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Kim, Junhyoung; Kim, Jaehyun; Lee, Chungsup; and Kil, Namyun, "Investigating the relationships among leisure, coping, and personal growth among people with physical disabilities" (2021). *University Faculty Publications*. 143.

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**ARTICLE**

## Investigating the Relationships among Leisure, Coping, and Personal Growth among People with Physical Disabilities

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Received: 26 February 2021 Accepted: 23 June 2021

### ABSTRACT

Little information exists with regard to the relationship between leisure and coping mechanisms among people with physical disabilities. The purpose of this study is to investigate the relationships among leisure, coping, and personal growth among people with physical disabilities living in the U.S. Using a purposive sampling strategy, 121 participants completed all 3 instruments: assessment of leisure and recreation involvement, coping strategy indicator, and personal growth. Frequency, descriptive analysis, Pearson correlations, and path analysis were utilized to test the relationship between leisure involvement, coping strategies, and personal growth. There were statistically significant direct effects of leisure involvement and avoidance-withdrawal coping strategies on personal growth. The effects of social support seeking coping strategies and problem-solving coping strategies on personal growth were not statistically significant. Results also indicated that leisure involvement had significant direct effects on social support seeking, avoidance-withdrawal, and problem-solving coping strategies. The results demonstrated that leisure engagement was associated with coping strategies and personal growth. In particular, leisure engagement had direct effects on problem-solving coping, social seeking coping, and avoidance/withdrawal coping as well as a direct effect on personal growth.

### KEYWORDS

Leisure; coping; mental health; personal growth; physical disability

## 1 Introduction

People with physical disabilities tend to experience psychological adversities, such as depression, anxiety, and disrupted social relationships, which can cause diminished life satisfaction and mental health [1,2]. The coping literature emphasized the importance of effective strategies for dealing with stressful life events as they can support mental health and wellbeing [3,4]. Prior studies demonstrated that the use of active or passive forms of coping are strongly associated with the psycho-social health of individuals with physical disabilities [5,6]. When people with physical disabilities overcome conditions of extreme adversity, they can



realize their potentialities and experience positive psychological well-being. Such feelings of continued development after a major life crisis or a traumatic event has been defined as personal growth.

In addition, effective coping strategies have been found to be positively associated with the experience of personal growth among people who experience traumatic life events [7–9]. Empirical evidence demonstrated a clear relationship between the experience of personal growth and the ability to manage and resolve stress, anger, and anxiety and the experience of personal development and self-understanding [10,11]. In physical rehabilitation settings, therapists have established personal growth as a major rehabilitation goal [12]. In a meta-analysis of factors contributing to personal growth among people with traumatic life experiences, Prati et al. [13] found that coping strategies such as social support, religious coping, acceptance, and positive appraisal predicted the experience of personal growth.

Leisure researchers suggested that participation in leisure activities plays an important role in coping with stress and improving health [14,15]. Various types of leisure activities have been found to serve as a buffer against negative feelings and stressful life events among people with disabilities and illnesses [16]. These researchers highlighted the role of leisure as a means of coping with stressful events for people with disabilities and illnesses, who, as a result, experience increased quality of life and health. In a recent study, Han et al. [17] investigated the relationships among types of leisure, coping, and social support among Korean individuals with physical disabilities. They found that engagement in social activities, physical activities, and outdoor activities were a strong predictor of effective coping strategies.

Other studies also demonstrated that leisure facilitates the experience of personal growth, including an appreciation of life, spiritual growth, discovery of meaningful life, and meaningful relationships with others [18,19]. For example, Chun et al. [20] conducted a qualitative study that captured personal growth of people with spinal cord injury and found that participants discovered their inner strengths, developed meaningful relationships with others, and increased positive feelings and emotions through leisure. In addition, Kim et al. [12] concluded that participation in leisure activities was positively associated with personal growth among people with physical disabilities.

Based on the demonstrated benefits of leisure for coping and personal growth, there is a need to further investigate the effects of leisure on the coping strategies and personal growth of people with physical limitations. Previous studies that explored the role of leisure in personal growth have mainly used qualitative methodologies, which provide descriptive but limited information on how it is associated with personal growth among particular groups such as older adults and people with spinal cord injury [18–20]. Also, little information exists with regard to the relationship between leisure and coping mechanisms among people with physical disabilities. Thus, the purpose of this study was to investigate the relationships among leisure, coping, and personal growth among people with physical disabilities living in the U.S. To conceptualize coping, this study incorporated three types of coping strategies proposed by Amirkhan [21]: problem-solving coping, social support coping, and avoidance/withdrawal. This typology has been widely applied in rehabilitation studies [17,22]. Thus, the present study addressed the following research hypotheses:

H1: Leisure involvement has a direct positive effect on personal growth among individuals with physical disabilities.

H2: Leisure involvement has a direct positive effect on the use of coping strategies among individuals with physical disabilities.

H3: The use of coping strategies has a direct positive effect on personal growth among individuals with physical disabilities.

## 2 Leisure, Coping, and Personal Growth

Folkman et al. [23] defined coping as a “person’s cognitive and behavioral efforts to manage (reduce, minimize, master, or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person’s resources” (p. 572). A coping response model developed by Lazarus et al. [3], which is considered to be the most widely accepted coping model, identifies two main types of coping responses: problem-focused coping and emotion-focused coping. Problem-focused coping involves direct and active efforts to confront and solve problems, whereas emotion-focused coping involves passive emotional responses to the problem. To these main types, Folkman et al. [24] added a third construct, seeking social support, as an important category of coping strategies.

Amirkhan [21] also identified the constructs of coping strategies as problem solving, social support seeking, and avoidance/withdrawal. In this model, problem solving involves a direct, instrumental, and active response to stressors. Social support seeking reflects individuals’ basic need to rely on others for comfort, advice, help, or simple contact. Avoidance is purposeful physical or psychological withdrawal (e.g., through fantasy or distraction) from stressors. These coping strategy dimensions have been used with various populations, including psychiatric in-patients with personality disorders [25] and spouses of depressed patients [26].

Leisure scholars suggested that leisure helps people with disabilities and illness deal with their stress by fostering positive social interactions with others, inducing positive feelings and emotions, and enabling them to relax [20,27]. In these studies, qualitative methodologies were used to investigate the coping resources and personal growth through leisure engagement of people with disabilities. For example, Stephens et al. [28] found that leisure helped people with spinal cord injury experience positive social engagement, motivate individuals to overcome challenges, and gain emotional relief from their stressors.

In addition, Rogers et al. [29] found that non-discharged military personnel with disabilities (e.g., spinal cord injury, knee amputations, and traumatic brain injury) who engaged in recreation activities (e.g., skeet shooting, archery, fishing) experienced a sense of social community, self-awareness, regained energy for life, and escaped from daily stressors, which fostered and maintained personal growth. In a study of the subjective wellbeing of a group of breast cancer survivors who climbed mountains as their committed leisure activity, Burke et al. [19] found that they experienced a sense of empowerment as they overcame challenges associated with mountain climbing, developed coping strategies, and increased their coping skills for dealing with other challenges.

In an international context, Han et al. [17] found that social and outdoor activities were strong predictors of coping strategies among Korean individuals with physical disabilities by providing opportunities to gain social support and actively deal with stressors. In addition, Kim et al. [30] provided evidence that personal growth served as a predictor of life satisfaction and happiness for Korean individuals with physical disabilities, which in turn could lead to particular health benefits. In addition, Barskova et al. [31], in a review of longitudinal studies of the relationship between posttraumatic growth and health benefits, found that the physical and mental health of people who achieved high levels of posttraumatic growth significantly improved.

## 3 Methods

### 3.1 Sample and Procedure

In this study a purposive sampling strategy was used to recruit participants who were at least 18 years old and diagnosed with any type of physical disability. The research team contacted the directors of physical rehabilitation centers and facilities and with their permission placed flyers containing a brief description of the study on their notice boards. Those interested in participating were asked to contact the research team by email or phone, and we collected their data via a self-administered paper-pencil survey at the

sites from January 2019 to July 2019. Each participant took approximately 15 min to complete the survey. Out of 185 surveys completed those with unmarked responses were excluded, leaving a total of 122 surveys for analysis which is 65.9% response rate. The Institutional Review Board of the sponsoring university approved the study, and participation in the study was voluntary.

Table 1 provides an overview of the participants' demographic characteristics. Of the 122 participants, 80.3% were male, and 19.7% were female. The participants' ages ranged from 18 to over 70 years. With regard to levels of education, 28.7% had completed high school, 55.5% had graduated and attended college, and 6.6% held master's or professional degrees. In terms of marital status, 37.7% were married, 13.9% were divorced, 41% were single, and 7.4% were widowed.

**Table 1:** Demographics of the sample

Characteristics	<i>N</i>	%
Age		
18–29	26	21.3
30–39	27	22.1
40–49	19	15.6
50–59	14	11.5
60–69	13	10.7
70 and over	28	18.9
Gender		
Male	98	80.3
Female	24	19.7
Education		
Middle school graduate	6	4.9
High school graduate	35	28.7
Some college, no degree	33	27.0
College graduate	35	28.7
Graduate college	8	6.6
Other	5	4.1
Marital status		
Married	46	37.7
Divorced	17	13.9
Single	50	41.0
Widowed	9	7.4

### 3.2 Measures

#### 3.2.1 Leisure Involvement

We measured leisure involvement with four modified items from the Assessment of Leisure and Recreation Involvement [32]. Examples of items include “I am willing to devote mental and/or physical effort to master my preferred leisure activities” and “For my preferred leisure activities, I am willing to invest my money, time, and energy.” The items were assessed on a 5-point Likert-type scale

(1 = “strongly disagree” to 5 = “strongly agree”). The responses to the items were summed and divided by the total number of items, so higher average scores indicated higher levels of leisure involvement. This scale yielded a Cronbach’s  $\alpha$  of 0.90 in the present study.

### 3.2.2 Coping Strategy Indicator

Coping strategies were measured using three components of coping strategy indicators: social support seeking, avoidance-withdrawal, and problem solving [21]. Respondents were asked to rate their degree of utilization of the coping strategy in each of the 11 items, and all items were assessed on a 3-point Likert scale (1 = “not at all”, 2 = “a little”, and 3 = “a lot”). Examples of social support seeking items include “When I am in trouble, I describe my feeling to a friend” and “For me, life has been a continuous process of learning, changing, and growing.” An example of an avoidance-withdrawal item is “When I am in trouble, I try to distract myself from the problem,” and of a problem-solving item, “When I am in trouble, I rearrange things so my problem can be solved.” The points were summed and divided by the total number of items, with higher average scores indicating more use of each coping strategy. Cronbach’s alpha values for social support seeking, avoidance-withdrawal, and problem-solving were 0.90, 0.89, and 0.91, respectively.

### 3.2.3 Personal Growth

We derived seven items specific to measurement of personal growth from the scale of Psychological Well-being [33]. Respondents were asked to rate their overall experience of personal growth on each of the 7 items using a 7-point Likert scale (1 = “very strongly disagree” to 7 = “very strongly agree”). Examples of items included “I have the sense that I have developed a lot as a person over time” and “For me, life has been a continuous process of learning, changing, and growing.” Higher scores for each item indicated greater personal growth. Cronbach’s alpha for the personal growth of this scale was 0.80.

## 3.3 Data Analysis

Using SPSS Version 18.0, descriptive statistics were generated for demographics and study constructs. Cronbach’s alpha coefficients were used to measure internal consistency for all variables. We computed Pearson correlation coefficients to examine the bivariate associations of all variables with the dependent variable. Path analysis using AMOS was performed to test the hypothesized model presenting the relationship between leisure involvement, coping strategies, and personal growth. Due to their potential effects on personal growth levels among people with physical disabilities, in this study age, gender, education, and self-rated health were control variables. We used four fit indices (i.e.,  $\chi^2$  statistic, SRMR, RMSEA, CFI) to assess the model fit.

## 4 Results

Descriptive statistics were used to show respondents’ characteristics with regard to age, gender, education, and self-rated health (Table 1). Table 2 shows mean scores and standard deviations for all study variables.

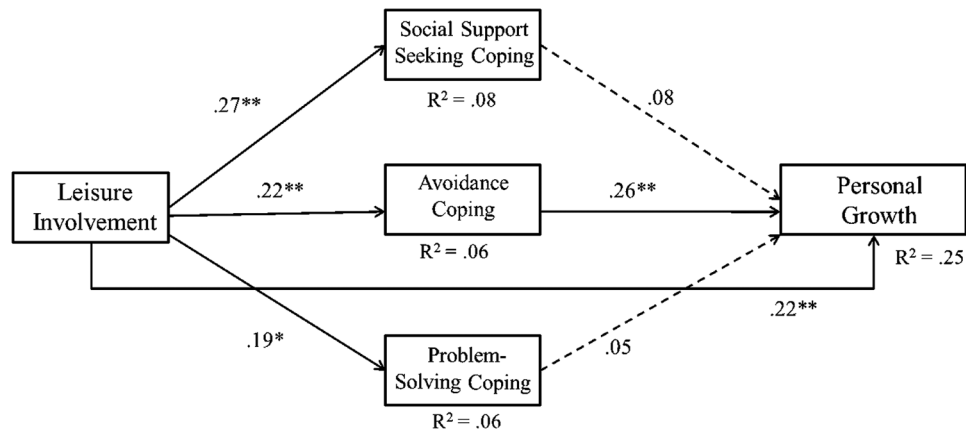
Among individuals with physical disabilities, personal growth was significantly associated with leisure involvement ( $r = 0.25, p < 0.05$ ) and social support seeking ( $r = 0.39, p < 0.05$ ), avoidance-withdrawal ( $r = 0.41, p < 0.05$ ), and problem-solving coping strategies ( $r = 0.35, p < 0.05$ ) (Table 3).

The model (Fig. 1) provided an acceptable fit ( $\chi^2(df = 10) = 6.845, p = 0.740$ ; RMSEA = 0.020; SRMR = 0.044; CFI = 0.998). There were statistically significant direct effects of leisure involvement ( $b = 0.22, p < 0.05$ ) and avoidance-withdrawal coping strategies ( $b = 0.26, p < 0.05$ ) on personal growth. The effects of social support seeking coping strategies ( $b = 0.08, p > 0.05$ ) and problem-solving coping strategies ( $b = 0.05, p > 0.05$ ) on personal growth were not statistically significant.

**Table 2:** Means, standard deviations, and reliability for study variables

Variable	Individuals with physical disabilities		
	<i>M</i>	<i>SD</i>	Cronbach's $\alpha$
<b>Leisure Involvement</b>	4.04	0.96	0.90
<b>Coping Strategies</b>			
Social support seeking	1.94	0.62	0.90
Avoidance-withdrawl	1.87	0.59	0.89
Problem-solving	1.94	0.67	0.91
<b>Personal Growth</b>	4.07	0.99	0.80

Note: Leisure involvement and personal growth were assessed on a 7-point Likert scale (1 = “never” to 7 = “always”). Coping strategies were assessed on a 3-point Likert scale (1 = “not at all”, 2 = “a little”, and 3 = “a lot”).



**Figure 1:** Final path model with standardized path coefficients. Note: Dotted paths present the non-significant relationships at 0.05 level. \* $p \leq 0.05$ . \*\* $p \leq 0.01$ . \*\*\* $p \leq 0.001$

**Table 3:** Pearson correlations among leisure involvement, coping strategy indicators, and personal growth

Variable	1.	2.	3.	4.	5.
1. Leisure Involvement	1				
2. Social Support Seeking	0.26**	1			
3. Avoidance-Withdrawal	0.22**	0.55**	1		
4. Problem-Solving	0.20**	0.66**	0.45**	1	
5. Personal Growth	0.25**	0.39**	0.41**	0.35**	1

Note: \* $p < 0.05$ . \*\* $p < 0.001$ .

Results also indicated that leisure involvement had significant direct effects on social support seeking ( $b = 0.27, p < 0.05$ ), avoidance-withdrawal ( $b = 0.22, p < 0.05$ ), and problem-solving coping strategies ( $b = 0.19, p < 0.05$ ). Therefore, we confirmed that  $H^1$  and  $H^2$  were supported whereas  $H^3$  was partially supported (Table 4). Overall, the model accounted for 8% of the variation in social support seeking coping strategies, 6% of the variation in avoidance-withdrawal coping strategies, 6% of the variation in problem-solving coping strategies, and 25% of the variance in personal growth (Fig. 1).

**Table 4:** A summary of direct effects on personal growth and hypothesis testing

Dependent Variable and Path	$\beta$ (SE)	t-value	$R^2$	Hypothesis (Direct Effect)
<b>Personal Growth</b>			<b>0.25</b>	
Leisure Involvement → Personal Growth	0.22 (0.09)	2.50**	—	H1: Supported
SS (Coping 1) → Personal Growth	0.08 (0.22)	0.58	—	H3: NS
AW (Coping 2) → Personal Growth	0.26 (0.16)	2.73**	—	H3: Supported
PS (Coping 3) → Personal Growth	0.05 (0.18)	0.99	—	H3: NS
<b>Coping Strategies</b>			—	
Leisure Involvement → SS (Coping 1)	0.27 (0.06)	3.05**	0.08	H2: Supported
Leisure Involvement → AW (Coping 2)	0.22 (0.06)	2.44**	0.06	H2: Supported
Leisure Involvement → PS (Coping 3)	0.19 (0.06)	2.08*	0.06	H2: Supported

Note: Control variables include age, gender, education, and self-rated health. SS = social support seeking coping strategies; AW = avoidance-withdrawal coping strategies; PS = problem-solving coping strategies. NS = Not supported. \* $p \leq 0.05$ . \*\* $p \leq 0.01$ . \*\*\* $p \leq 0.001$ .

## 5 Discussion

In this study the relationships among leisure, coping, and personal growth among people with physical disabilities living in the U.S. were investigated. The results demonstrated that leisure engagement was associated with coping strategies and personal growth. In particular, leisure engagement had direct effects on problem-solving coping, social support seeking coping, and avoidance/withdrawal coping as well as a direct effect on personal growth. These results suggest that leisure engagement may provide opportunities for people with physical disabilities to deal with stressors and experience personal growth.

Leisure scholars [18–20] have used qualitative methodology to explore the role of leisure as a facilitator of personal growth. Dworkin et al. [10], for example, indicated that leisure involves personal development and understanding and the ability to cope with stressful life events. These studies have suggested that leisure can help people with disabilities and illnesses experience personal growth in such ways as discovery of personal strengths, formation of meaningful relationships, and increased positive emotions. The results of this study support a positive relationship between leisure and personal growth and suggest that people with physical disabilities may use leisure as a means to personal growth and coping strategies.

Prior studies have shown that people with disabilities and illnesses use leisure as a way of coping with stress and promoting health [14,16]. They highlight that leisure activities can help people with disabilities and illnesses deal with various life challenges and psychological distress. The results of this study expand the body of knowledge by showing that leisure is positively associated with coping strategies (e.g., problem-solving, social support seeking, and avoidance coping). These results show that leisure can be instrumental in developing various types of coping strategies among people with physical disabilities. In particular, this study suggests that leisure significantly influences social seeking coping, followed by avoidance and problem-solving coping. Previous studies supported the role of leisure as a way of seeking social support by showing that leisure helped people with disabilities form and develop friendships and receive positive social support from other participants and family members [34,35]. The present study provides evidence that social support achieved through leisure engagement can be an important coping strategy among people with physical disabilities.

The majority of previous studies have stressed the importance of problem-solving as a means of promoting health and wellbeing of people experiencing traumatic life events [7,8]. For example, Anneken et al. [36] concluded that problem-solving during physically active leisure was used as active coping among people with spinal cord injury. On the other hand, some studies have presented evidence that the



problem-solving coping strategy can be maladaptive and ineffective in dealing with stressors that cannot be changed or eliminated [37]. Considering the nature of the stressors associated with limited physical functioning, people with physical disabilities are aware of implacable challenges in efforts to reduce or eliminate problems. Given the mixed outcomes of the relationship between problem-solving coping and health, the results of this study support previous findings that problem-solving was not associated with personal growth. Moreover, the results of our study indicated that seeking social support seeking was not related to personal growth. This finding is inconsistent with a prior study [28] that found that leisure participation plays a significant role in facilitating positive social engagement and feelings of self-worth among people with spinal cord injury. Given the mixed findings, there is a need to clarify the relationship between social support seeking and personal growth among individuals with physical disabilities.

Avoidance coping has generally been identified as a maladaptive behavioral and cognitive response to life stress [38]. Nonetheless, some studies have found positive aspects of avoidance coping strategies in certain therapeutic contexts in that avoidance behaviors help people with mental disorders feel a sense of control especially during the initial stage of treatment [39–41]. In addition, people who often use avoidance coping strategies have been found to realize benefits, such as reductions in self-rated fear and greater increases in self-efficacy and perceived internal control [42,43]. In addition, avoidance coping may relate to intentional distraction through pleasant leisure activities. Intentionally distracting activities that are chosen by the participants and enjoyable in nature may serve as positive resource for people with life stress [44]. Kleiber et al. [45] noted that “pleasant distracting activities not only preoccupy and preempt negative thoughts; they also offer the prospect of reinterpretation of events as being something other than an inescapable emotional trap” (p. 323). Thus, the results of this study indicate that avoidance coping can contribute to personal growth in the context of leisure among people with physical disabilities.

Despite interesting results of this study, some methodological issues must be considered when interpreting the results. First, different types of physical disabilities of the participants in this study may have led to different levels of leisure involvement. Types of disabilities and different levels of leisure engagement are factors that might influence coping strategies and personal growth of people with physical disabilities. Future studies are needed to investigate how types of disabilities and different levels of leisure are associated with coping and personal growth. In addition, this study did not measure stress levels or differentiate types of stressors, which can affect leisure participation and coping strategies. It is recommended that future researchers investigate how different levels of stress and sources of stressors influence coping strategies and personal growth. Han et al. [17] have suggested that certain leisure activities are associated with coping mechanism. This study did not classify types of leisure that may influence coping and personal growth, suggesting the need for examining the relationship between types of leisure and coping and personal growth. Furthermore, as participation in this study was voluntary, the sample may represent those individuals with physical disabilities who were more active and had more positive feelings about their disabilities, or life in general and, thus, may not capture the true variation of the population with physical disabilities. Last, due to this study’s sample size (i.e.,  $N = 122$ ), one should exercise caution in generalizing the results. Investigating a cause-effect relationship among variables with a larger sample group can be beneficial for generalizations.

## 6 Implication and Conclusion

This study is an initial exploration of the relationships among leisure, coping, and personal growth among people with physical disabilities. Compared to people without disabilities, people with disabilities experience more challenges that may negatively affect their participation in leisure engagement such as physical barriers, negative social acceptance, low motivation, and a lack of leisure resources [46]. Based on the positive relationships among leisure, coping, and personal growth found in this study, recreational therapists and other activity professionals should strive to minimize challenges and barriers so that people

with physical disabilities can fully engage in leisure activities. For example, virtual reality programs can be helpful for people with physical disabilities to pursue meaningful leisure activities and deal with stress.

Other programs and activities may be created and implemented that are tailored to participants' needs and expectations. For example, a prior study [18] also found that social leisure activities (e.g., socializing with friends, eating out, family time) were effective in facilitating the use of coping strategies. Recreation programs and services, such as through social clubs and community-based social events, could provide contexts where individuals with physical disabilities can socialize and expand their social networks. This will in turn lead to personal growth by allowing them to actualize themselves and realize their potentialities. In Brown et al. [18], physical activity participation (e.g., exercise, sports) was associated with the use of the avoidance coping strategies among people with physical disabilities. Therefore, practitioners will need to develop and implement physical activity programs, such as community-based exercise programs, to increase the use of avoidance coping strategies, which will ultimately lead to personal growth.

Overall, this study contributes to the body of literature by providing evidence that leisure serves as an important coping strategy that may lead to personal growth among people with physical disabilities. In addition, this study offers practical implications for therapists and program designers with regard to the importance of providing leisure programs and activities for people with physical disabilities.

**Funding Statement:** The study is supported by Leisure Research Institute at Indiana University.

**Conflicts of Interest:** The authors declare that they have no conflicts of interest to report regarding the present study.

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