate symptom improvement when these symptoms are the result of more intense incident involvement, and that as a result, higher levels of PJC are less likely to delay first responders' help-seeking in response to more intense incident involvement. Put in other words, we propose:

Hypothesis 3: The positive association between perceived job control and help-seeking delay will be attenuated as a function of the situational severity.

Up to this point, we have largely assumed a linear relationship between PJC and help-seeking delay. However, while under conditions of more extreme situational severity the relative expected utility of help-seeking may be greater than either of the two modes of self-coping noted above, first responders perceiving themselves as having extremely low levels of job control may still deem the instrumental benefits of help-seeking insufficient to justify the psychological costs of seeking help. This might occur if for example, PJC is so low that the first responder experiences a sense of helplessness. Unable to change their job situation and experiencing distress so severe that there is little hope of emotional adjustment, first responders may deem the assistance of others as unlikely to yield any instrumental benefit (Mikulincer, 1994). Furthermore, to the extent that individuals feel that they have little choice *but* to continue to engage in ineffective self-coping, consistent with conservation of resources theory (Hobfoll, 1989), they may wear down (and even deplete) the emotional resources necessary to recognize the potential costs of self- or avoidance-coping and the potential benefits of turning to others for assistance. This suggests that while the dysfunctional nature of avoidance coping (Avero et al., 2003; LeBlanc et al., 2008) should lead first responders to quickly recognize the relative potential benefits of seeking help, because such coping may generate its own dysfunctional coping spirals (Hobfoll, 1989) and/or denial mechanisms (Amir et al., 1997), these benefits may remain unrecognized for quite some time, resulting in delayed help-seeking. Accordingly, we propose that under conditions of relatively high situational severity, the delay in help-seeking is likely to be greatest when PJC is low, declining as PJC approaches moderate levels, and thereafter—consistent with our first hypothesis—increasing as a function of PJC. Reflecting this pattern, we posit that:

Hypothesis 4: At higher levels of situational severity, the relationship between PJC and help-seeking delay is curvilinear such that help-seeking delay is greatest at very high and very low levels of perceived job control.

Method

Sample

To test the hypotheses presented above, we analyzed a subset of data collected from a sample of New York City firefighters. These data were collected in early 2003 via a self-report questionnaire

distributed to all members of a stratified random sample of 144 (out of a total of 346) engine and ladder companies, regardless of their level of involvement in the events surrounding the September 11, 2001 attack on the World Trade Center. Specifically, using the Fire Department of New York's (FDNY's) three category system differentiating more active from less active firehouses, we randomly sampled an equal number of the firehouses in each category (48 each from "highly active," "moderately active," and "relatively inactive") for inclusion in the study. Surveys were distributed by union shop steward and returned by respondents directly to us by prepaid mail.

Of the 2,502 questionnaires distributed, 1,653 were returned (a response rate of 66%). Given the small number of women firefighters in our sample ($n = 10$), we included only individuals responding to the gender question (10 failed to do so) and indicating that they were male. Furthermore, as we were interested in variables relating to seeking help as a result of participation in the events surrounding 9/11, we included only those who were involved in any way in the event ($n = 898$). A substantial portion of those involved reported experiencing a wide range of distress symptoms which they attributed to their role in 9/11 rescue and recovery. For example, 97% reported that any reminder of 9/11 brought back feelings about it, while 90% reported that pictures about 9/11 popped into their mind, and 64% reported feeling watchful/on guard. As perceived job control may vary as a result of changing companies, we excluded all those fire fighters reporting that they switched companies since 9/11 ($n = 226$), as well as those failing to respond to items regarding post-9/11 help-seeking ($n = 20$), leaving us with a final sample of 652 first responders. Consistent randomized sampling approach noted above, comparisons of our sample with the entire NYFD firefighter population across a wide variety of demographic characteristics indicated no significant differences.

Measures

Dependent variable. In order to assess *Help-Seeking Delay*, respondents were asked whether they used any counseling services since September 11, 2001 for issues relating to the events of 9/11. Those responding affirmatively were asked to indicate approximately when they first sought such help using a life histories calendar (LHC) approach (Freedman et al., 1988; Axinn, Pearce, & Ghimire, 1999). While the recall of the precise timing of various life events may present a cognitively challenging task for study participants (Eisenhower, Mathiowetz, & Morganstein, 1991; Tourangeau, 1984), the LHC approach makes this task easier by providing respondents with key event cues designed to help them recall the timing of the events of interest relative to or synchronous with the occurrence of highly salient events in their lives (Axinn et al., 1999, p. 244). Retrospective studies of health services utilization consistently note that LHC-type methods enhance the consistency of participants recollection of the timing of help solicitation or service utilization behavior with collateral reports (Lam et al., 2008; Gladsjo, Tucker, Hawkins, & Vuchinich, 1992).

In selecting the event-related time units within which participants are asked to slot particular occurrences (in this case, initial help-solicitation), it is important to choose units of short enough duration to assess temporal dynamics with adequate precision, but no shorter than respondents' ability to make fine time distinctions

(Freedman, Thornton, Camburn, Alwin, & Young-DeMarco, 1988, p. 44). In order to identify key events able to facilitate more accurate recall among study participants, we conducted three focus group interviews with firefighters who were at the scene on 9/11, asking them what key, job-related events occurred post-9/11. We tied our response options to those five events or sets of events most consistently mentioned by the focus group participants and associated with intervals of 6 months or less, namely: (a) Between 9/11 and the transition to search and on-site recovery (i.e., approximately the first 30 days following September 11, 2001); (b) up to the end of active fire-fighting/victim recovery (i.e., from approximately Mid-October 2001 to end of December, 2001); (c) up to recovery process closing ceremonies (i.e., from January 2002 to June 2002); (d) up to the first Anniversary Memorial; end of clean-up operations (i.e., from June 2002 to end of October 2002); (e) postclean up (i.e., from early November 2002 until the time of the survey in early 2003).

Independent variables. *Situational Severity* was assessed with Bacharach and Bamberger's (2007) modified version of Monnier, Cameron, Hobfoll, and Gribble's (2002) inventory. The Monnier et al. (2002) measure has been demonstrated to offer a high degree of convergent validity with respect to the assessment of first-responder exposure to *severe situations* in the weeks prior to assessment (Monnier et al., 2002, p. 20; Ward, Lombard, & Gwebushe, 2006). Bacharach and Bamberger (2007) modified this measure slightly to reflect the varying involvement of firefighters in a *singular* critical incident, and demonstrated the convergent validity of the event-specific version. Using this event-specific version, participants are asked to focus on a particular event and respond with it as their frame of reference. Like the original version of the scale, this modified measure assesses over a dozen different modes of situational severity, four of which have to do with varying degrees of "trauma to oneself." As with the Monnier et al. (2002) version, in the modified version a total score for situational severity is generated by summing the item specific scores. However, while multiple forms of trauma to oneself can occur over *multiple* incidents, this is not the case with respect to a single incident. Rather, in a single incident, the assessment of situational severity must take into account that it is the most severe injury that is likely to be psychologically most salient for the victim. Furthermore, while self-trauma events are rarer than other trauma-related events listed in the inventory, as a subgroup, Monnier et al. (2002) found these types of events have more significant implications for individual well-being than other forms of incident events (e.g., dealing with dead bodies, managing multiple casualties). Taking these factors into account, in the Bacharach and Bamberger (2007) modified version, an affirmative answer to any of the four self-injury items is assigned a value between 2 ("minor injury but no treatment required") and 5 ("severe injury requiring medical attention and placement on light duty or leave for 3+ tours"). In contrast, consistent with the Monnier et al. (2002) version, each of the remaining 15 items is scored 0 or 1 ("affirmative"). Combining these two scores, the total measure yields scores ranging from 0 (very low intensity) to 20 (very high intensity).

We limited our examination of situational severity to the day itself because, given the nature of the event and the relative lack of survivors to be searched for or rescued, a largely invariant degree of situational severity characterized the days following the actual

event. Finally, we should note that although situational severity was assessed approximately 18 months after the event itself, for a number of reasons, we deem the likelihood of retrospective bias to be low. First, as Brewin et al. (2000) noted, the risk of bias in reports about involvement in a traumatic event is in fact likely to be lower when individuals evaluate their involvement sometime after the event. If surveyed too soon after the event, trauma victims are often unable to accurately appraise what happened, because they feel numb. Second, as Miller, Cardinal, and Glick (1997, p. 201) noted, the risk of retrospective bias is greatly diminished when, as in the current case, appraisal items ask about simple, objective facts and concrete events (i.e., the number of sick days taken owing to injury), the event of interest occurred in the recent (rather than distant) past, and respondent confidentiality is assured. Indeed, Brewin, Andrews, and Gotlib (1993) argue that "provided that individuals are questioned about the occurrence of specific events or facts that they were well placed to know about, the central features of their accounts are likely to be reasonably accurate" (p. 94). Similarly, investigating the validity of retrospective accounts of childhood traumatic experiences, Widom and Shepard (1996) conclude that while retrospective bias may result in some degree of event underreporting, "in many ways, these findings indicate accuracy in retrospective self-reports and good discriminant validity" (p. 418). Finally, based on their review of the literature regarding the validity of retrospective reports by adults of their own adverse experiences in childhood, Hardt and Rutter (2004) conclude that while the accuracy of retrospective reports of traumatic events in childhood is greater to the extent that such reports rely less heavily on judgment or interpretation (as in the current case), in general, "retrospective studies have a worthwhile place in research" (p. 260).

Perceived job control was assessed on the basis of an instrument developed by Bacharach, Bamberger, Conley, and Bauer (1990) which was then adapted for use with firefighters as described by Bacharach and Bamberger (2007). As noted by Kasl (1989), measures of subjective control are embedded in a matrix of potentially stable predispositions, making it difficult to determine the extent to which control perceptions reflect objective control as opposed to these dispositions. However, Spector and Fox (2003) note that based on evidence from both field and laboratory studies, subjective reports of job characteristics like control are "sensitive to objective features of the job", and that incumbents' subjective perceptions are "more accurate than alternative sources" (pp. 418–419). More importantly, they demonstrate that the convergent and discriminant validity of subjective assessments of job control may be significantly increased (and attitudinal or dispositional bias, reduced) by using items that are "more fact-based and focused" (rather than asking subjects to rate the overall amount of autonomy or control). Consistent with this approach, the Bacharach et al. (1990) measure is structured around six, highly focused decision domains likely to affect respondents' personal risk exposure on a day-to-day basis, and along which respondents may have more or less influence. These six types of decisions include those regarding work rules and procedures, job safety precautions, staffing and task assignments, and job resources (e.g., tools, equipment). Influence over many of these types of decisions (e.g., who works when and is assigned to particular tasks in the station or in the field; what equipment is procured; how particular types of operational challenges are met), is direct in nature and thus likely has an immediate

impact on personal risk and vulnerability. However influence over other decisions (e.g., work rules and safety protocols) may in some cases (e.g., when influence at the level of the station is unsuccessful) be less direct, exercised via input into union or departmental decision processes. In such cases, influence over such decisions may have more of a long-term impact on personal risk and vulnerability. Respondents were asked to indicate how much influence (1 = little or no input to 7 = a great deal of input) they had over each of these six decision domains. Cronbach's alpha was 0.83.

Control variables. In testing the hypotheses noted above, we controlled for a variety of respondent demographic attributes, including age, marital status, education level, gross pretax income, and seniority, which have been found to be related with help-seeking behaviors (Gourash, 1978; Unger & Powell, 1980; Lee, 1997). Additionally, with individual coping styles playing a potentially important role in shaping baseline tendencies to seek help (Avero et al., 2003), as noted earlier, we sought to assess the effects of PJC and intensity of event involvement above and beyond the effect of coping style. Accordingly, we controlled for the mitigating effects of task-, avoidance- and emotion-focused coping style on the basis of Joseph, William, and Yule's (1992) 30-item Coping Style Questionnaire. In addition, we controlled for prior counseling because, as noted by Vogel and Wei (2005) those with prior counseling experience are often less reluctant to seek help. Additionally, in order to reduce the risk of common method variance, we controlled for social desirability using the Balanced Inventory of Desirable Responding (*BIDR*) (Paulhus, 1991, 2002). Edwards (2008) notes that the primary advantage of directly measuring factors thought to induce common method variance, such as social desirability, is that "it allows for the avoidance of identification and estimation problems that occur when method factors do not have their own measures" (p. 477). To ensure that we captured the effects of varying levels of involvement in the actual 9/11 incident (and not of involvement in any critical incident subsequent to it), we controlled for the number of days respondents may have been engaged in post-9/11 search and rescue activities (continuing through the 19 days following 9/11). Additionally, using a measure developed by Weiss, Marmar, Metzler, and Ronfeldt (1995), we also controlled for the number of work-related incidents since 9/11 that the individual was involved in and in which: (a) s/he was injured enough to require medical attention, (b) a fellow first responder was injured enough to require medical attention, and (c) a fellow first responder died in the line of duty.

Data Analysis

Because firefighters were nested within companies, prior to testing our hypotheses, we first investigated the possible presence of a correlation between firefighters within companies. To this end the NLMIXED procedure (SAS, version 9.1) was used. This procedure fits nonlinear mixed models, that is, models in which both fixed and random effects are permitted to have a nonlinear relationship to the response variable. We included a random effect for company which, if significant, would imply the existence of correlation within companies. PROC NLMIXED enables one to specify a general likelihood function, and, as help-seeking delay was defined in terms of uneven intervals (start time to end of Month 1, end of Month 1 to end of Month 3, etc.), we programmed

one that corresponds to a Weibull distribution (Cox & Oakes, 1984). Because the resultant estimate of the variance between companies was very small and statistically insignificant, we opted to conduct an individual-level survival analysis. The survival analysis algorithm treats those responding negatively to the help-seeking question as having yet to seek help. We conducted this survival analysis using the SAS LIFEREG procedure, which performs such analyses by fitting parametric accelerated failure time models to dependent variables characterized by any combination of right, left or interval censoring (SAS, version 9.1)¹, and by once again specifying a Weibull distribution in order to take into account the uneven nature of the specified intervals.

Results

Table 1 displays means, standard deviations, and correlations among the variables. As is apparent in this table, on average, respondents sought help between 3 and 9 months following 9/11 (i.e., between January–June of 2002). Noteworthy also is the absence of a significant link between situational severity and PJC (0.06).

In terms of the validity of the PJC measure, consistent with the findings of Spector and Fox (2003), and as can be seen in Table 1, PJC had a nonsignificant correlation ($r = .01$) with social desirability, and was also uncorrelated with all three dispositional coping styles. ($r < .07$; ns in all cases). Additionally, there was a relatively high degree of within-unit agreement (mean $r_{WG} = 0.65$), suggesting that much of the variance in PJC was shared among unit members and is thus unlikely to be disposition-based.

Table 2 displays the survival analysis regression results used to Test Hypotheses 1–4. As can be seen in Table 2, prior to running the hypothesized models we ran a model including only the control variables. In this model, aside from social desirability, which was related to help-seeking delay (estimate = 0.04, $p < .05$), and time in search and rescue (estimate = -0.07 , $p < .001$) none of the other parameters (including those relating to the three coping variables) were statistically significant. In order to test Hypothesis 1, which posited a positive association between PJC and help-seeking delay, we added this variable to the control model. As can be seen in Model 2 of Table 2, PJC was not statistically significant. However when we replaced PJC with situational severity in Model 3 of Table 2, the hypothesized (Hypothesis 2) inverse relationship was significant (estimate = -0.07 , $p < .01$). As can be seen from the difference in the $-2\loglikelihood$ between the control model and Model 3, the addition of situational severity to the control model significantly enhanced our ability to explain the variance in the extent of help-seeking delay ($-2\loglikelihood = 7.02$, $p < .05$).

The absence of such a main effect for PJC is not particularly surprising given our expectation (reflected in Hypotheses 3 and 4) that the association between individuals' perceptions of job control and help-seeking delay is contingent upon situational severity. More specifically, Hypothesis 3 posited that any positive *linear* association between job control and help-seeking delay would be attenuated as a function of situational severity. As can be seen in Model 4 of Table 2, the parameter estimate for the interaction between PJC and situational severity was not statistically significant. However, as can be seen in Model 5 of Table 2, support was found for Hypothesis 4 positing the *curvilinear* effect of PJC on

help-seeking delay. More specifically, when taking the curvilinear impact of PJC on help-seeking delay into account, the estimates for both the linear (i.e., Severity \times PJC) and curvilinear (i.e., Severity \times PJC²) interaction terms are statistically significant (estimates = $-.19$ and $.03$, respectively, $p < .05$ in both cases). Moreover, with the inclusion of these two interaction terms in the model, there is a statistically significant enhancement of model fit ($\Delta-2\loglikelihood_{\Delta df = 2} = 5.94$ $p < .05$).

To further probe the nature of this significant conditioning effect, we plotted the interaction and conducted simple slopes analyses following Aiken and West's (1991) procedures. Accordingly, the plot shown in Figure 1 depicts the modeled relations assuming mean levels for each of the continuous control variables and for those whose demographic profile is consistent with that of the majority with respect to each of the dichotomous control variables (i.e., married Caucasians who had not sought counseling previously). Consistent with Hypothesis 4 and the results presented in Model 5 of Table 2, this figure shows the relationship between PJC and help-seeking delay at three levels of the moderator variable, namely low (1 *SD* below the mean), moderate (mean), and high (1 *SD* above the mean) situational severity. The simple slopes analysis indicates that for low levels of situational severity, there is a positive, *linear* association between PJC and help-seeking delay (estimate of the linear coefficient = 1.37; $p < .01$), as well as an attenuating, albeit nonsignificant curvilinear effect (estimate = -0.24 , ns). In contrast, consistent with our prediction in Hypothesis 3 (that the positive effect of control on delay will be attenuated as situational severity increases), PJC has no significant association (linear or curvilinear) with help-seeking delay at moderate levels of situational severity. Finally, as we proposed in Hypothesis 4, the simple slope analysis indicates that for those reporting a high level of situational severity, there is a *curvilinear* association with low and high levels of perceived job control associated with longer delays than for those with moderate levels of job control (estimate of curvilinear coefficient = 0.43; $p < .01$). An effect size analysis revealed that for those reporting a high level of situational severity, while the delay in help-seeking for those reporting low PJC is only 5% greater than that reported by those reporting high PJC, relative to the delay in help-seeking for those reporting moderate PJC, the delay for those reporting either low or high PJC is more than twice as long. As can be seen in Figure 1, for those reporting low situational severity, the difference between low and medium perceived job control is an additional delay of approximately 2 months. However for those reporting high situational severity, the difference between low and medium perceived job control is a reduction in help-seeking delay time equivalent to approximately 15 months. Similarly, for those reporting low situational severity, the difference between medium and high perceived job control is an additional delay of approximately 2 months. In contrast, for those reporting high situational severity, the difference between medium and high perceived job control is an increase of approximately 17 months in delayed help-seeking.

¹ Interval censoring occurs if the variable of interest cannot be observed exactly, but an interval can be specified within which the observation lies.

Discussion

The findings presented above suggest that while situational severity is significantly (and, as hypothesized, inversely) related to the delay in first responder help-seeking following a catastrophic critical incident, PJC is not. Nevertheless, they also indicate that when taking the level of situational severity into account, control *does* contribute significantly to the explanation of the variance in the time between incident occurrence and help solicitation. More specifically, our findings indicate that while PJC is positively associated with help-seeking delay under conditions of less situational severity, this linear relationship is attenuated as a function of situational severity. Moreover, the findings lend support to our hypothesis that under conditions of more extreme situational severity (i.e., high intensity of incident involvement), the PJC-delay relationship is curvilinear with the highest levels of delay experienced under conditions of very low and very high PJC. Indeed, we found high situational severity associated with the highest and lowest predicted values of help-seeking delay, with high severity first responders reporting low PJC evidencing the longest delay, and high severity first responders reporting moderate levels of PJC evidencing the shortest.

These findings are unique and important for several reasons. First, although there is some evidence indicating that individual differences and situational severity influence *whether* help is sought (Nadler, 1991; Lee, 1997, 2002), to date researchers have not explored how these factors influence the *timing* of such behavior. Moreover, despite the emphasis placed on situational control in the coping effectiveness literature, research on employee help-seeking as a dichotomous outcome has largely neglected the role of situational control in general, and of job control in particular, placing a far greater emphasis on individual coping styles (Bamberger, 2009). Our findings suggest that: (a) individual coping styles have no significant impact on when help is sought, (b) even when taking individual coping factors into account, situational severity and job control play a significant role in determining the timing of such behavior among first respondents involved in a catastrophic critical incident, and (c) the manner in which they do so is neither direct nor straightforward.

Second, these findings are important in that they present an alternative perspective regarding the manner in which these factors likely influence help-seeking behavior. That is, in contrast to the help-seeking literature, which has tended to focus on the direct and/or additive effects of situational severity and control-related contextual factors on help-seeking (Vogel & Wei, 2005; Bamberger, 2009), our findings suggest that the influence of these factors on help-seeking delay is likely to be largely interactive in nature. Moreover, our findings indicate that, the nature of the interaction between PJC and situational severity is largely consistent with the coping literature's "goodness of fit" hypothesis (Conway & Terry, 1992).

Third, we deem our findings to be important in that they extend the expected utility-based framework guiding much of the literature on help-seeking. This framework, based on Nadler's (1991) notion of the "help-seekers dilemma," suggests that individual decisions regarding whether or not to seek help are largely contingent upon the perceived instrumental benefits of doing so when taking into account the perceived psychological costs (Vogel et al., 2005; Bacharach, Bamberger, & Vashdi, 2005). In contrast, the model presented in the

current study expands that perspective in two ways. First it suggests that prior to soliciting help from others, individuals consider not only the expected utility of help-seeking, but compare it with the utility associated with alternative forms of self-coping. Second, it suggests that these comparative utility calculations are continuous and dynamic, such that while the utility of help-seeking may initially be lower than that associated with self-coping, certain conditions (such as less control or greater situational severity) may impact these perceptions (and hence utility calculations) over time, thus motivating help-seeking sooner or later.

Finally, with regard to theories regarding help-seeking among first responders, our findings are important in that they point to a control-delay contingency that is not necessarily linear in nature. Rather, consistent with the logic that first-responders reporting high levels of situational severity and perceiving little or no control over decisions regarding their work tasks may tend toward those forms of self-coping promoting the psychological denial of their condition, our findings suggest a curvilinear conditioning effect. Accordingly, while a positive, linear association between PJC and help-seeking delay may be apparent at lower levels of situational severity, at higher levels of situational severity, this delay was found to be greatest among those with the least PJC, lowest among those with moderate levels of PJC, and then increasing as a function of PJC.

Taken as a whole, our findings therefore strengthen the premise that organizational factors in general and perceived control over decisions in particular likely play a key role in determining the timing of help-seeking by first-responders in response to work-based critical incidents, and that the precise nature of this role is contingent upon the severity of their personal incident-related experience. Particularly in such "macho" workplace cultures in which there are an inherently high cost associated with help-seeking, our findings suggest that higher levels of situational severity may not always elicit the timely solicitation of assistance. Rather, just when first-responders opt to seek the assistance of others is likely to be a combination of situational severity and perceived job control. That is, while increasing levels of situational severity may ultimately result in help-seeking, whether such action occurs sooner or later in the distress process is likely to be more difficult to predict and contingent on individual perceptions of those workplace conditions—like job control—affecting the subjective expected utility of seeking help from others relative to engaging in self-coping. Moreover, our findings, somewhat provocatively, suggest that job control may be a double-edged sword. If too low, even very high levels of situational severity among first responders may fail to elicit timely help-seeking for the reasons noted above. If too high, even at higher levels of situational severity, first-responders may still perceive the utility of help-seeking to be too low relative to that associated with self-coping to justify the more timely solicitation of professional help.

From a practitioner perspective, although research has shown the importance of seeking help soon after a critical incident, there are few studies able to guide managers and policymakers interested in facilitating such behavior by their employees who experience such incidents. In this sense, our findings offer some important insights into how control over those job parameters likely affecting personal vulnerability may serve as an important, but double-edged tool, with which to facilitate such behavior among first responders. Simply the recognition that first responders perceiving very high or very low levels of job control may be

Table 1
Correlations and Descriptive Statistics

Variable	N	M	SD	1	2	3	4
1. Marital status (0 = not married, 1 = Married)	652	0.74	0.44				
2. Ethnicity (0 = White, 1 = other)	648	0.10	0.30	0.04			
3. Seniority	652	10.85	6.72	0.22***	-0.02		
4. Education level	652	4.36	1.42	-0.12**	-0.04	-0.21***	
5. Task focused coping	641	26.39	6.06	0.02	-0.02	0.04	0.02
6. Emotional coping	641	22.48	5.27	-0.05	0.02	0.005	-0.04
7. Avoidance coping	643	18.43	4.61	-0.03	-0.05	-0.002	-0.06
8. Income	637	6.49	2.38	0.19***	-0.05	0.62***	-0.15***
9. Social desirability	647	6.68	3.96	0.09*	0.03	0.07	-0.04
10. Previous counseling	644	0.13	0.34	-0.13***	-0.006	0.08*	0.01
11. # incidents injured since 9/11	649	1.81	1.45	-0.11**	-0.01	-0.01	0.03
12. # incidents fellow injured since 9/11	640	2.98	1.64	-0.01	-0.04	0.01	0.01
13. # incidents fellow died since 9/11	647	0.14	0.34	-0.03	0.05	0.11**	0.001
14. Time in search and rescue	628	11.22	4.33	-0.10*	-0.03	0.006	-0.05
15. Percieved job control	648	2.76	1.19	-0.001	0.05	0.18***	-0.05
16. Situational severity	652	7.18	2.96	-0.04	0.02	0.02	-0.07
17. Delay in help seeking	290	3.41	1.23	-0.05	-0.10	-0.16**	0.05

* $p < .05$. ** $p < .01$. *** $p < .001$.

reluctant to seek help for issues resulting from the most severe situations may help managers develop more effective critical-incident response programs. For example, our results suggest that there may be a significant benefit in expanding organizational

critical incident debriefing protocols to include efforts aimed at exploring with affected employees how task-related processes and procedures might be changed to reduce employee vulnerability. Moreover, such knowledge may help employee assistance and

Table 2
Survival Analysis Regression Models With Help-Seeking Delay as the Dependent Variable

	Model 1: Control model (n = 559)		Model 2: Main effect PJC (n = 555)		Model 3: Main effect intensity of involvement (n = 559)		Model 4: Interaction model (n = 555)		Model 5: Curvilinear interaction model (n = 555)	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	5.31***	0.70	5.39***	0.71	5.66***	0.72	6.18***	0.82	4.24***	1.15
marital status (0 = not married, 1 = Married)	0.25	0.17	0.26	0.17	0.24	0.17	0.23	0.17	0.24	0.17
Ethnicity (0 = White, 1 = other)	-0.43	0.29	-0.43	0.29	-0.47	0.29	-0.45	0.29	-0.51	0.29
Seniority	0.008	0.01	0.01	0.01	0.006	0.01	0.006	0.01	0.006	0.01
Education level	-0.001	0.05	-0.01	0.05	-0.004	0.05	-0.02	0.05	-0.03	0.05
Task focused coping	-0.001	0.01	-0.003	0.01	-0.0002	0.01	-0.003	0.01	-0.002	0.01
Avoidance coping	-0.009	0.01	-0.007	0.01	-0.01	0.01	-0.007	0.01	-0.01	0.01
Emotional coping	0.01	0.02	0.010	0.01	0.01	0.01	0.01	0.01	0.02	0.02
Income	-0.04	0.04	-0.04	0.04	-0.04	0.04	-0.03	0.04	-0.05	0.04
Social desirability	0.04*	0.02	0.04*	0.02	0.03	0.02	0.04*	0.02	0.04*	0.02
Previous counseling	-0.38	0.20	-0.41*	0.20	-0.41*	0.20	-0.48*	0.20	-0.50*	0.20
# incidents injured since 9/11	-0.08	0.05	-0.07	0.05	-0.06	0.05	-0.04	0.05	-0.05	0.05
# incidents fellow injured since 9/11	-0.05	0.04	-0.05	0.04	-0.04	0.04	-0.05	0.04	-0.06	0.04
# incidents fellow died since 9/11	0.02	0.21	0.001	0.21	0.09	0.21	0.09	0.21	0.15	0.21
Time in search and rescue	-0.07***	0.02	-0.07***	0.02	-0.06***	0.02	-0.06***	0.02	-0.06**	0.02
Perceived job control			-0.02	0.06			-0.18	0.16	1.37*	0.70
Perceived job control ²									-0.24*	0.17
Situational severity					-0.07**	0.03	-0.13*	0.06	0.14	0.13
Situational severity × PJC							0.02	0.02	-0.19*	0.09
Situational severity × PJC ²									0.03*	0.01
-2loglikelihood	1422.14		1408.08		1415.12		1399.68		1393.74	
Δ2loglikelihood (assuming same n)			0.1 (compared with Model 1 with same n)		7.02* (compared with Model 1)		8.4* (compared with Model 2)		5.94* (compared with Model 4)	

* $p < .05$. ** $p < .01$. *** $p < .001$.

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	5	6	7	8	9	10	11	12	13	14	15	16
	0.42***											
	-0.07	0.03										
	-0.03	-0.06	-0.02									
	0.14***	0.03	-0.21***	0.08*								
	0.03	0.05	0.04	0.05	-0.09*							
	-0.01	0.04	0.04	0.004	-0.04	0.08*						
	-0.07	-0.05	0.13**	0.04	-0.01	0.01	0.21***					
	0.07	0.15***	0.07	0.06	-0.04	-0.007	0.17***	0.05				
	0.05	0.08*	0.04	0.03	-0.03	-0.05	0.18***	0.07	0.12**			
	0.06	0.05	0.03	0.10*	0.01	0.008	0.03	-0.01	0.04	0.04		
	0.01	0.02	0.10*	0.04	-0.04	0.01	0.25***	0.11**	0.14***	0.32***	0.06	
	0.05	-0.04	-0.03	0.004	0.02	-0.08	0.07	0.06	-0.03	-0.005	-0.03	-0.14*

human resources professionals better frame, target, and time their postincident interventions so as to increase the likelihood that those in need will refer themselves for assistance sooner rather than later. For example, rather than relying on self-referral, our findings suggest that employee assistance practitioners might place greater emphasis on training supervisors and peers in work units dominated by jobs offering limited *decision latitude* to be able to more effectively identify and then assist colleagues in distress to seek the help they need.

Regardless of these study strengths, like all studies, this one too has a number of limitations. First, given that our survey was

conducted 18 months after the actual 9/11 incident: (a) our data were right-censored at this point in time, and (b) we had to take into account that a significant proportion of first responders had since redeployed with the NYC Fire Department (FDNY). With respect to the issue of right censoring, longitudinal trauma studies indicate that between 30% and 90% of individuals meet full criteria for PTSD within 1 month following trauma exposure (see, e.g., Shalev et al., 1998). Thus, 18 months is likely a sufficient time to examine delay times for seeking help to treat posttraumatic distress. Moreover, as firefighters are likely to continue to experience additional severe situations as time goes by, it would have

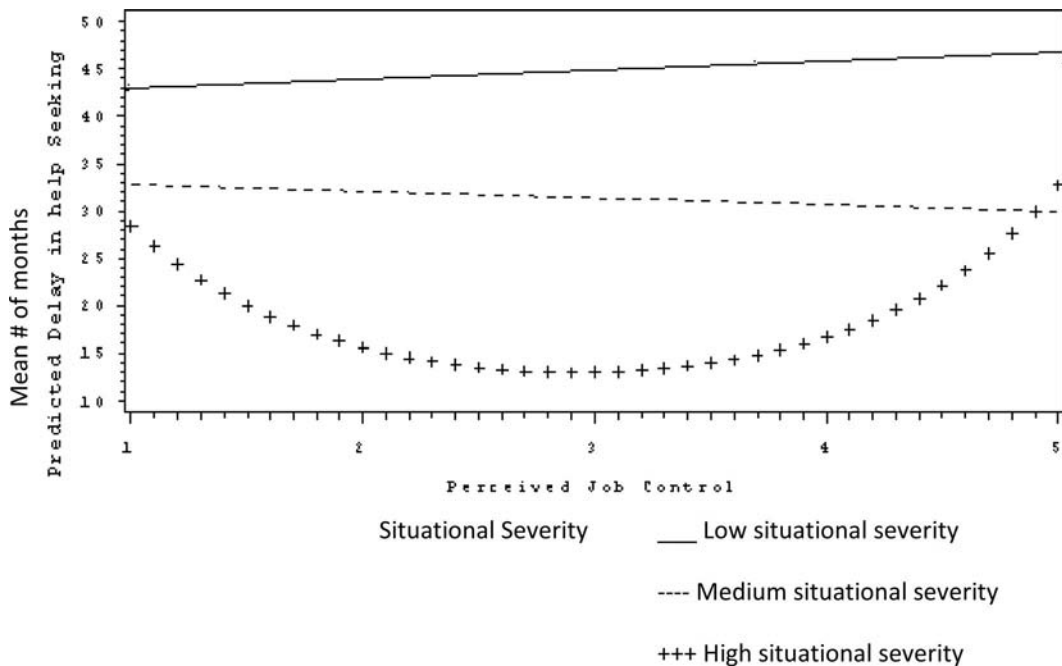


Figure 1. Graph depicting the curvilinear interaction of perceived job control and situational severity on delay in help seeking among married Caucasian study participants.

been more difficult to focus on the implications of involvement in this one particular incident on the timing of help-seeking had we waited for more firefighters to seek help. Regardless, the survival analysis model that we tested takes into account the right-censoring of the data.

We managed the question of redeployment by dropping from our analysis those first responders reporting having switched companies since 9/11. However, because the elimination of such a large proportion of our sample could introduce sample bias (particularly if such redeployment stemmed from the need to cope with distress associated with 9/11), we conducted a sensitivity analysis aimed at assessing the robustness of our results when these individuals are reintroduced into the sample. The results of this analysis (available from the authors) suggest little risk of sample bias in that the findings when these redeployed fire fighters were reintroduced into the sample were not meaningfully different from those reported above.

Second, although we controlled for those individual difference factors most frequently cited in the literature as influencing help-seeking, it was beyond the realm of the current study to examine how these and other factors might condition the impact of situational and job characteristics on help-seeking delay. Indeed, research suggests that personal characteristics such as coping style (Avero et al., 2003), self-consciousness (Rickwood & Braithwaite, 1994), and self-esteem (Nadler, Mayseless, Peri, & Chemerinski, 1985), as well as cultural identity (Kim & Omizo, 2003; Kim, 2007) may both directly affect help-seeking, and condition the impact of situational and structural factors on help-seeking (Bamberger, 2009). Accordingly, researchers may wish to examine how such factors influence help-seeking delay among first-responders and others exposed to traumatic events in the context of their work role.

Third, all of our measures were collected retrospectively and at a single point of time on the basis of self-reports, presenting the dual risk of retrospective bias and common method variance. In terms of the former, as noted above, by applying the LHC approach and focusing our retrospective measures on personal behaviors rather than on individual interpretations of situations or events, we believe that our findings reflect little if any retrospective bias. Nevertheless, despite the inherent difficulty of doing so (Creamer, Burgess, & Pattison, 1992), researchers might explore help-seeking behavior among first responders using more opportunistic, prospective designs.

In terms of the latter, although it is possible that common method variance inflated the relationships among our measures such that the actual relationships among the constructs at the core of our model are smaller than they appear, we believe that this is unlikely for two reasons. First, as noted above, following Edwards (2008) we controlled for common method variance by taking social desirability into account in our models. Second, particularly given the complex interactions specified in our model, method variance is unlikely to account for the complex pattern of results documented above (Richardson, Simmering, & Sturman, 2009). Third, in order to rule out the possibility that help-seeking may have influenced respondents' perceptions of job control we conducted a post hoc analysis comparing PJC among those who sought help with that of those who to date had not yet sought help. This analysis showed no significant difference in PJC between those

who sought help and those had yet to do so (Mean_{didn't seek} = 2.74; Mean_{did seek} = 2.83; $t_{695} = -0.97$, *ns*).

Additionally, our measure of situational severity may be critiqued as combining injury- and noninjury-related events into a single inventory. Accordingly, we conducted a sensitivity analysis (Baird, 1989) aimed at assessing the degree to which our findings might be an artifact of the overweighting of self-trauma or injury in our measure. To do so, we created a new situational severity measure that contained all of the items except those pertaining to self-trauma. Across all of the models tested, there were no appreciable differences in the findings when using this constrained version of the situational severity measure.

Fourth, we collected no data regarding the efficacy of the help sought after the incident of 9/11. Thus while our analyses offer insight into when help is sought for emotional issues resulting from severe situations, they offer no information with regard to the quality of the help ultimately solicited. Thus, it may be that some individuals sought help quickly, but because they did so quickly, they opted for suboptimal help, or assistance that was less than appropriate in meeting their particular needs. Accordingly, researchers may wish to examine not only the factors influencing when the person seeks help but also the effectiveness of the help sought at the different times. Researchers might also wish to examine the efforts by first responders to exert control over their jobs by making changes designed to reduce their sense of vulnerability triggered by such involvement. In particular, research is needed to better understand the individual differences predictive of such behavior, as well as the contextual conditions facilitating or impeding such efforts.

Fifth, our conclusions are based on the assumption that seeking help sooner rather than later has benefits for first responders even if help is sought more than a year subsequent to when the event occurred. While we were unable to identify studies directly examining the possible benefits of more timely provision of help months after the occurrence of a critical incident, several recent studies (e.g., Boscarino et al., 2006; Hobfoll et al., 2007) suggest that even if by only shortening the time that victims have to suffer from the secondary sequelae of lagging or transient distress, there may be a meaningful benefit to timely help-seeking even months or years after incident involvement. Nevertheless, more rigorous research is needed to understand the extent to which the timing of help-seeking has meaningful psychological consequences when help has yet to be sought months or even years after incident involvement.

Finally, because our study was conducted on fire fighters involved in a (gratefully) unique event, our findings may not necessarily be generalizable to other first responders in other contexts. Indeed, with the media focusing on first responder traumatic distress after 9/11, it is possible that our results were influenced by the demand characteristics generated by the unique situation. While it is difficult to speculate on the impact that such demand characteristics might have on our findings, it is possible that they limit the external validity of our findings. External validity may be further constrained by the fact that our sample was restricted to males. While there may still be few female firefighters, women are well represented in most other first responder occupations (e.g., paramedics, police). As women are twice as likely as men to suffer PTSD symptoms (Stein, Walker, & Forde, 2000), future research

should also address the degree to which our findings are also generalizable to females in these other first-responder occupations.

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