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Self-efficacy, social support and well-being The mediating role of optimism

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Abstract

Self-efficacy, optimism and social support have been consistently related to health and functioning. In this study a specific hypothesis was tested: self-efficacy expectations, as a representation of a capable self, and perceived social support, as a representation of a helpful world, shape optimism which is an outcome expectation. Optimism in turn predicts satisfaction with life and depressive symptoms. Satisfaction with life and depressive symptomatology both served as indicators of well-being. Two hundred and one (201) individuals participated in our study (average age 41.57 years). The hypothesis was tested through Structural Equation Modeling. Six different models with optimism, self-efficacy and social support as possible mediators were consecutively tested and compared. According to only model that provided fit to the data, optimism partially mediates the relation of self-efficacy and perceived social support to well-being. Optimism was predicted by daily emotional support and self-efficacy.

Keywords: Well-being; Optimism; Self-efficacy; Social support

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1. Introduction

According to the social-cognitive theory, expectations play a very important role in shaping behavior, goals and general human functioning (Bandura, 1986). There are two basic types of expectations: the first type, self-efficacy expectations, refers to the personal abilities for achieving a desired outcome, while the other, outcome expectations, refers to the possibility of finally achieving a desired outcome. According to Bandura (1997), self-efficacy expectations are judgments about how well a person can act in a certain way in order to meet a goal or cope effectively with stressful situations. On the other hand, Scheier and Carver (1985) describe optimism as a generalized tendency to expect positive outcomes even in the face of obstacles. The purpose of this study was to examine the ways that expectations interact with perceived social support in shaping well-being, as well as the possible role of optimism as a mediator in the relationship of self-efficacy and social support to well-being.

Both self-efficacy and optimism expectations are related to functioning and health. High self-efficacy is related, for example, to the regulation of the stress process, to higher self-esteem, better well-being, better physical condition, better adaptation to and recovery from acute and chronic diseases (Bandura, 1997; Bisschop, Knegsman, Beekman, & Deeg, 2004; Kuijer & de Ridder, 2003). Furthermore, low self-efficacy is related to more symptoms of anxiety and depression (Faure & Loxton, 2003; Kashdan & Roberts, 2004; Shnek, Irvine, Stewart, & Abbey, 2001), as well as to lower levels of subjective well-being (Barlow, Wright, & Cullen, 2002; Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003; Caprara, 2002).

Optimism is also related to well-being and health. Previous and recent studies (e.g., Chang & Sanna, 2001; Diener, Oishi, & Lucas, 2003; Eid & Diener, 2004; Makikangas & Kinnunen, 2003) have found that optimism significantly predicts several aspects of subjective well-being. Optimism is negatively related to depressive symptomatology both in the general population (Vickers & Vogeltanz, 2000) and in populations with various chronic conditions, such as cardiovascular disease (Shnek et al., 2001). It is also a significant predictor of physical and psychological functioning in patients suffering from various medical conditions (Carver et al., 1993; Fournier, de Ridder, & Bensing, 2002). Optimism has been found to be linked to functioning and health both directly and indirectly by means, e.g., of affectivity or self-esteem (Chang & Sanna, 2001; Symister & Friend, 2003). Optimists seem to employ more problem-focused coping strategies and more effective ways of emotional regulation, both of which contribute to better functioning (Taylor & Armor, 1996).

Besides expectations, social support is also related to subjective well-being (Kahn, Hessling, & Russell, 2003; Mikulincer & Florian, 1998), as well as to depression (Sayal et al., 2002). It is also related to the progress of a variety of chronic conditions, such as cardiovascular diseases, cancer and many others (Bisschop et al., 2004; Garssen, 2004; Heckman, 2003; King, 1997). Hogan, Linden, and Najarian (2002) and Rhodes (2004) suggest that individuals with more supportive families or friends have a better health status and they recover faster from health problems, compared to persons who are less socially integrated. Social support seems to exert influence on health both directly and indirectly through certain cognitive mechanisms, coping strategies, and health behaviors (Cohen & Wills, 1985; Davis & Swan, 1999; Wills & Fegan, 2001).

Recent studies have examined the relationship between expectations and social support with respect to human functioning and health. Thompson, Kaslow, Short, and Wyckoff (2002) in a

sample of African American abused women found that self-efficacy and suicide attempt status are partially accounted for by the mediation of perceived social support from friends and family. Brissette, Scheier, and Carver (2002) in a sample of university students found that higher levels of optimism were prospectively associated with smaller increases in stress and depression, with social support serving as a mediator. In the same vein, social support has been found to mediate the relationship between optimism and distress in persons who have experienced a traumatic event (Dougall, Hyman, Hayward, McFeeley, & Baum, 2001), as well as between optimism and distress in early-stage breast cancer survivors (Trunzo & Pinto, 2003).

In most cases, perceived social support was studied as a mediating variable. High expectations (self-efficacy or optimism) were related to outcomes through a strong sense of support. Still, a different pattern may also be possible: having high efficacy and a perception of strong support can lead to enhanced optimism expectations and, through this, to better health outcomes. Recently, Cervone (2004) presented a new cognitive 'architecture' of personality. In his proposed model, behavior is based on knowledge structures and appraisal processes. The latter abuts on the former. Based on that, one could say that self-efficacy and perceived social support represent knowledge about self (being capable) and the world (being friendly) which in turn results in appraising the future as possibly nice and fruitful (optimism), and in better functioning and better health status.

This study is a part of a broader research effort aimed at the examination of the relations between a range of cognitive factors and human functioning. The purpose of the present study is to examine the hypothesis that optimism is acting as mediator in the relationship of self-efficacy and social support to well-being. Depressive symptoms and social support were used as indicators of well-being.

2. Method

2.1. Participants

Two hundred and one (201) individuals working in four insurance companies participated in our study (56.7% females and 43.3% males). Their average age was 41.57 years (SD = 10.18) ranging from 19 to 62 years. Eighteen (9.0%) had finished elementary school, 96 (47.7%) had finished high school, and 86 (42.8%) were holders of a university degree. Forty-one (20.4%) were single, 145 (72.1%) were living with their family or someone else, and 15 (7.5%) were divorced or widowed.

2.2. Measures

Expectations measures. Self-efficacy expectations were measured with a questionnaire designed for the purposes of the present study. We included items regarding efficacy to make a decision or consider alternatives when dealing with a problem, as well as to make plans, to remain calm, to bear the negative consequences, to keep everyday routine even when confronted with a significant problem, etc. Participants were asked to rate items across a Likert-type scale ranging from 1 (not at all) to 4 (a lot). A principal component factor analysis with varimax rotation was performed and revealed three factors, which are presented in Section 3.

Optimism was measured with the Personal Optimism Scale from the Questionnaire for the Assessment of Personal Optimism and Social Optimism-Extended (POSO-E) by Schweizer and Koch (2001). The scale consists of eight items (e.g., ''I often feel that nothing nice will happen'', ''I face my future in an optimistic way'', ''I worry about my future'', Cronbach $\alpha = 0.70$, in the present study). Participants rated items across a Likert-type scale (1 = not agree, 4 = agree a lot).

Social support measure. Social support was assessed with the Social Support Questionnaire by Doeglas et al. (1996). Two scales of this questionnaire were used: (a) the scale of daily emotional support (five items, e.g., ''does it ever happen to you that people are warm and affectionate towards you?'', ''does it ever happen to you that people sympathize with you?'', ''does it ever happen to you that people are willing to lend you a friendly ear?'', Cronbach $\alpha = 0.84$, in the present study); (b) the scale of daily instrumental support (four items, ''does it ever happen to you that people help you to do odd jobs?'', ''does it ever happen to you that people lend you small amounts of money?'', Cronbach $\alpha = 0.71$, in the present study). Participants rated items across a Likert-type scale (1 = seldom or never, 4 = often).

Well-being measures. Satisfaction with life was measured by the relevant scale of the Oxford Happiness Inventory (Hills & Argyle, 2001). The scale consists of nine items (e.g., ''pleased with the way I am'', ''life is very good'', ''satisfied with many things in my life'', Cronbach $\alpha = 0.89$, in the present study). Participants were asked to rate items across a four point Likert-type scale ranging from 1 (does not apply) to 4 (applies a lot).

Finally, depressive symptoms were measured with the 22-item scale of the Mood and Anxiety Symptom Questionnaire—MASQ (Watson, Clark, Weber, & Assenheimer, 1995; Watson et al., 1995), that contains items regarding loss of interest (e.g., slowed down, bored, nothing was enjoyable), as well as items concerning low positive affect (reversed keyed, e.g., happy, proud of myself, optimistic, hopeful about future, Cronbach $\alpha = 0.95$, in the present study). Participants indicated the extent to which they had experienced each symptom (1 = not at all, 5 = extremely) during past week.

Participants completed the questionnaires in two phases, with an interval of almost one month. In phase one, they completed the self-efficacy, optimism and social support questionnaires. In phase two, they completed the satisfaction with life and depressive symptoms questionnaires.

3. Results

The principal component factor analysis of the self-efficacy questionnaire revealed the presence of three factors that explained 54.16% of the total variance. The first factor, 'resilience self-efficacy expectations', assesses how capable the persons think themselves to be in order to bear the negative consequences of the stressful situation. It consists of seven items (e.g., ''capable of bearing the negative consequences of a problem or bad situation'', ''remain calm when dealing with a problem'', 25.06% of the variance, eigenvalue = 4.26, Cronbach $\alpha = 0.90$). The second factor, 'problem-solving self-efficacy', assesses the degree of capability in order to deal effectively and resolve a problem or stressful situation. Six items loaded on this factor (e.g., ''capable of planning action'', ''capable of thinking alternative solutions to a problem or difficulty'', 16.18% of the variance, eigenvalue = 2.75, Cronbach $\alpha = 0.79$). The third factor, 'awareness self-efficacy', assesses the capability of defining the problem, its causes and possible solutions. Four items loaded on this factor (e.g.,

"capable of defining what the problem is", "capable of defining the causes of the problem", 12.92% of the variance, eigenvalue = 2.19, Cronbach $\alpha = 0.67$). This factor was not included in the present study due to the fact that no significant relations to well-being were found in previous analyses (Karademas, in press). Higher scores in each scale indicate higher self-efficacy expectations.

The means, standard deviations, and the correlation matrix between all variables included in this study are presented in Table 1. According to a series of ANOVA, males reported significantly lower depressive symptoms than women ($M = 23.91$ vs 29.59, respectively, $F(1, 199) = 10.74$, $p < 0.001$). They also reported higher resilience self-efficacy ($M = 23.72$ vs 21.18, respectively, $F(1, 195) = 15.68$, $p < 0.001$). No other significant differences were noticed regarding gender. With respect to age (in three levels: 19–35 years, 36–50 and 51–62 years), no significant differences were revealed. The main hypothesis was tested through the application of Structural Equation Modeling employing LISREL 8.54 (Joreskog & Sorbom, 1996). Six different models in two sets were compared. The first set (Set A) included three models with complete mediations: in Model 1 optimism served as a mediator between well-being measures, and social support and self-efficacy. According to this model satisfaction and depression are predicted by optimism, and optimism is predicted by resilience and problem-solving self-efficacy, and emotional and instrumental social support. In Model 2 social support served as a mediator between well-being measures, and optimism and self-efficacy (i.e., optimism and self-efficacy predicted social support, which in turn predicted well-being measures). In Model 3 self-efficacy was the mediator (i.e., optimism and social support predicted self-efficacy, which in turn predicted well-being). The three models of the second set (Set B) refer to partial mediations: in Model 4 optimism served as a partial mediator, while self-efficacy and social support could also directly predict satisfaction with life and depression. In Models 5 and 6 social support and self-efficacy served as partial mediators, respectively. In Model 5, self-efficacy and optimism predicted social support. All three, that is, social support, self-efficacy and optimism, predicted well-being measures. In Model 6, optimism and social support predicted self-efficacy. Well-being was again predicted by all these three variables. The summary of fit indices of these models, as well as the tests of the model comparisons is presented in Table 2. According to the results, the only model that provided fit to the data was Model 4—optimism as a partial mediator. It is the only model with a non-significant chi-square (Table 2).

Table 1
Means, standard deviations, and inter-correlations of the variables

	1	2	3	4	5	6	7
1. Depressive symptoms	1.00						
2. Satisfaction with life	−0.58**	1.00					
3. Optimism	−0.48**	0.42**	1.00				
4. Resilience self-efficacy	−0.27**	0.07	0.34**	1.00			
5. Prob.-solv. self-efficacy	−0.31**	0.27**	0.24**	0.43**	1.00		
6. Emotional support	−0.14	0.26**	0.31**	0.15	0.25**	1.00	
7. Instrumental support	−0.15	0.27**	0.30**	0.21*	0.27**	0.61**	1.00
Mean	27.13	25.38	24.07	22.27	18.35	14.43	12.62
Standard deviation	12.48	5.22	3.84	4.62	2.73	3.13	3.22

* $p < 0.01$.
** $p < 0.001$.

Table 2
Fit indices for the six models in two sets of complete and partial mediation

Model	χ^2	d.f.	*P*	NFI	CFI	χ^2_{diff}
Set A: Complete mediation						
Model 1. Optimism	31.57	8	0.001	0.91	0.93	
Model 2. Social support	146.88	7	0.001	0.60	0.60	
Model 3. Self-efficacy	58.16	6	0.001	0.87	0.88	
Difference between Models 1 and 2						115.31*
Difference between Models 1 and 3						26.59*
Set B: Partial mediation						
Model 4. Optimism	0.68	2	0.71	1.00	1.00	
Model 5. Social support	73.24	1	0.001	0.80	0.79	
Model 6. Self-efficacy	29.51	1	0.001	0.92	0.92	
Difference between Models 4 and 5						72.56*
Difference between Models 4 and 6						28.59*
Difference between Models 1 and 4						30.89*

Note. NFI = normed fit index; CFI = comparative fit index.
* $p < 0.001$.

Besides that, with respect to the other models, Model 1 demonstrated more satisfactory NFI and CFI values in comparison to the two other models of Set A. The chi-square difference between Model 1 ($\chi^2 = 31.57$) and Model 2 ($\chi^2 = 146.88$) was 115.30 (d.f. = 1, $p < 0.001$), while the difference between Models 1 and 3 ($\chi^2 = 58.16$) was 26.59 (d.f. = 2, $p < 0.001$). In the same way, Model 4 was superior to Models 5 and 6, according to the fit indices and the chi-square differences (see Table 2). The chi-square difference between Model 1 (complete mediation of optimism, $\chi^2 = 31.57$) and Model 4 (partial mediation of optimism, $\chi^2 = 0.68$) was 30.89 (d.f. = 6, $p < 0.001$).

Fig. 1 presents the maximum likelihood estimates of Model 4. Non-significant estimates are not presented. According to this path model ($\chi^2 = 0.68$, d.f. = 2, $p = 0.71$, AGFI = 0.99,

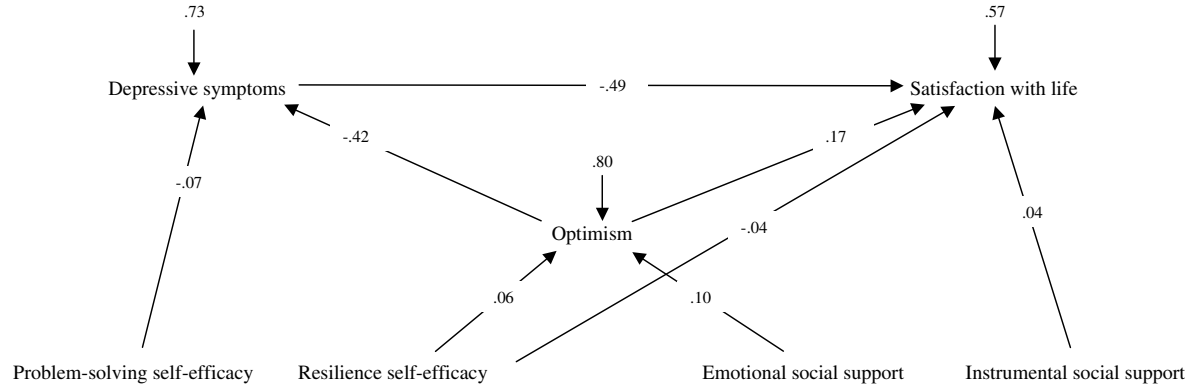

Fig. 1. Path analysis between depressive symptoms, satisfaction with life, optimism, self-efficacy, and social support, and β-coefficients. *Note.* R^2 depression = 0.27; R^2 satisfaction with life = 0.43; R^2 optimism = 0.20.

RMSEA = 0.0), depression is predicted by optimism and problem-solving self-efficacy in a negative way, whereas satisfaction with life is predicted negatively by depression and resilience self-efficacy, and positively by optimism. Resilience self-efficacy and emotional social support significantly predicted optimism, both in a positive way.

4. Discussion

Expectations regarding personal abilities and future outcomes are central to the formation of human behavior (Bandura, 1986). In this respect we examined the possible role of optimism as a mediator in the relationship between well-being, social support and self-efficacy. Depression and satisfaction with life scales were used as indicators of well-being.

In a number of studies (for example, Brissette et al., 2002; Thompson et al., 2002; Trunzo & Pinto, 2003) social support served as a mediator between expectations (self-efficacy or optimism) and negative or positive outcomes. Our data did not offer support to such a relationship. In this study, six models were tested through SEM. Three of these presumed a complete mediation of optimism, social support or self-efficacy. The remaining three presumed a partial mediation.

The model of partial mediation of optimism was not only superior, in terms of goodness-of-fit indices, but also the only one that fit the data. According to this model, self-efficacy and social support predict depression and satisfaction with life in both ways: directly and indirectly through optimism. Optimism was significantly predicted by daily emotional social support and resilience self-efficacy.

The mediatory role of optimism, even if partial, is remarkable and revealing of the possible relations between cognitive representations and human functioning. In fact, optimism reflects an overall positive appraisal of the future and of the things to happen. A positive view of the future requires a positive appraisal of the current person–environment interaction, or a relatively strong belief that things are going to become better. In order to formulate and maintain such beliefs the person is relying on a sense of personal capability, as well as on a positive evaluation of the social context and its 'ability' to provide the necessary support. Being loved and respected and being capable of dealing with life difficulties are, according to Beck (1995), the fundamental cognitive schemata on which all other assumptions and evaluations are grounded. Our findings are in congruence to this thesis: daily emotional social support, which reflects a basic schema that the person is lovable, and self-efficacy, which reflects a basic schema that the person is capable, shapes optimism. Optimism in turn predicts depressive symptomatology and satisfaction with life, in a negative and in a positive way, respectively.

On the other hand, the direct effects of self-efficacy and social support on well-being are also interesting. The negative relationships of self-efficacy and social support to depression are well known from a plethora of studies (e.g., Bisschop et al., 2004; Kashdan & Roberts, 2004; Vickers & Vogeltanz, 2000). The positive relationships between the above variables and well-being are also well documented (e.g., Diener et al., 2003; Eid & Diener, 2004; Kuijer & de Ridder, 2003; Rhodes, 2004).

In contrast to what one might expect, however, the impact of resilience self-efficacy on satisfaction with life was negative. Here there seems to be a kind of inconsistency: resilience self-efficacy predicts optimism in a positive way (optimism is positively related to satisfaction with life), while

at the same time it predicts satisfaction in a negative way. Resilience self-efficacy, as earlier noted, refers to the belief that one can bear the negative consequences of a stressful situation, even when they become quite aversive. This aspect of efficacy represents a personal 'knowledge' that is based, among others, on the experience gained from dealing with several stressful events. However, the encounter with stressors is probably unwelcome and, thus, it might result in a negative relation to satisfaction with life. At the same time resilience self-efficacy itself, as a general positive appraisal, is positively related to optimism. In any case, this finding deserves further study before coming to any conclusions.

Our study is faced with a significant limitation: it is totally reliant on self-reported data. A study with a prospective methodology conducted on specific populations (e.g., caregivers) would provide us with more concrete results regarding the relationships between expectations and social support.

The study of the relation between expectations, support and well-being is of importance, since it allows us to understand the ways that social relationships relate to personal beliefs in shaping outcome expectations and of course outcomes. The variables included in this study are parts of the broader cognitive appraisal process, as well as representations of the ways that individuals perceive their own function and their interaction with the environment. The mapping of the relationships between these representations will provide us with the opportunity, not only to outline underlying processes, but also to use all relevant information in order to design effective intervention models.

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