

A Short-term Longitudinal Analysis of Leisure Coping Used by Police and Emergency Response Service Workers

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Despite the growth of leisure coping research, an important yet neglected idea is whether or not and how leisure contributes to coping with stress above and beyond the effects of general coping; that is, coping not directly associated with leisure (e.g., problem-focused coping). The purpose of the present study was to examine the contributions of leisure to coping with stress and maintaining good physical and mental health among workers of police and emergency response services when the effects of general coping were taken into account. According to hierarchical regression analyses, leisure coping showed a positive relationship with both short-term and longer-term outcomes of stress and coping above and beyond the contributions of general coping. It is worth emphasizing that mental health was significantly predicted only by leisure coping, not by general coping. The use of leisure for enhancing mood and facilitating palliative coping was found to significantly predict coping effectiveness, satisfaction with coping, and stress reduction. The facilitation of palliative coping and companionship through leisure was related to good mental health, whereas high leisure empowerment was associated with better physical health. Implications of the findings and future research perspectives on leisure coping are discussed.

KEYWORDS: *Stress coping, physical and mental health, benefits of leisure*

The role of leisure in coping with stress and protecting health has received increased research attention in recent years. A number of studies have been conducted to identify specific aspects of leisure that may contribute to coping with stress and maintaining good health among various population groups (e.g., Caltabiano, 1994, 1995; Compton & Iso-Ahola, 1994; Dattilo, Caldwell, Lee, & Kleiber, 1998; Dupuis & Pedlar, 1995; Dupuis & Smale, 1995;

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Hull & Michael, 1995; Lee, Dattilo, Kleiber, & Caldwell, 1996; Lobo, 1996; McCormick, 1999; Ouellet, Iso-Ahola, & Bisvert, 1995; Patterson & Coleman, 1996; Trenberth, Dewe, & Walkey, 1999).

This interest in leisure coping research has paralleled the growth of stress and coping research in the social sciences in general (see Hobfoll, Schwarzer, & Chon, 1998; Somerfield & McCrae, 2000). In social science research on general coping processes, specific types of coping resources and strategies have been identified (e.g., problem-focused coping and emotion-focused coping; Lazarus, 1993; Lazarus & Folkman, 1984; Parker & Endler, 1996), and the impact of these types on the relationship between stress and outcome indicators such as pathology and health has been examined (see Gottlieb, 1997; Lazarus, 1999; Zeidner & Endler, 1996 for reviews). Recently, greater attention has been devoted to examining the processes of adaptation to stress (e.g., a daily process approach to the study of stress and coping; Tennen, Affleck, Armeli, & Carney, 2000; Stone, Shiffman, & De Vries, 1999) and developing clinical interventions to help people deal with stress (e.g., Coyne & Racioppo, 2000; Folkman & Greer, 2000).

A variety of coping scales have been developed that have promoted research on coping and they provide a good description of what are seen as the important dimensions of general coping. For example, the Coping Orientation for Problem Experiences (COPE) inventory has been one of the most frequently used coping instruments (Carver, Scheier, & Weintraub, 1989). It was constructed to measure a wide range of potential responses to stressors and is based on a model that identifies four primary coping dimensions: (a) problem-focused coping (active coping, planning, and suppression combined), (b) social support and emotion-focused coping (instrumental and emotional social support and venting of emotions combined), (c) acceptance, restraint, and positive reframing combined, and (d) disengagement coping (denial, mental disengagement, behavioral disengagement, and use of religion combined). However, these dimensions deal only with general coping—coping that is not directly associated with leisure. Health and stress-coping researchers have mostly ignored the role of leisure in helping people cope with stress and have not included leisure as a coping dimension.

Coleman and Iso-Ahola (1993) were among the first researchers to systematically conceptualize the use of leisure as a way of coping. They developed a leisure and health model in which leisure-generated enduring feelings of self-determination and social support are conceptualized as two major dimensions or types of leisure coping. Some evidence to support their model has been found. For example, using a small-scale general population survey ($n = 104$), Coleman (1993) found evidence for the buffer effect of the leisure-generated self-determination disposition, but the buffer effect of leisure-generated social support was not found. Iso-Ahola and Park (1996) examined the role of leisure in coping with stress among Taekwondo practitioners and found that leisure companionship (shared leisure activities engaged in primarily for the sake of enjoyment) buffered the effect of life stress on mental illness symptoms (depression), whereas leisure friendship (friendly feelings

gained through leisure participation) did the same for physical illness symptoms. They did not, however, find a moderating effect of the self-determination disposition. Recent research has suggested that there also may be leisure coping processes other than buffering at work. For example, Iwasaki and Mannell (2000b) found that some stressors encountered in daily life may trigger certain leisure responses that "mitigate" or "suppress" rather than buffer the effects of these stressors depending on the nature of the stressors themselves.

The usefulness of models, such as the one proposed by Coleman and Iso-Ahola (1993), have been shown in applied areas, in particular, therapeutic recreation. For example, according to Dupuis and Pedlar's (1995) inductive analysis of data gathered with participant observation, open-ended questionnaires, and in-depth qualitative interviews with caregivers of older and institutionalized family members with Alzheimer's disease, family leisure programs facilitated the development of social support. They have suggested that social support, in turn, may operate as a buffer to moderate the impact of caregivers' stress on psychological health and well-being and provide an opportunity for the re-establishment of meaningful relationships. Similarly, based on their analysis of in-depth interviews with individuals with recent spinal cord injury following discharge from rehabilitation, Dattilo et al. (1998) identified the importance of social contacts developed through leisure for facilitating community integration. Bedini and Phoenix's (1999) leisure wellness program model, which was designed to address the leisure needs of caregivers of older adults, recognizes the potential importance of leisure as a coping mechanism. Their model also is empirically based on the results from focus groups of professionals who work with caregivers of older adults.

Despite the growth of research on general coping processes and leisure coping, on the one hand, little attention has been given to the potential of leisure within the general coping literature (see Folkman & Moskowitz, 2000). On the other hand, leisure researchers have tended to study the role of leisure coping independent of the influence of general coping processes. To achieve a more comprehensive understanding of coping mechanisms, an important first step is to examine the process and impact of leisure coping over and above the effects of general coping.

Stress and Coping for Police and Emergency Response Service Workers

Police and emergency response services have been identified as occupational groups that tend to experience very high stress levels both in work and family lives (Anshel, 2000; Beaton, Murphy, Pike & Corneil, 1997; Violanti & Paton, 1999). According to Williams (1987), "for cops, the war never ends . . . they are out there 24 hours a day, 7 days a week to protect and serve, to fight the criminal . . . our peace time enemy. The police officer is expected to be combat-ready at all times while remaining normal and socially adaptive when away from the job" (p. 267). This description appears also

applicable to emergency response workers including fire fighters and paramedics who must always be ready for emergencies.

It has been shown that workers in police agencies are exposed to distressing events that go beyond the experience of ordinary citizens (Violanti & Paton, 1999). The inability of these workers to cope with stressful events can result in undesirable psychological and somatic outcomes, leading to chronic stress, burnout, and quitting the profession (Anshel, 2000). However, it has been found that the use of effective coping strategies can help these workers better deal with stress. For example, in their study of police officers, Mearns and Mauch (1998) found that those officers with high mood regulation expectancies reported significantly lower levels of anger and distress. Their results suggest that having strong expectancies for effectively regulating one's mood buffers the effects of occupational stress.

Harvey-Lintz and Tidwell (1997) examined the psychological impact of the April 29, 1992 Los Angeles civil unrest on the stress levels of law enforcement officers. Specifically, levels of posttraumatic stress disorder (PTSD) symptomatology in Los Angeles Police Department officers assigned to a major riot area were evaluated. It was found that PTSD symptomatology was either positively or negatively related to specific types of coping strategies used. PTSD symptomatology had a positive relationship with cognitive avoidance, acceptance or resignation, and emotional discharge, whereas it had an inverse relationship with seeking social support and information, and seeking alternative rewards.

Beaton et al. (1997) investigated the relationships among social support, network conflict, occupational stress, job satisfaction, and health, using samples of 1,730 fire fighters and 253 paramedics. In both samples, perceived social support and network conflict at work were strongly correlated with job satisfaction, and work morale. A path model further suggested that fire fighters/paramedics' appraisal of their occupational stress mediated the effects of perceived social support and network conflict at work on job dissatisfaction and stress outcomes. In a study of Scottish police officers, Biggam, Power, and MacDonald (1997) found that these officers showed a preference for more problem-focused, direct-action coping strategies to deal with routine police work. In particular, officers displayed a preference for balancing the demands of work and home as a means of coping with stressors involving routine police work. Despite the stressful nature of police and emergency response services, understanding the coping process in dealing with stress experienced by those service workers has received only scant attention in the research literature (Anshel, 2000). Furthermore, it is unknown whether and how leisure contributes to helping these service workers cope with stress and maintain good health.

Purpose

The purpose of the present study was to examine the contribution of leisure to coping with stress and maintaining good physical and mental

health over and above the effects of general coping among workers in police and emergency response services. These occupational groups were chosen because of their highly stressful nature of their work, family, and personal lives, and the potential they provided for studying the stress coping process. Given recent world events such as terrorism and the target population of the study, this paper is uncannily timely and has important implications.

In this study, various dimensions of leisure coping and general coping were measured, and the impact of their use on immediate coping outcomes (i.e., coping effectiveness, satisfaction with coping outcomes, and stress reduction) and distal or longer-term coping outcomes (i.e., physical and mental health) was examined when the contributions of general coping were taken into account. It is important to distinguish between immediate coping outcomes (e.g., coping effectiveness) and distal coping outcomes (e.g., physical and mental health) because of the differences in the short- and long-term impact of stress and coping on individuals (e.g., Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus, 1991; Meneghan, 1982; Zeidner & Saklofske, 1996).

In the present study, Iwasaki and Mannell's (2000a) *hierarchical dimensions of leisure coping* were adopted to conceptualize and measure leisure coping (see Conceptual Framework of Leisure Coping below for details). Using their model, Iwasaki (2001a) found evidence that leisure coping uniquely contributed to managing the daily hassles experienced by university students over and above the effects of the general coping strategies they used. Specifically, he found that enduring leisure coping beliefs significantly contributed to greater immediate coping outcomes such as coping effectiveness, satisfaction with coping outcomes, and stress reduction. Long term outcomes such as lower mental ill-health and higher psychological well-being also were positively influenced by the presence of leisure coping beliefs. The use of behavioral and cognitive leisure coping strategies was found to significantly predict positive immediate coping outcomes as well. However, there is a need to determine if leisure coping operates in other non-student population groups, and which sub-dimensions or types of leisure coping facilitate better coping outcomes over and above the contributions of general coping.

Unlike Iwasaki's (2001a) study, the present study examined the impact of specific types or sub-dimensions of leisure coping (e.g., leisure empowerment and leisure palliative coping; see Conceptual Framework of Leisure Coping below for details) rather than the effects of general dimensions of leisure coping (i.e., leisure coping beliefs and strategies). Given the findings of the Iwasaki (2001a) study, it was hypothesized that some sub-dimensions of leisure coping would significantly contribute to coping with stress and maintaining good health above and beyond the effects of general coping. However, because there has been no previous attempt to examine the effects of specific types or sub-dimensions of leisure coping while accounting for the impact of general coping, the authors did not specifically hypothesize about which sub-dimensions of leisure coping would better predict positive coping outcomes. Although, conceptually, all of the sub-dimensions of lei-

sure coping could significantly contribute to managing stress, it was felt that it was premature to establish hypotheses regarding the relative strengths of the sub-dimensions of leisure coping in predicting outcomes. Findings from the present study could provide some insights into the establishment of such hypotheses in future research.

The rationale for the use of a short-term longitudinal design in this study was that daily hassles would potentially have a strong impact on individuals' adaptive outcomes including health. To date, daily hassles have been shown to adversely affect people's health and well-being in a number of studies (e.g., Brown & Harris, 1989; Kohn, 1996; Monroe & McQuaid, 1994; Wheaton, 1994). For example, some studies have reported that the negative effects of hassles far exceed those of major life events (e.g., Landreville & Vezina, 1992; Weinberger, Hiner, & Tierney, 1987).

Conceptual Framework of Leisure Coping

Iwasaki and Mannell (2000a) developed *hierarchical dimensions of leisure coping* based on an integrative review of social psychological and leisure literature of stress and coping. At the most general level, *leisure coping beliefs* (i.e., people's beliefs that their leisure helps them cope with stress) are distinguished from *leisure coping strategies* (i.e., actual situation-grounded coping behaviors or cognitions available through leisure). Leisure coping *beliefs* gradually develop over time and constitute enduring psychological dispositions. Leisure coping *strategies* are more situation-specific than leisure coping beliefs, and their use and effectiveness are assumed to vary depending on the specific life circumstances encountered by the individual.

The rationale for distinguishing between leisure coping beliefs and leisure coping strategies is that dispositional coping styles and situation-specific coping strategies represent two major types of coping (Endler, Parker, & Summerfeldt, 1993; Lazarus, 1993). Although a certain individual tends to have her/his typical way of coping with stress (i.e., dispositional coping styles), the same person likely reacts to specific stressful situations differently and uses different ways of coping, due in part to the unique characteristics and requirements of these situations. For example, perceived social support is commonly seen as a coping disposition because it reflects an enduring belief about the availability of social support (e.g., from close friends), and this belief may help an individual deal with stress (e.g., struggles or disappointments at work). In contrast, companionship is considered as a situation-specific coping strategy because people will seek out opportunities to socialize with others in response to their experiences with a specific stressor (e.g., going out for a drink with others after a long day working at a solitary job). Perceived social support and companionship both are seen as types of social support; however, the former represents people's beliefs, whereas the latter represents their behaviors.

Iwasaki and Mannell (2000a) also distinguished several sub-dimensions for each of the leisure belief and strategy dimensions. These include: (a) a

leisure-generated self-determination disposition (people's belief that their leisure pursuits are freely chosen and under their control); (b) *leisure friendship* (people's belief that friendships developed through leisure provide them with social support); (c) *leisure empowerment* (the extent to which leisure provides people with opportunities to feel empowered and develop resources for dealing with constraints and challenges in life); (d) *leisure palliative coping* (a break through leisure which allows people to feel refreshed and regroup to better handle stressors); (e) *leisure companionship* (discretionary and enjoyable shared leisure experiences as a form of social support); and (f) *leisure mood enhancement* (the enhancement of positive mood and/or the reduction of negative mood through leisure to regulate the emotions/moods of individuals under stress). Of these six sub-dimensions, the first three are conceptualized as leisure coping beliefs, and the latter three as leisure coping strategies.

To further illustrate, selected examples of these dimensions—leisure empowerment and leisure palliative coping—are more fully described. First, leisure may provide individuals with opportunities to develop feelings of empowerment and resources that help them effectively cope with stressful events (Freysinger & Flannery, 1992; Henderson & Bialeschki, 1991). Those individuals with high leisure empowerment tend to interpret stressful encounters positively as challenges or opportunities for personal growth and therefore are motivated to “fight against” the constraints and challenges they experience in everyday life. Having these “positive attitudes” toward life and “strong resources” appears important for better managing challenges/obstacles in life, and leisure may contribute to the development of those attitudes and resources.

The use of leisure for palliative coping allows people to temporarily escape from stressful events. A break through leisure, such as a coffee break, weekend get-away, or vacation, may allow individuals under stress to feel refreshed and regroup in order to better handle stressful events or problems (Patterson & Carpenter, 1994; Sharp & Mannell, 1996). Palliative coping through leisure may also allow individuals to gain renewed energy and perspective in their lives. This idea is consistent with Kleiber's (1999) notion that leisure may provide an opportunity to restore the disruption of one's “normal” life patterns when she/he experiences negative life events. The idea of palliative coping through leisure also is supported by Folkman and Moskowitz (2000) who suggested that meaningful positive events such as leisure can act as “breathers” from stress, “sustainers” of coping effort, and “restorers.”

Methods

Participants

Two hundred randomly selected employees in the Police and Emergency Response Services Department in a western Canadian city were the sample frame of the study. The number of participants who completed ques-

tionnaires at Stages One, Two, and Three was 156 (males = 131, females = 25), 141 (males = 117, females = 24), and 132 (males = 109, females = 23), respectively. That is, 66% of the original 200 participants ($n = 132$) completed all the three stages. Of the 132 respondents, all but two were full-time employees of police or emergency response services, and their ages ranged from 24 to 61 (mean = 39). The non-respondents and those participants who failed to complete Stages 2 and/or 3 did not significantly differ from those participants who completed all the stages with respect to their sexes and ages. For marital status, the respondents were married with children ($n = 76$), married without children ($n = 20$), single parents ($n = 5$), single without children ($n = 13$), common-law ($n = 10$), separated ($n = 6$), or divorced ($n = 2$). Seventy-seven of the 132 respondents had their children living at home.

Data Collection

Prior to the collection of data, the principal investigator contacted the Director of the Police and Emergency Response Services Department and secured cooperation. First, the participants received a project package that consisted of a cover letter describing the purpose and importance of the study, instructions summarizing their tasks, three sets of questionnaires, and self-addressed and stamped envelopes. They were instructed to complete and return each of the three sets of questionnaires at each of the three measurement stages. In addition to providing them with the written instructions for the completion of the questionnaires, a research assistant periodically called each participant to remind the timing of completing each questionnaire. According to the participants' records of the dates of their completions, they completed the questionnaires in a timely manner.

At Stage One, participants' baseline health status and dispositional coping resources generated through leisure pursuits (i.e., leisure coping beliefs) were measured, and demographic information was collected. At Stage Two, one month after Stage One, they completed a questionnaire to report stressors they had encountered during the past month, the use of coping strategies to manage the stressors, and immediate coping outcomes (i.e., coping effectiveness, coping satisfaction, and stress reduction). Coping strategies measured were general coping (coping which is not directly associated with leisure), and situation-specific coping behaviors or cognitions available through leisure (i.e., leisure coping strategies). At Stage Three, one month after Stage Two, the participants' health status was measured again. Each questionnaire was returned in a self-addressed and stamped envelope following each stage. Those who completed all the stages received \$15 in cash in appreciation of their participation and time.

This three-stage measurement design had a number of advantages. First, it was necessary to measure participants' baseline health status at Stage One to take into account individual differences in initial health status. Leisure

coping beliefs were measured at Stage One and leisure coping strategies at Stage Two because the former are assumed to be relatively stable and constitute enduring personality dispositions, whereas the latter are assumed to vary according to the unique characteristics of the stressors experienced in daily life. Along with assessing leisure coping strategies, recent stressors and immediate coping outcomes were measured at Stage Two in order for the participants to provide a retrospective account of recent stressors experienced, strategies used to cope with the stressors, and the participants' immediate assessment of these strategies' effectiveness. Finally, health status was measured at Stage Three because it was necessary to assess the longer-term effects of the stressors and coping strategies used on health. Also, because health is considered a longer-term outcome of stress and coping than immediate coping outcomes, immediate coping outcomes were measured at Stage Two and health at Stage Three.

Measures

Health. The Medical Outcome Study (MOS) 36-Item Short-Form Health Survey (SF-36; Ware, Kosinski, & Keller, 1994) was used to assess respondents' health. The SF-36 was designed to obtain summary measures of eight health concepts—four each for physical and mental health (Ware, Kosinski, & Keller, 1996; see Table 1). The SF-36 has proven to be useful for a variety of purposes (Ware et al., 1994), and Rejeski, Brawley, and Shumaker's (1996) review of numerous health measures has suggested that the SF-36 is one of the best measures for general population health research. For example, in cross-sectional and longitudinal tests, both the SF-36 Physical Component Summary and the Mental Component Summary have detected hypothesized differences in nearly all tests based on physical or mental criteria (Ware et al., 1994).

Stressors. Eleven-point scales (see Table 1) were used to measure major types of recent stressors. The identification of these stressors was based on Mattlin, Wethington, and Kessler's (1990) and Moos and Moos' (1994) studies on recent stressful events and coping. In addition, the participants reported overall levels of stress in the past month using the same scale. Means for the stressor dimensions and overall assessment of stress levels were calculated for each participant to represent stress levels in the past month.

General coping. The Coping Orientation for Problem Experiences (COPE; Carver & Scheier, 1994; Carver et al., 1989) inventory was used to assess general coping strategies that are not directly associated with leisure. The COPE inventory has been widely used and has satisfactory psychometric properties (Carver & Scheier, 1993; Carver, Scheier, & Pozo, 1992). For example, the pattern of associations with theoretically related personality measures (e.g., optimism, control, hardiness, Type A) has provided evidence of the convergent and discriminant validity of the scale, and the factor structure of the scale has been supported (Carver et al., 1989). In the present study,

TABLE 1
Summary of Measures Used

Names of Variables (Stages)	Names of Measures	Dimensions	# of Items	Rating Scales	Definitions or Sample Items
Health (Stages 1 & 3)	Medical Outcome Study (MOS) 36- Item Short-Form Health Survey (SF-36; Ware, Kosinski, & Keller, 1994)	Physical health:			
		Physical functioning	10 items	1 = "yes, limited a lot" to 3 = "no, not limited at all"	Limitations in physical activities because of health problems (Physical functioning)
		Role-physical	4 items	1 = "yes" and 2 = "no"	Limitations in usual role activities because of physical health problems (Role- physical)
		Bodily pain	2 items	1 = "very severe" to 5 = "none"	
		General health	5 items	1 = "poor" to 5 = "excellent"	General perceptions about physical health (General health)
		Mental health:			
		Vitality	4 items	1 = "all of the time" to 6 = "none of the time"	Energy and fatigue (Vitality)
		Social functioning	2 items	1 = "all of the time" to 5 = "none of the time"	Psychological distress and well-being (Mental health)
		Role-emotional	3 items	1 = "yes" and 2 = "no"	
		Mental health	5 items	1 = "all of the time" to 6 = "none of the time"	

TABLE 1
(Continued)

Names of Variables (Stages)	Names of Measures	Dimensions	# of Items	Rating Scales	Definitions or Sample Items
Leisure coping beliefs (Stage 1)	Leisure Coping Belief Scale (LCBS; Iwasaki & Mannell, 2000a)	Leisure-generated self- determination	7 items	1 = "strongly disagree" to 7 = "strongly agree"	Leisure is a self- determined activity for me (self- determination). My leisure involvements strengthen my ability to manage problems in life (leisure empowerment). I feel emotionally supported by my leisure companions (leisure friendship)
		Leisure empowerment	7 items		
		Leisure friendship	16 items		
Recent stressors (Stage 2)	No specific name	Role strains Health-related stressors Interpersonal stressors Environmental stressors Traumas Overall stress levels	1 item for each dimension	0 = "did not occur"; 1 = "not very stressful" to 10 = "extremely stressful" in which 10 is equivalent to the death of a loved one	Demanding work, family- related demands, and/ or conflict between roles such as worker, parent, care-giver (Role strains) Uncomfortable working environment, poor living conditions, unsafe community, and/or financial problems (Environmental stressors)

TABLE 1
(Continued)

Names of Variables (Stages)	Names of Measures	Dimensions	# of Items	Rating Scales	Definitions or Sample Items
General coping (Stage 2)	Coping Orientation for Problem Experiences (COPE; Carver, Scheier, & Weintraub, 1989) inventory	Problem-focused coping (active coping, planning, and suppression)	12 items	1 = "I did not do this at all" to 5 = "I did this a great deal"	I made a plan of action (problem-focused coping).
		Social support and emotion-focused coping (instrumental and emotional social support and venting of emotions)	12 items		I let my feelings out (emotion-focused coping).
		Acceptance, restraint, and positive reframing	12 items		I tried to see it in a different light to make it seem more positive (positive reframing).
		Disengagement coping (denial, mental and behavioral disengagement, and use of religion)	16 items		I pretended that it hasn't really happened (disengagement coping).
Leisure coping strategies (Stage 2)	Leisure Coping Strategy Scale (LCSS; Iwasaki & Mannell, 2000a)	Leisure palliative coping Leisure companionship Leisure mood enhancement	7 items for each dimension	1 = "strongly disagree" to 7 = "strongly agree"	Engagement in leisure allowed me to gain a fresh perspective on my problems (palliative coping). Socializing in leisure was a means of managing stress (companionship). My leisure helped me feel better (mood enhancement).

TABLE 1
(Continued)

Names of Variables (Stages)	Names of Measures	Dimensions	# of Items	Rating Scales	Definitions or Sample Items
Immediate coping outcomes (Stage 2)	No specific name	Coping effectiveness Coping satisfaction Stress reduction	3 items for each dimension	1 = "strongly disagree" to 7 = "strongly agree"	Things have worked out after all (coping effectiveness). I am satisfied with my response to this event (coping satisfaction). My feelings of stress were reduced (stress reduction).

Carver et al.'s (1989) four-factor model of coping was adopted to identify primary dimensions of general coping (see Table 1). Their model was derived from their second order factor analysis.

Leisure coping. The Leisure Coping Belief Scale (LCBS; a dispositional measure of leisure coping) was used to assess people's beliefs that their leisure contributes to coping with stress, and the Leisure Coping Strategy Scale (LCSS; a situation-specific measure of leisure coping) was used to assess the extent to which leisure pursuits specifically help people cope with stress (Iwasaki & Mannell, 2000a; see Table 1). Iwasaki and Mannell (2000a) provided evidence of the psychometric quality of both measures. For example, the results of their confirmatory factor analysis based on factor loadings, squared multiple correlations, and overall fit indices supported the dimensionality and factor structures of the construct for which the scale was developed.

Immediate coping outcomes. The immediate coping outcomes measured included: (a) coping effectiveness (the extent to which people's coping strategies are effective); (b) coping satisfaction (the extent to which they are satisfied with coping outcomes); and (c) stress reduction (the extent to which their stress levels are reduced; see Table 1). The coping satisfaction dimension is consistent with Folkman et al.'s (1986) measure of coping outcomes and Zautra and Wrabetz's (1991) measure of coping efficacy, and the coping effectiveness dimension follows Beehr and McGrath's (1996) and Aldwin and Revenson's (1987) measures of perceived coping effectiveness. Iwasaki (2001a) found evidence for psychometric properties of the scales, including the support for the internal structure of the construct for which the scale was developed using confirmatory factor analysis.

Analysis

First, means, standard deviations, and alpha reliability coefficients of the measures were calculated, and descriptive analyses were performed to obtain correlation coefficients between each of the measures used. Then, hierarchical regression analyses were carried out to examine the effects of the various types or dimensions of leisure coping on immediate coping outcomes and physical and mental health above and beyond the impact of general coping. Three regression models were developed and tested to predict three dependent variables, namely, immediate coping outcomes, physical health, and mental health. For the prediction of immediate coping outcomes, physical and mental health at Time 1 were entered into a regression model at the first step to take into account individual differences in initial health status. Then, stress levels were entered into the model at the second step, followed by general coping dimensions at the third step, and then scores on the leisure coping dimensions were entered at the fourth and final step. This hierarchical regression procedure allowed us to test the effects of leisure coping on immediate coping outcomes when the influences of initial health status, stress levels, and general coping were taken into account. The same procedure was used for the prediction of physical and mental health at Time

3, except that the corresponding physical or mental health measure at Time 1 was used at the first step. All the analyses were carried out using the data from 132 participants who completed all of the three stages.

Results

Descriptive Statistics

Table 2 presents correlation coefficients, descriptive statistics, and alpha reliability coefficients of the measures used. As expected, all of the dependent variables (immediate coping outcomes, physical health, and mental health) were significantly correlated with each other, and all were negatively and strongly correlated with stress levels. Five of the six statistically significant correlations between general coping dimensions and the dependent variables were *negative*. Social support and emotion-focused coping were negatively correlated with mental health at Times 1 and 3, and disengagement coping was negatively correlated with mental health at Times 1 and 3 and with immediate coping outcomes. The only positive and significant correlation was between acceptance, restraint, and positive reframing and physical health at Time 1.

In contrast, all of the twelve statistically significant correlations between the leisure coping dimension scores and the dependent variables were *positive*. Self-determination disposition, leisure friendship, and leisure empowerment were positively correlated with physical and mental health at Time 1, whereas leisure palliative coping and leisure companionship were positively correlated with immediate coping outcomes. Leisure mood enhancement was positively correlated with all of the dependent variables except physical health at Time 3. Interestingly, all of the general coping dimensions were significantly and *positively* correlated with stress levels, whereas leisure friendship was significantly and *negatively* correlated with stress levels. These results appear to imply the potential of leisure coping as a predictor of positive coping outcomes over and above the contributions of general coping to be reported in the subsequent regression analyses.

The correlation coefficients between the leisure coping dimension scores (beliefs and strategies) and general coping dimensions ranged from .01 to .35, and only twelve of the twenty-four correlations (50%) were statistically significant. These results seem to demonstrate the discriminant validity of the Leisure Coping Belief Scale (LCBS) and Leisure Coping Strategy Scale (LCSS) relative to general coping measured by the COPE inventory. The measures used in the present study showed moderately high to very high alpha reliability coefficients. The total alpha reliability coefficients of the LCBS and LCSS were .94 and .91, respectively, and the total alpha reliability coefficient of immediate coping outcomes was .91.

While overall stress levels averaged 2.95 on an 11-point Likert-type scale (0 = "did not occur" to 10 = "extremely stressful"), the participants appeared to experience higher levels of role strain (mean = 4.48) and interpersonal stressors (mean = 3.43) than other dimensions (health-related

TABLE 2
Correlation Coefficients, Descriptive Statistics, and Alpha Reliability Coefficients of Measures Used

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Health (1-4)																
1. Physical health (Time 1)																
2. Physical health (Time 3)	.74*															
3. Mental health (Time 1)	.57*	.41*														
4. Mental health (Time 3)	.35*	.47*	.77*													
5. Immediate coping outcomes	.21*	.22*	.44*	.49*												
6. Stress levels	-.41*	-.49*	-.51*	-.62*	-.44*											
General Coping (7-10)																
7. Problem focused coping	.02	-.17	.08	.10	.12	.30*										
8. Social support & emotion-focused coping	.07	.01	-.22*	-.37*	-.13	.33*	.51*									
9. Acceptance, restraint, & positive reframing	.21*	.09	-.05	-.12	.19	.22*	.73*	.51*								
10. Disengagement coping	-.14	-.13	-.37*	-.38*	-.30*	.46*	.23*	.40*	.37*							
Leisure Coping Beliefs (11-13)																
11. Self-determination disposition	.23*	.12	.24*	.15	.08	-.16	.17	.21*	.27*	-.01						
12. Leisure friendship	.26*	.16	.30*	.19	.20	-.26*	.01	.14	.24*	-.03	.56*					
13. Leisure empowerment	.32*	.18	.27*	.17	.08	-.15	.12	.19	.32	.01	.78*	.68*				
Leisure Coping Strategies (14-16)																
14. Leisure palliative coping	.11	.11	.04	.16	.24*	.06	.27*	.28*	.26*	.27*	.30*	.22*	.33*			
15. Leisure companionship	.13	.07	.13	.09	.21*	-.05	.30*	.35*	.21*	.25*	.32*	.30*	.33*	.72*		
16. Leisure mood enhancement	.23*	.11	.41*	.32*	.42*	-.18	.19	.09	.22*	-.09	.46*	.44*	.49*	.56*	.50*	
Means	4.30	4.31	4.08	4.13	4.79	2.95	2.85	2.26	2.72	1.51	5.50	5.19	5.31	4.45	4.62	5.29
Ranges of measures	1-5	1-5	1-5	1-5	1-7	0-10	1-5	1-5	1-5	1-5	1-7	1-7	1-7	1-7	1-7	1-7
Standard deviations	.52	.51	.71	.72	.89	1.98	.77	.81	.72	.41	.77	.62	.81	.88	.91	.83
Alpha reliability coefficients	.94	.91	.89	.88	.91	a	.88	.91	.86	.78	.76	.90	.89	.86	.85	.83

Note: * $p < .05$; ^aNo alpha reliability coefficient for stress levels is reported because individuals likely experience different types of stressors at varied degrees (i.e., the dimensions of stressors are not expected to be internally consistent).

stressors, mean = 1.92; environmental stressors, mean = 2.50; and traumas, mean = 1.10). These results might be influenced by the fact that fewer respondents experienced traumas ($n = 69$) and health-related problems ($n = 85$) than role strain ($n = 129$) and interpersonal problems ($n = 116$).

Hierarchical Regression

As expected, according to the hierarchical regression analyses (see Table 3), health at Time 1 strongly predicted the dependent variables in all three regression models. After "controlling" for baseline health status, stress levels, and general coping, leisure coping was found to significantly predict the dependent variables in all three models. Overall, 13% of the variance in predicting immediate coping outcomes was uniquely explained by leisure coping when health at Time 1, stress levels, and general coping were taken into account (see Model 1 in Table 3). Also, 4% and 5% of the variance in predicting physical and mental health, respectively, was uniquely explained by leisure coping when the corresponding health measures at Time 1, stress levels, and general coping were controlled for (see Models 2 and 3 in Table 3). In contrast, general coping significantly predicted only two of the three dependent variables. The effects of general coping on mental health were not statistically significant.

With respect to the impact of the coping processes reflected by the coping dimension scores, regression analysis revealed that acceptance, restraint, and positive reframing combined were related to better immediate coping outcomes. The use of leisure for mood enhancement and palliative coping significantly predicted better immediate coping outcomes above and beyond the effects of general coping (see Model 1 in Table 3). Problem-focused coping was significantly associated with lower levels of physical health. This unexpected finding may be explained by the idea that individuals might use problem-focused coping in response to high levels of stress experienced, which could consequently have a negative impact on physical health. Those individuals who believed they were highly empowered by their leisure tended to report better physical health after the effects of general coping were taken into account (see Model 2). Finally, the use of leisure for palliative coping and companionship significantly predicted good mental health over and above the effects of general coping (see Model 3).

Discussion

The present study provides empirical evidence that leisure coping is positively related to both the short- and longer-term outcomes of stress coping above and beyond the contributions of general coping. Leisure coping significantly and positively predicted both immediate coping outcomes (coping effectiveness, coping satisfaction, and stress reduction) as well as longer-term outcomes (physical and mental health), whereas the effects of general coping were found to be significant and positive in predicting only imme-

TABLE 3
Hierarchical Regression in Predicting Coping Outcomes

(Model 1) Immediate coping outcomes at Time 2:

Predictors	R^2_{Total}	R^2_{Change}	β
Step 1: Health at Time 1	.38	.38	
Physical health			.04*
Mental health			.60
Step 2: Stress	.40	.02*	-.17*
Step 3: General coping	.54	.14	
Acceptance, restraint, & positive reframing			.30
Step 4: Leisure coping	.67	.13	
Leisure mood enhancement			.22
Leisure palliative coping			.21

(Model 2) Physical health at Time 3:

Predictors	R^2_{Total}	R^2_{Change}	β
Step 1: Physical health at Time 1	.57	.57	.75
Step 2: Stress	.61	.04	-.22
Step 3: General coping	.66	.05	
Problem-focused			-.20
Step 4: Leisure coping	.70	.04	
Leisure empowerment			.24

(Model 3) Mental health at Time 3:

Predictors	R^2_{Total}	R^2_{Change}	β
Step 1: Mental health at Time 1	.63	.63	.79
Step 2: Stress	.69	.06	-.29
Step 3: General coping	.71	.02*	
Step 4: Leisure coping	.76	.05	
Leisure palliative coping			.27
Leisure companionship			.19

Note: All of the sub-dimensions of general coping and leisure coping were entered to each of the regression models at Steps 3 and 4, respectively. Only statistically significant effects of these sub-dimensions are reported in the table. All R^2_{Change} and β s reported are statistically significant at the .05 level unless marked with * indicating non-significance.

diating coping outcomes and physical health. It is worth emphasizing that mental health was significantly predicted only by leisure coping, not by general coping. These findings highlight the importance of leisure as a way of coping with stress even when the effects of general coping are taken into account. Given that stress and coping researchers have mostly ignored leisure for its coping potential, there still appears to be a great deal to discover about coping. This idea is supported by recent calls for a much broader approach to coping research (Folkman & Moskowitz, 2000; Lazarus, 1999). For example, non-leisure researchers Folkman, Moskowitz, Ozer, and Park (1997) have stressed that the study of positive meaningful events, including leisure, "promises to add substantially to our knowledge of how people cope with stress" (p. 312).

With respect to the effects of the processes represented by the leisure coping dimensions, four dimensions (i.e., leisure mood enhancement, leisure palliative coping, leisure companionship, and leisure empowerment) were found to significantly predict one or two of the coping outcomes examined above and beyond the contributions of general coping. The use of leisure for enhancing mood and facilitating palliative coping was related to coping effectiveness, satisfaction with coping, and stress reduction. In addition, the promotion of palliative coping and companionship through leisure was positively associated with mental health, and leisure empowerment with physical health. Given the conservative analytic approach used in the study (i.e., hierarchical regression), the statistically significant findings involving these four dimensions of leisure coping appear to be supported with some confidence. It is important to reiterate that the above effects of leisure coping were found to be statistically and uniquely significant when the contributions of health at Time 1, stress levels, and general coping dimensions were taken into account. Below, major findings of the study will be more thoroughly analyzed and discussed within the framework of the study's sample.

Police and emergency response service workers likely benefit from using their leisure to effectively regulate their moods. Conceptually, the use of leisure for mood regulation involves both the enhancement of positive moods and the reduction of negative moods (Iwasaki & Mannell, 2000a). This way of managing stress through leisure tends to be perceived by these workers to be effective, to help reduce stress, and to produce satisfactory outcomes (i.e., immediate coping outcomes), as suggested by the findings of the present study. Given that those workers constantly experience high stress levels in their employment, family, and personal lives, the use of leisure for mood regulation appears essential not only for managing stressful events involving emotional disturbance (e.g., daily hassles), but also for coping with stressful encounters central to their lives (e.g., work and family stressors). The importance of regulating one's moods as an effective coping strategy is demonstrated in Mearns and Mauch's (1998) study of police officers. They found that having strong expectancies for effectively regulating one's moods

buffered the negative effects of occupational stress associated with police work, and was related to lower levels of anger and distress.

However, we did not find significant effects of leisure mood enhancement on physical and mental health. It may be assumed that the use of leisure for mood enhancement tends to provide an immediate or short-term impact on those workers, not a longer-term impact on their health. Other types of coping resources or strategies might have stronger effects on their health. Nevertheless, it is worth emphasizing that the regulation of moods through leisure seems to be an effective way to help reduce stress levels for highly stressed groups of individuals such as police and emergency response service workers.

In their repeated assessment field-study, Iwasaki and Mannell (2000b) found that leisure mood enhancement played a mediating role in positively influencing mental health and psychological well-being when university students encountered academic stressors, and in contributing to better physical and mental health and psychological well-being when they dealt with interpersonal stressors. Iwasaki (2001b) tested an optimal matching hypothesis of coping and health and found that leisure mood enhancement facilitated positive coping outcomes in managing stressors including controllable stressful events and stressful events damaging one's self-esteem. The significance of the findings from the present study is that the effects of various general coping strategies were taken into account in the analyses, whereas such effects were not included in the past studies briefly reviewed above. Along with the inclusion or non-inclusion of general coping, the different nature of the samples used might be attributed to somewhat different findings among those studies, specifically, the effects of leisure mood enhancement on health.

Another important finding is that the use of leisure as a palliative coping strategy provides stress-coping benefits for police and emergency response service workers. Leisure keeps their minds and bodies busy and allows them to temporarily escape from stressors. Conceptually, the use of leisure for palliative coping provides opportunities to feel refreshed and to psychologically and behaviorally regroup to better handle stressors (Iwasaki & Mannell, 2000a). These workers' lives are filled with stress due to their highly demanding work responsibilities and subsequent stressors associated with their family and personal lives (Anshel, 2000; Violanti & Paton, 1999). "Juggling" work, family, and personal lives could be very stressful experiences, whereas it has been found that police officers show a preference for balancing the demands of work and home to cope with occupational stress involving routine police work (Biggam et al., 1997). In order to effectively deal with these constant stressors, police and response service workers need to occasionally breathe from stressors, to gain renewed energy and perspective, and to restore disrupted patterns of their lives caused by the stressors (Kleiber, 1999). Leisure seems to provide them with opportunities for these purposes. The use of leisure in this way appears to facilitate coping effectiveness, stress reduction, and coping satisfaction (i.e., immediate coping outcomes), as well

as to promote mental health. Similarly, Iwasaki and Mannell (2000b) found that leisure palliative coping mediated the effects of academic stressors to help university students maintain good mental health and psychological well-being. According to Iwasaki's (2001b) study, leisure palliative coping facilitated the reduction of stress when the participants dealt with uncontrollable or less controllable stressful events. Again, unlike the present study, these studies above did not take into account the contributions of various general coping strategies; thus, implying the significance of the present findings.

Another useful coping strategy through leisure involvements for police and emergency response workers is the use of leisure for companionship. Leisure provides them with opportunities to socialize with others. Socialization through leisure is a form of social support which consequently has positive consequences on their mental health, as suggested by the findings of the study. The important role of social support in effectively dealing with stress has been shown in past studies on police officers, fire fighters, and paramedics. For example, Harvey-Lintz and Tidwell (1997) found that seeking social support had an inverse relationship with levels of posttraumatic stress disorder (PTSD) symptomatology of law enforcement officers in the Los Angeles Police Department who were assigned to a major riot area. Similarly, according to Beaton et al.'s (1997) study of fire fighters and paramedics, perceived social support was strongly correlated with job satisfaction and work morale.

The use of leisure for companionship seems to have important implications for police and emergency response workers, given their limited time available with their families and significant others. These workers tend to highly value spending quality time with their family members and significant others due to their extensive and demanding responsibilities at work and to their needs for balancing their lives (including the need for enjoying non-work lives). Leisure may provide opportunities for this purpose, and the engagement in social leisure could be enjoyable and rewarding and help them maintain and develop healthy relationships with others. The finding of the present study is consistent with a result of Iso-Ahola and Park's (1996) study. They found that leisure companionship helped Taekwondo practitioners better manage life stress and maintain good mental health. Given that the nature of the samples differed between Iso-Ahola and Park's study and the present study, the findings seem to provide relatively strong evidence for leisure companionship as an effective way of managing stress and promoting mental health.

Furthermore, the present findings suggest that police and emergency response service workers benefit from using leisure as a means of feeling empowered, and of developing psychological resources (e.g., perceived control and positive attitudes toward life) for better managing stress (i.e., leisure empowerment). Given the necessity of "being ready" for emergencies all the time by these workers, they do not appear to have a sufficient opportunity for experiencing personal control and freedom over their work. In fact, in his study of 233 male and female police officers, Patterson (1999) found that

these officers tended to appraise stressful occupational events which originated within the organizational structure of the police department as unchangeable. Thus, their leisure time may become very important to foster fundamental human qualities such as a sense of personal control and freedom. Leisure can provide them with contexts where perceived control and freedom are experienced (Mannell & Kleiber, 1997), which consequently helps them develop a sense of empowerment and positive attitudes toward their lives. Particularly for highly stressed individuals such as police and emergency response service workers, these qualities (i.e., perceived control and freedom, a feeling of empowerment, and positive attitudes toward life) may be essential to effectively manage stressors, some of which could be highly excessive and traumatic (e.g., to have life-threatening experiences, to witness deaths of humans and dark sides of society; Harvey-Lintz & Tidwell, 1997; Violanti & Paton, 1999). The development of these qualities through leisure pursuits seems to be an important benefit of leisure for them. Then, these qualities appear to have positive consequences on their physical health, as suggested by the present study. That is, it could be assumed that perceived control and freedom, a feeling of empowerment, and positive attitudes toward life might mediate the effects of leisure empowerment on physical health. It has been shown that perceived control (Lefcourt, 1991), hardiness (Kobasa, 1979), sense of coherence (Antonovsky, 1987), and optimism (Carver & Scheier, 1981) have positive associations with health. Since a sense of empowerment and positive attitudes toward life are bases of these concepts, the aforementioned qualities might be key mechanisms linking leisure empowerment to physical health. Thus, unlike the use of leisure for mood enhancement, leisure empowerment may have a positive longer-term impact on physical health, as opposed to an immediate coping impact, for highly stressed groups of individuals such as police and emergency response service workers.

Using a university student population group, Iwasaki and Mannell (2000b) found that "the stronger the leisure empowerment beliefs of participants, the lower the mental illness and higher psychological well-being they reported" (p. 48). Also, Iwasaki (2001b) found that leisure empowerment significantly predicted positive coping outcomes in dealing with four of the five major types of recent stressful events reported. Although these studies did not consider the effects of general coping strategies, the findings to support the role of leisure empowerment as a stress-coping resource in those studies and the present study (which used different population groups) seem to provide some validity for the notion of leisure empowerment as a key dimension of leisure coping. However, the different impact of leisure empowerment on various coping outcomes among these studies may suggest that the contribution of leisure empowerment to managing stress could be population-specific and/or situation-specific. Unique characteristics and life situations of the populations studied might be factors for these different and somewhat inconsistent findings.

Implications and Future Research Perspectives

Many individuals experience high levels of stress in their lives (McBride-King & Bachmann, 1999; Robinson & Godbey, 1997; Zuzanek, Robinson, & Iwasaki, 1998), and the experience of stress potentially has detrimental effects on one's health (e.g., Avison & Gotlib, 1994; Goldberger & Breznitz, 1993; Kaplan, 1996; Lazarus, 1993). Thus, a better understanding of the various ways to manage stress has important implications for health promotion and intervention. Recent studies on leisure and coping that used general populations (e.g., Caltabiano, 1994; Coleman, 1993; Patterson & Coleman, 1996) and specific populations (e.g., Taekwondo practitioners, Iso-Ahola & Park, 1996; university students, Iwasaki, 2001a; police and emergency response service workers; the present study) have begun to provide evidence that certain aspects of leisure may be conducive to coping with stress and maintaining good health. When a series of studies on leisure coping build a coherent set of knowledge about the specific ways in which leisure contributes to dealing with stress, this knowledge can be used as a guideline for developing health promotion and intervention programs where stress management is an important component.

For example, these programs might focus on the use of leisure for palliative coping to assist individuals under stress in better managing the stress. Those programs could combine both educational and behavioral components. First, the programs could educate individuals about the ways in which palliative coping through leisure operates (i.e., to have a break from stressors through leisure to restore one's energy and perspective and better deal with the stressors). Also, these programs might help develop skills allowing individuals to identify and schedule their leisure activities that are likely to provide such effects. Although training techniques for strengthening coping skills have been identified as important components of psychosocial interventions (e.g., Horowitz, Znoj, & Stinson, 1996; Sobel, 1995; Zeidner & Saklofske, 1996), both researchers and practitioners have paid little attention to the potential of leisure as a significant element of stress management programs. As shown by Trenberth et al. (1999), it is important to consider both the active, challenging nature of leisure and the passive, recuperative nature of leisure. They examined the role of leisure as a strategy for coping with work stress among 695 principals of secondary schools in New Zealand, and found that the passive, recuperative nature of leisure is more important than the active, challenging nature of leisure for coping with work stress. "These results have implications for those involved in workplace health promotion where the emphasis thus far has been on physical activity and fitness" (Trenberth et al., 1999, p. 89). Of course, it is important to recognize unique characteristics of target populations when developing stress management programs. Given the specific nature of the sample used in this study, further efforts are needed to examine stress coping processes through leisure using different population groups.

In addition, the present study provides evidence that leisure coping is distinguishable in terms of both measurement and effect from general coping. The correlation coefficients between the dimension scores of leisure coping and the dimension scores of general coping reported in this study lend support to the discriminant validity of the LCBS and LCSS in comparison to general coping measured by the COPE inventory. Consequently, the study shows the usefulness of Iwasaki and Mannell's (2000a) leisure coping scales (i.e., LCBS and LCSS) within the context of general coping.

The findings of the present study should be interpreted carefully because workers of police and emergency response services represent a unique population group due to their special work situations and lifestyles (Violanti & Paton, 1999). Also, the majority of the respondents were male (82.6%), although this sex ratio appears to reflect the male-dominant nature of this occupation. Thus, generalizability of the findings beyond this occupational group is clearly limited. However, as shown earlier, most of the findings in the study are in fact consistent with ones of the past studies on leisure and coping that used different population groups (i.e., university students and Taekwondo practitioners), which support some validity of the dimensions of leisure coping proposed by Iwasaki and Mannell (2000a). At the same time, it is important to recognize the different impact of leisure coping dimensions on various coping outcomes. As pointed out earlier, the effects of leisure coping could be population-specific and/or situation-specific.

Another strength of the study is the use of a short-term longitudinal design. It allows us to put greater confidence in the causal relationships found than would the use of a cross-sectional design. Having said this, it should be noted that this study still used a type of retrospective approach to the assessment of the recent stressors experienced, coping strategies used, and immediate coping outcomes. A more prospective repeated-assessment design that had study participants record their experiences of stress and coping daily would be useful for examining the operation of stress and coping processes (e.g., Iwasaki & Mannell, 2000b; Tennen et al., 2000; Stone et al., 1999).

Obviously, further theoretical and methodological developments are still needed to advance the leisure coping research. One area that needs to be given greater attention is examining the complex nature of the relationship between stress coping and health. Specifically, it is important to identify and examine the moderating and/or mediating variables that may influence such relationships. With regard to moderating effects, it has been reported that personality and attitudinal characteristics and people's life circumstances influence the ways in which people use leisure to cope with stress (e.g., Iwasaki & Smale, 1998; Patterson & Coleman, 1996; Zuzanek et al., 1998). Also, process models that specify the variables that mediate the influence of stress and coping on health need to be constructed and examined. It appears necessary to take into account the way in which individuals appraise the specific stressors they experience (i.e., event appraisal) and their emotions (e.g., Lazarus, 1991, 1999). For example, Iwasaki and Mannell (2000b) made a start in this

direction by testing several models of leisure and health including direct effects, indirect effects, buffer effects, and process models, and found stronger evidence for direct and indirect effects and process models than for buffer models.

Another important inquiry involves an examination of stress and coping along major dimensions of society such as gender, age, social class, and race/ethnicity. The meanings and sources of stress may differ according to these dimensions, whereas individuals with different characteristics may have different ways of effectively coping with stress that is unique to their life circumstances. For instance, Iwasaki, Zuzanek, and Mannell's (2001) analyses of Canada's 1994 National Population Health Survey ($n = 17,626$) suggested that (a) the relationship between physically active leisure and health indicators (i.e., physical and mental health, and psychological well-being) was stronger for women than for men, and (b) the same relationship was stronger for older age groups than for younger age groups. "Women and older people appear to be important target groups for program and policy development to educate people about and promote the importance of physically active leisure to enhance good health in their lives" (Iwasaki et al., 2001, p. 218).

There are other important questions that need to be examined in future research on leisure coping. For example, are there better ways of conceptualizing the role of leisure as a coping resource and/or strategy than Coleman and Iso-Ahola's (1993) model of leisure and health and Iwasaki and Mannell's (2000a) hierarchical model of leisure coping? Does the type of leisure participation (e.g., physically active leisure, social leisure, cultural leisure, relaxing leisure) matter in predicting better coping outcomes and health? Does leisure coping have short and long-term impacts on the health and well-being of individuals under stress? Can the leisure coping process be generalized to a wide range of population groups? How do marginalized groups of people (e.g., Aboriginal people) consider and use leisure as a way of coping with stress? In conclusion, this study has demonstrated the importance of giving greater attention to both leisure coping and general coping in research on stress coping and health, and the approach adopted appears to have the potential to further facilitate a better understanding of the coping process.

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