

Problem Solving and Resilience Self-Efficacy as Factors of Subjective Well-Being in Greek Individuals With and Without Physical Disabilities

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Abstract

The way that individuals perceive their well-being may vary depending on their self-efficacy especially towards a difficult life situation, such as the physical disability. The aim of this study is to examine the relationships among problem solving self-efficacy, resilience self-efficacy and subjective well-being and the differentiation among these factors between people with and without physical disabilities. A self-report questionnaire was administered to 150 individuals with physical disabilities and 150 individuals without disabilities in Greece. Results showed positive correlations among problem solving self-efficacy, resilience self-efficacy and subjective well-being, while statistically significant differences were found in the level of the above factors between participants with and without disability. Furthermore, the need for an escort and the satisfaction with transportation autonomy could predict much variance in self-efficacy and subjective well-being for individuals with physical disabilities. The implications of findings for the psychosocial adjustment of people with physical disabilities are discussed.

Keywords: physical disability; problem solving self-efficacy; resilience self-efficacy; subjective well-being; satisfaction with transportation autonomy.

Introduction

The way that people evaluate their well-being is associated with how efficient consider themselves in various areas of life. Beliefs about personal efficacy have a vital role in the actions that people choose and they are related to various domains of human functioning (Luszczynska, Gutiérrez-Donã, & Schwarzer, 2005). The relationship between behavioral change and perceived efficacy was initially supported by Albert Bandura (1978), who introduced the psychological concept of “self-efficacy” in the context of his social-cognitive theory. *Self-efficacy* is defined as the individual’s beliefs about his capabilities to organise and to perform specific actions which are required in order to achieve the outcomes that he desires (Bandura, 1997).

Self-efficacy is a multidimensional concept (Bandura, 1978) and the level of perceived self-efficacy might vary in different areas of life. For this reason, there are discrete and different dimensions of self-efficacy. A specific dimension of self-efficacy is *problem-solving self-efficacy*, which refers to person’s beliefs about his abilities to efficiently manage and to resolve a difficult situation or a serious problem (Karademas, 2006; Karademas, 2007). High problem-solving self-efficacy leads the person to distinguish the most appropriate behavior or to find the best possible solution (Heppner, & Lee, 2005). *Resilience self-efficacy* is another dimension of self-efficacy which concerns personal beliefs about the capability to deal with the negative effects of an unpleasant situation (Karademas, 2006; 2007). When people believe that they are able to resist towards an event which appears as threatening or stressful -such as the situation of physical disability- they can adapt to it more positively (Masten & Reed, 2005).

Depending on the level of his self-efficacy the individual decides how to react under certain circumstances, after he has assessed his abilities to succeed (Maddux, 2005). For example, towards a difficult and a serious objective situation, high self-efficacy could affect adaptation, leading people to focus more on the positive aspects of life and on the pleasant experiences and to continue their coping efforts despite any kind of problem or stressful event. Physical disability is considered to be such an objectively difficult situation which has important psychological effects to those who experience it. However, when people with disabilities regard themselves as effective, they are adapted more adequately and they evaluate their everyday lives more positively regardless of the type or the severity of disability (Schiaffino & Revenson, 1992; Schiaffino et al., 1991)

Among the most important factors that are related to how someone assesses his well-being, self-efficacy is also included. These subjective assessments about life are characterized as a key aspect of optimal functioning (Ryan and Deci 2001). The concept of *subjective well-being* refers to the assessments or to the reactions that people make about their life (Diener, 1994; Diener et al., 1985). The term is defined as ‘a person’s cognitive and affective evaluations of his or her life. “These evaluations include emotional reactions to events as well as cognitive judgments of satisfaction and fulfillment” (Diener et al., 2005, p. 63).

The relationship between self-efficacy and subjective well-being has become an object of investigation among scientists especially during the last decades. However, the studies, which examined the association between the two factors in general population, are limited and there are even fewer studies that were targeted on the population of people with physical disabilities.

The study conducted by Hampton (2004) in a sample of 127 individuals, who had spinal cord injuries, examined how demographic variables and self-efficacy influence the level of subjective well-being. Among the results, it was found that self-efficacy accounted for a significant variance in subjective well-being, but gender was not correlated with subjective well-being. In the quantitative study conducted by Middleton et al. (2007), 106 individuals, who had spinal cord injuries and had received treatment in a rehabilitation unit, completed a self-report questionnaire. It was found that participants with spinal cord injury had lower quality of life compared to the general Australian population. Furthermore, the low level of participants' self-efficacy was associated with low quality of life. Peter et al. (2014) conducted a quantitative research, which involved 516 individuals with spinal cord injury, living in a community in Switzerland. It was shown that general self-efficacy was positively associated with the level of life satisfaction. In another quantitative research (Krause et al., 2004), which involved 309 African-Americans adults with traumatic spinal cord injury, gender differences were found in subjective well-being as measured by a self-report questionnaire. Women reported a lower degree of subjective well-being and they had a higher frequency of depressive symptoms and negative emotions compared to men.

Other researchers have used two sample groups (individuals with and without disabilities) in order to investigate if there were differences in the levels of self-efficacy and of subjective well-being between the two groups. Dijkers (1997) performed a meta-analysis in a total of 22 studies, showing that people with spinal cord injuries reported lower subjective well-being compared to people without disabilities. Bunketorp-Käll et al. (2007) focused on the possible effects of whiplash associated disorders on the self-efficacy. The exposed group consisted of 47 adults who had subacute whiplash associated disorders and the control group of 113 adults without disabilities. Participants of the exposed group had lower level of self-efficacy compared to those of the control group. In his study, Hampton (2008) used self-report scales in a sample of 119 Chinese individuals with spinal cord injuries and 109 individuals without disabilities in order to examine any differences in subjective well-being between the two groups. It was found that participants with spinal cord injuries had lower subjective well-being and lower self-efficacy compared to participants without disabilities. Furthermore, in each sample group, self-efficacy was related to subjective well-being.

Differences in subjective well-being have also been found in other studies, focusing on the examination of this factor between two sample groups. In their comparative cross-national study, Van Campen and van Santvoort (2013) examined the level of subjective well being of people with disabilities within 21 European countries as well as the determinant variables which could explain the differences in subjective well-being observed in these countries. Self-report measures as for emotional well-being, satisfying life and other variables (e.g. disability, socio-demographics, participation, and personal resources) were completed by 40,605 persons. Results showed that individuals with disabilities had lower subjective well-being compared to individuals with no disabilities across all countries. The inequality of subjective well-being was higher in Eastern European countries (Russia, Ukraine, Slovakia and Poland) than in Northern countries (Finland, Denmark, Sweden, The Netherlands, United Kingdom and Ireland). The factors that explained the variance of subjective well-being, concerned mostly personal resources (e.g. vitality, social supportiveness, optimism, resilience, perceived autonomy, perceived accomplishment, perceived capacity and engagement) compared to other variables, such as the

level of disability, socio-economic status or the level of participation in work. In another study, Van Campen and Iedema (2007) compared the level of subjective well-being between individuals with and without disabilities in a sample of 5,826 Dutch individuals (1,899 participants with physical disabilities and 3,927 participants without disability), using self-report measures. It was found not only that people with disabilities had lower subjective well-being compared to the participants of the control group, but also that the severity of physical limitation affected the level of subjective well-being.

The literature review reveals that it has not been systematically examined yet whether there are differences in the levels of self-efficacy and of subjective well-being between people with and without disabilities. As demarcated by reviewed research, most studies took place in the European context and fewer studies were conducted in a sample of American or Chinese participants. Despite the fact that the investigation of this research topic has a special importance for the lives and the adaptation of people with disabilities, similar studies have not been conducted in Greece. A cross-cultural commonality of the level of subjective well-being between Greek individuals with and without physical disabilities is expected based on the cross-cultural comparisons in the study by Van Campen and van Santvoort (2013). The finding of this study showed that in all countries under investigation individuals with disabilities were in a disadvantaged position in terms of subjective well-being. Although there are differences across countries in terms of social, economical, and cultural background, it is assumed that the presence and the direction of relationships among the targeted variables in the present research conducted in the Greek context would not radically differ from the findings of past studies conducted in other economically developed countries.

For this reason, this study was designed to focus on the relationships among problem solving self-efficacy, resilience self-efficacy, subjective well-being and factors related to disability in people with physical disabilities as well as on the presence of differences between people with and without physical disabilities. In particular, the present study aimed to address the following research questions:

- (1) Is there any differentiation in the levels of problem-solving self-efficacy, of resilience self-efficacy and of subjective well-being between individuals with and without disabilities?
- (2) What is the relationship among the level of problem-solving self-efficacy, the level of resilience self-efficacy and the level of subjective well-being in individuals with and without physical disabilities?
- (3) What is the relationship among factors related to disability situation (need for an escort, satisfaction with transportation autonomy), problem-solving self-efficacy, resilience self-efficacy and subjective well-being in individuals with physical disabilities?
- (4) Does the level of subjective well-being differ in individuals with physical disabilities according to gender?

Method

Participants

A total of 300 Greek individuals (N = 300) participated in the study. Specifically, the sample consisted of 150 people with physical disabilities and 150 people without disabilities. Although people with physical disabilities is a heterogeneous group due to the type, the cause and the severity of the motor impairment, physical disability was considered as any kind of limitation or loss of movement which affects the person's everyday life (Jones, Morgan, Shelton, & Thorogood, 2007). Convenience sampling method was used for the selection of participants with physical disabilities, so that this sample group cannot be considered representative of the Greek population in terms of physical disability. In the group of participants with physical disabilities, individuals who had –either inborn or acquired– orthopedic impairment, limb amputation or crippling deformities were included. The criteria for the participant recruitment were as follows: (a) In the group of people with physical disabilities, each participant had a motor but not a cognitive impairment; b) in both groups each participant was at least 16 years old at the time of the study; c) the sample consisted of native individuals who lived in urban centers of North and South Greece and d) participants without disabilities were selected from the same urban areas in order to fit the gender and age distribution of participants with physical disabilities. The substantial difference between the two sample groups was the presence or the lack of disability.

According to gender, each group included 76 men and 74 women. As for the age of participants in each sample group, 5 individuals (n=5) belonged to the age group of 15-18 years old, 27 individuals (n=27) to the age group of 19-24 years old, 91 individuals (n=91) to the age group of 25-30 years old and 10 individuals (n=10) to the age group of 31-39 years old. The age of 9 individuals (n=9) ranged from 40 to 49 years old and the age of 8 individuals (n=8) ranged from 50 years and older.

Study Procedure

A self-report questionnaire was administered to the participants. At first, the aim and the importance of the study were explained in general terms and afterwards participants completed the questionnaire. Informed consent was obtained from all individuals included in the study and underage adolescents participated in the study, after the parental permission was obtained. The questionnaire was anonymous and there was no time limit for its completion.

Measures

In order to collect the survey data, the questionnaire was divided in three sections. In the first section, demographic questions were included, which concerned the gender, the age, and two questions related to the situation of disability.

In the dichotomous question (yes/no) “*Need for an Escort*” participants with physical disability were asked if they had a permanent necessity for support and assistance provided by a third person who had to be always present in order to satisfy fundamental needs (such as nourishment, getting on and off toilet, putting on and of clothes, bath and motion). This person (a parent, a spouse, a friend, a nurse, a caregiver etc.) is characterized as an escort and he is indispensable,

because the person cannot be engaged in self-care behaviors without assistance. In the question named as “*Satisfaction with Transportation Autonomy*” participants with physical disabilities were asked to rate how satisfied they felt with their autonomy during transportation on a five-point Likert scale (1=not at all to 5=very much).

In the second section, *Self-Efficacy Expectations Scale* (Karademas, 2006) was included. The scale consists of two factors. “Problem-solving self-efficacy subscale” consists of 6 items (e.g., “capable of planning action”, “capable of thinking alternative solutions”, Cronbach $\alpha = .79$) and “resilience self-efficacy subscale” consists of 7 items (e.g., “capable of bearing the negative consequences of a problem”, “remain calm when dealing with a problem”, Cronbach $\alpha = .90$). Individuals indicate the level of their agreement across a four-point Likert-type scale ranging from 1 (not at all) to 4 (a lot).

In the third section, the *Subjective Happiness Scale* [SHS] was used (Lyubormisky & Lepper, 1999). The Scale consists of 4 items. Participants are asked to report the level of their agreement across a seven-point Likert-type scale (1=strongly disagree to 7=strongly agree). The scale has been translated in Greek using the multiple forward and backward translation protocol and validated in a sample of 856 Greek adults. The Greek translation of SHS has good construct and discriminant validity and its internal consistency is satisfactory (Cronbach’s $\alpha=0.77$) (Lyrakos et al., 2013).

Data Analysis

For the quantitative data analysis, the Statistical Package SPSS (Statistical Package for Social Sciences, Version 21) was used. A probability level of $p < .05$ was set for all tests of statistical significance.

Results

Comparisons of problem solving self-efficacy, resilience self-efficacy and subjective well-being between individuals with and without disabilities

Independent samples t-tests were used in order to compare the means of problem-solving self-efficacy, resilience self-efficacy and subjective well-being between participants with and without physical disabilities. It was found that there was a statistically significant difference in the means of problem-solving self-efficacy between the two sample groups, $t(287.498)=-4.162$, $p=0.00<0.01$. Thus, individuals with a physical disability ($M=2.80$, $SD=0.71$) had a lower level of problem-solving self-efficacy compared to individuals without disability ($M=3.11$, $SD=0.59$). Furthermore, a statistically significant difference was found in the means of resilience self-efficacy between the two sample groups, $t(287.498)=-4.162$, $p=0.00<0.01$. Individuals with a physical disability ($M=2.80$, $SD=0.71$) had a lower level of resilience self-efficacy compared to those without disability ($M=3.11$, $SD=0.59$). The results (See Table 1) also showed that there was a statistically significant difference in the means of subjective well-being between the two sample groups, $t(282.878)=-5.436$, $p=0.00 <0.01$. Participants with physical disabilities ($M=2.77$, $SD=0.76$) had a lower level of subjective well-being compared to participants without disabilities ($M=3.20$, $SD=0.60$).

Table 1. Comparisons of problem solving self-efficacy, resilience self-efficacy and subjective well-being by sample group

Variable	Sample Group				<i>t</i>	<i>df</i>
	Individuals with physical disability		Individuals without disability			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Problem-solving self-efficacy	2.80	0.71	3.11	0.59	-4.162*	287.498
Resilience self-efficacy	2.80	0.71	3.11	0.59	-4.162*	287.498
Subjective well-being	2.77	0.76	3.20	0.60	-5.436*	282.878

Note. *= $p < 0.01$. *M*=Mean and *SD*=Standard Deviation. Problem-solving self-efficacy, resilience self-efficacy and subjective well-being ranged from 1 (Not at all) to 5 (Always).

Correlations among problem solving self-efficacy, resilience self-efficacy and subjective well-being in individuals with and without disabilities

Pearson's correlation coefficient (*r*) was calculated in order to examine the relationships among problem-solving self-efficacy, resilience self-efficacy and subjective well-being for each sample group. For participants with physical disabilities, there was a positive statistically significant correlation between problem-solving self-efficacy and subjective well-being, $r(150)=0.899$, $p=0.00 < 0.01$ and a positive statistically significant correlation between resilience self-efficacy and subjective well-being, $r(150)=0.899$, $p=0.00 < 0.01$. For participants without disabilities, positive statistically significant correlations between problem-solving self-efficacy and subjective well-being [$r(150)=0.805$, $p=0.00 < 0.01$] and between resilience self-efficacy and subjective well-being [$r(150)=0.805$, $p=0.00 < 0.01$] were also found (See Table 2). In order to examine whether the correlations for the two sample groups were significantly different, Fisher's *r* to *z* transformation was used. At first, correlation coefficients (*r* values) were converted into *z* scores and then the observed values of *z* (*z*-critical values) were calculated. Results showed that there was a statistically significant difference in the strength of the correlation between subjective well-being and problem solving self-efficacy for individuals with physical disabilities and individuals without disability, $Z=3.04$, $p=0.00 < 0.001$.

Table 2. Bivariate correlations among problem-solving self-efficacy, resilience self-efficacy, subjective well-being in individuals with and without disabilities

Variable	Individuals with physical disability (n=150)			Individuals without disability (n=150)		
	1	2	3	1	2	3
1. Problem-solving self-efficacy	--		.899*	--		.805*
2. Resilience self-efficacy		--	.899*		--	.805*
3. Subjective well-being			--			--

Note. *= $p < .01$. The Pearson correlation coefficient was calculated for each sample group separately.

Relationships among need for an escort, satisfaction with transportation autonomy, problem solving self-efficacy, resilience self-efficacy and subjective well-being

A series of multiple linear regression analyses were calculated in order to examine the relationships among factors related to disability, problem solving self-efficacy, resilience self-efficacy and subjective well-being in the group of individuals with physical disabilities. A multiple linear regression analysis was used to predict subjective well-being based on need for an escort and satisfaction with transportation autonomy. The prediction model was statistically significant, $F(2,147) = 89.105$, $p < .001$, and accounted for approximately 55% of the variance of subjective well-being ($R^2 = .548$, Adjusted $R^2 = .542$). A multiple linear regression analysis was also used to predict problem-solving self-efficacy based on need for an escort and satisfaction with transportation autonomy. The prediction model was statistically significant, $F(2,147) = 90.117$, $p < .001$, and accounted for approximately 50% of the variance of problem-solving self-efficacy ($R^2 = .551$, Adjusted $R^2 = .545$). Finally, another multiple linear regression analysis was calculated to predict resilience self-efficacy based on need for an escort and satisfaction with transportation autonomy. The prediction model was statistically significant, $F(2,147) = 90.117$, $p < .001$, and accounted for approximately 50% of the variance of problem-solving self-efficacy ($R^2 = .551$, Adjusted $R^2 = .545$). For all multiple regression analyses the raw and standardized regression coefficients of the predictors for each dependent variable (subjective well-being, problem-solving self-efficacy and resilience self-efficacy) are shown in Table 3.

Table 3. Regression coefficients resulting from three different multiple regression analyses (n=150)

Predictors	Subjective well-being			Problem-solving self-efficacy			Resilience self-efficacy		
	<i>b</i>	SE- <i>b</i>	Beta	<i>b</i>	SE- <i>b</i>	Beta	<i>b</i>	SE- <i>b</i>	Beta
Need for escort	.247	.179	.146	.006	.169	.004	.006	.169	.004
Satisfaction with transportation autonomy	.410	.071	.612	.469	.067	.739	.469	.067	.739
R ²	.548			.551			.551		

Demographic differences in individuals with physical disabilities

In order to examine whether the level of subjective well-being differed according to the gender of participants with physical disabilities, one-way analysis of variance (ANOVA) was performed. Levene's test was initially applied in order to assess the equality of variances for the variables, proving that the assumption of variance was fulfilled ($p=0.75>0.05$). The results showed that there was a statistically significant difference in the level of subjective well-being between men and women with a physical disability, $F(1,148)=9.71$, $p=0.00 < 0.01$. Women with physical disabilities ($M=2.58$, $SD=0.72$) had a lower level of subjective well-being than men with physical disabilities ($M=2.96$, $SD =0.74$) (Table 4).

Table 4. One-way analysis of variance of subjective well-being by gender in experimental group

Variable	Experimental Group (N=150)					
	Gender					
	Male		Female		<i>df</i>	<i>F</i>
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Subjective well-being	2.96	0.74	2.58	0.72	1.148	9.71*

Discussion

The aim of this study was to examine the presence of differences in the levels of problem-solving self-efficacy, resilience self-efficacy and subjective well-being between people with and without physical disabilities, as well as the relationships among these factors.

Concerning the first research question, results showed a statistically significant difference in problem-solving self-efficacy and resilience self-efficacy between participants with and without disabilities. Individuals with physical disabilities had lower levels of problem-solving self-efficacy and of resilience self-efficacy compared to those without disabilities. This finding is also confirmed in the study conducted by Hampton (2008) in which the experimental group consisted of participants with spinal cord injuries and in the study conducted by Bunketorp-Käll et al. (2007), in which participants had subacute whiplash associated disorders. In both studies, participants of the experimental group had lower level of self-efficacy compared to those of the control group (individuals without disabilities). The difference, which was found between the two sample groups, could be explained due to the fact that the physical disability is an objective situation that can create constraints and barriers in the person's daily life. The disability could restrain individuals from having experiences of success in various areas of everyday life (e.g. work, entertainment, education), so that they believe less in their capabilities compared to people without disabilities.

The level of subjective well-being also differed between people with and without physical disabilities. Specifically, the level of subjective well-being of people with physical disability was lower compared to that of people without disabilities. The study which was conducted by Hampton (2008), showed similar results, because individuals with spinal cord injuries, who participated in this study, reported a lower level of subjective well-being compared to those of the control group. Van Campen and van Santvoort (2013) also confirmed that people with disabilities had lower subjective well being than people without disabilities across 21 European countries. Individuals with disabilities have to face various challenges and problems arising from the disability situation. The differences that are detected in the level of subjective well-being between people with and without physical disabilities might turn up due to the fact that the physical disability reduces the individuals' functioning, setting limits to activities of everyday life. A person with disability experiences even more intensely the reduction of his functioning and he feels weaker to satisfy his needs, when the social environment does not provide the necessary conditions for accessibility and social participation (e.g. leisure activities, employment, etc.).

The second research question concerned the investigation of relationship between self-efficacy and subjective well-being in both sample groups. The results showed that problem solving self-efficacy and resilience self-efficacy were positively associated with subjective well-being in participants with and without physical disabilities. Previous studies (Caprara et al., 2006; Karademas, 2006; Karademas, 2007; Luszczynska et al., 2005; Magaletta & Oliver, 1999; Santos et al., 2014; Weber et al., 2013; Zumberg et al., 2008) which were conducted in group of individuals taken from the general population, also led to the finding that self-efficacy was strongly associated with the sense of personal well-being. Self-efficacy is closely related to the perception that an individual has about his life, as it affects the behaviour when the individual faces severe problems and unfamiliar events (Bandura, 1978). High self-efficacy leads the person to a better psychological adjustment and to a greater degree of subjective well-being, even if he faces a difficult situation, such as the disability. This finding is confirmed by studies which were conducted in a sample of people with disabilities (Hampton, 2004; Hampton, 2008). These studies showed not only a positive correlation between the two factors, but also that self-efficacy was a significant predictor of subjective well-being of people with disabilities. On the contrary, the low sense of personal efficacy leads to less positive evaluations about life (Caprara & Steca,

2005; Lent et al., 2005; Piquart et al., 2004; Strobel et al., 2011). For example, in a relevant study (Middleton et al., 2007) the low level of self-efficacy of participants with spinal cord injuries was associated with the decrease in the level of their quality of life. Self-efficacy could explain a significant proportion of the variance in the adaptation of people with disabilities (Cunningham et al., 1991). Furthermore, Van Campen and van Santvoort (2013) showed in their study that the variance in the level of subjective well-being among individuals with physical disabilities was explained more by personal resources, such as resilience and perceived autonomy than by other factors (e.g. socio-demographic variables). Thus, the limitations in functioning, which people with disabilities experience, are determined more by the sense of their personal efficacy compared to the actual disability situation, the type of disability and its severity (Baron et al., 1987). For this reason, individuals who have even the same type and degree of disability, but differ in the level of self-efficacy, have different adjustment and various degrees of well-being.

Addressing the third research question, the need for an escort and the satisfaction with transportation autonomy were factors with a significant influence on the variance in problem-solving self-efficacy and resilience self-efficacy predicted by the model. People who needed an escort and they did not feel satisfied with their independence during transportation, had lower problem-solving self-efficacy and resilience self-efficacy compared to those who did not need an escort and reported greater satisfaction during transportation autonomy. This finding is confirmed in a previous study (Becker & Schaller, 1995), which involved 28 adults with cerebral palsy. The results showed that there was a negative correlation between the level of self-efficacy and the need for personal assistance. Physical disability is a condition that undoubtedly affects the quality of life (Connolly et al., 2014). The severity of the disability is an important factor that can affect the person's judgments about his abilities. The difficulty in movement and transportation due to limitations of motion is a serious objective problem which influences the autonomy of the individual. Barriers in social participation are often based on the severity of the situation, so that people belonging to this socially vulnerable group lag behind compared to people without disability in various domains of society (Van Campen & Iedema, 2007). The person with a physical disability is likely to experience constantly failure as for his ability to move, so that his sense of personal efficacy remains low.

The need for an escort and the satisfaction with transportation autonomy could also predict much variance in subjective well-being for people with physical disabilities. People, who had the need for an escort and felt less satisfied with their autonomy during their transportation, had lower subjective well-being. Physical health is related to subjective well-being. Van Campen and Iedema (2007) showed that the level of subjective well-being decreases, as the severity of physical limitation gets higher. Thus, when the person is restricted in his movement and he is forced to ask for help and support during transportation, he feels less satisfied over his own life. However, although an objectively difficult situation experienced by the person –such as the disability–, is associated with subjective well-being (Watten et al., 1997), subjective judgments about his health affect more the level of his subjective well-being (Diener et al., 2005; Diener et al., 1999). The strong association among factors related to disability and subjective well-being in the Greek sample might show that support services and facilitation addressed to people with physical disabilities that exist in Greece are inadequate or underfinanced. In a different context where assistance services and facilitation measures were systematically applied to meet the special needs of these people, the replication of this research would probably show not such a

strong association among these variables, because these individuals could overcome barriers related to their physical disability with formal disability resources.

The results concerning the last research question showed that there was a significant difference in subjective well-being according to the gender of participants with disabilities. Women had a lower level of subjective well-being compared to men. Previous studies, which were conducted in a sample of individuals without disabilities, confirmed the difference in the level of subjective well-being between the two sexes (Diener et al., 1999). However, the findings of studies, in which the sample consisted of people with disabilities, are not always consistent. In the study conducted by Krause et al. (2004), it was found that female participants with spinal cord injury had lower subjective well-being compared to male participants with the spinal injury. Small differences in subjective well-being according to the gender were also found in another study (Krause, 1998), where the sample consisted of people who had disabilities after spinal cord injuries. However, other studies (Hampton, 2004; Krause et al., 2009), which involved individuals with spinal cord injuries, did not show any statistically significant difference in subjective well-being by gender. The differences between men and women in the level of subjective well-being might be due to the different behaviour of each gender (Costa et al., 2001; Nolen-Hoeksema & Rusting, 1999). In particular, women experience unpleasant feelings more frequently and more intensely than men, they are more vulnerable emotionally and they tend to be quiet overwhelmed by negative emotions when they encounter unexpected events. Different social expectations for both sexes may also be responsible for the differentiation between men and women in the level of their subjective well-being (Nolen-Hoeksema & Rusting, 1999). Women often feel that they are weak in their relationships, thinking that they have no control over daily decisions, so that they end up having a negative mood. The roles of each gender influence the emotional reactions of men and women as well as the way they express their feelings (e.g. if they externalize them or not) (Brody & Hall, 1993; Nolen-Hoeksema & Rusting, 1999). Provided that the findings of previous studies vary as for the existence of difference in subjective well-being between men and women with disabilities, a more systematic investigation of the issue is needed.

Self-efficacy is a determinant factor of psychological adaptation of the person with disability (Cunningham et al., 1991; Zumberg et al., 2008), affecting perceived well-being (Dahlbeck & Lightsey, 2008; Karademas, 2007). Thus, the level of psychological well-being would be increased, if self-efficacy beliefs were optimized (Benka et al., 2014). The difference between Greek individuals with and without disabilities in the levels of self-efficacy and of subjective well-being, which was confirmed by the present study, shows that it is essential for individuals with disabilities to be trained in order to enhance their sense of personal efficacy, reaching gradually rich psychosocial outcomes. When the individual with physical disability believes in his capability to perform various life tasks and to face negative events, he manages to overcome more efficiently the difficulties and the constraints which arise from disability situation. These successful experiences, which are closely linked to his high self-efficacy, usually lead to a positive perception about his well-being, as he finds out that his capabilities in daily life are not actually hindered by his disability and he can achieve or cope with his problems despite his poor physical condition.

Thus, findings support the need for the design and the implementation of psychological intervention programs, aimed to increase the level of self-efficacy. These programs would be specifically addressed to individuals with physical disabilities, but would also be adapted to the

features of Greek population. Self-efficacy could be included in a range of personal strategies that the individual could use in order to deal with the negative psychological consequences of disability situation (Marks, 2014). Such measures are absent in the Greek context and they are not broadly promoted by the Greek society. This might be a reason for the lower level of subjective well-being and of self-efficacy reported by participants with disabilities compared to those without disabilities.

While this study is the starting point for the investigation of the relationship between self-efficacy and subjective well-being in people with physical disabilities, it has certain limitations. The sample derives from specific cities of Greece and it cannot be regarded as representative of the total population of people with physical disabilities. Furthermore, the areas where participants lived, were major urban centers. Though, participants' responses would probably differ, if the sample derived from rural areas.

It would be useful that future research would focus on other demographic variables related to the disability situation which could differentiate the level of self-efficacy and of subjective well-being. Such variables could include the time of disability onset (inborn or acquired disability), the severity of the injury, and the type of disability or the degree of pain. Furthermore, it is necessary to investigate whether the family and the social environment, where the person with disabilities lives, give the opportunities to him to develop his self-efficacy. Various studies showed that the variance, which was observed in the level subjective well being of individuals with disabilities in European countries, could be partly explained by the different national policies applied as for this socially vulnerable group in each country (van Campen & van Santvoort, 2013). Even if the person regards himself as effective, local barriers and the lack of social support might prevent him from maintaining a high level of self-efficacy and his participation in activities might be restrained in various spheres of life, affecting also his subjective well-being.

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