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The relationship between general and specific self-efficacy during the decision-making process considering treatment.

Abstract: The aim of the study was to confirm the mediation effects of the task-specific self-efficacy on the relationship between the general self-efficacy and intention and planning considering treatment. The study comprised 265 subjects, of which 165 were post-mastectomy women and 100 patients hospitalized due to acute coronary syndrome (ACS). The variables were assessed using the Generalized Self-Efficacy Scale (GSES) and tools developed to examine the context of treatment. The data were analyzed using the bootstrapping procedure. The results confirmed the indirect effects of task-specific self-efficacy, both in women making a decision to undergo breast reconstruction, and in patients after ACS formulating intention to change risk behaviours. As smoking was considered to be a moderator in the post-ACS group, the obtained associations were observed only among the patients declaring quitting smoking. In view of the fact that task-specific self-efficacy is susceptible to context (e.g. it may depend on quitting smoking), it is useful to assess it in order to increase treatment effectiveness.

Key words: Social Cognitive Theory (SCT), general and task-specific self-efficacy, intention, planning, mediation

Introduction

The role of self-efficacy, a central concept of Bandura's social cognitive theory (SCT, 1997), in making health decisions, and - consequently - its impact on the effectiveness of specific treatment and rehabilitation interventions, has been well documented in numerous studies (e.g. Mishali, Omer, Heymann, 2011; Sarkar, Ali, Whooley, 2009; Schwarzer, 2008; Woodgate, Brawley, 2008). According to the British Association for Cardiac Rehabilitation self-efficacy, besides illness representation, is the theoretical framework for long-term psychological support in individualised patient care aimed at reducing the cardio-vascular risk (including the change of risk behaviours; Lau-Walker, 2006). Apart from the impact it has on adherence to medical advice (and perhaps as a result of this impact?), self-efficacy is also a predictor of objective health predictors, such as hospitalization for heart failure or the mortality rate among stable coronary heart disease

patients (Sarkar, Ali, Whooley, 2009). Consequently, self-efficacy may be considered a resource in chronic diseases, by means of which the patient is able to make treatment-related decisions, implement them and achieve results that influence the objective health status and the quality of life (see in rehabilitation: Houle, Doyon, Vadeboncoeur, Turbide, Diaz, Poirier, 2011; Schwarzer, Luszczynska, Ziegelmann, Scholz, Lippke, 2008; or in adaptation to cancer disease, including breast-reconstruction decision: Maly, Liu, Kwong, Thind, Diamant, 2009; Nápoles, Ortíz, O'Brien, Sereno, Kaplan, 2011; Orom, Penner, West, Downs, Rayford, Underwood, 2009; Manne, Ostroff, Norton, Fox, Grana, Goldstein, 2006).

Self-efficacy across levels of generality

According to the SCT assumptions, self-efficacy refers to an individual's belief that she/he can achieve a certain purpose, no matter what obstacles are encountered in the process. Self-efficacy does not refer to the expectations

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related to the outcome itself but to the subjective evaluation of the possibilities of performing actions aimed at the outcome. As a result, regulatory processes are initiated at cognitive, motivation, and affective level. Self-efficacy, as defined by Bandura (1977; 1997), has predictive power only when it is evaluated against a specific task (task-specific self-efficacy), since its characteristics are a basis for subjective evaluation of the possessed knowledge, skills and abilities required to perform an action. Thus, self-efficacy should always refer to the context (*ibidem*) and it is impossible to predict the effectiveness of actions undertaken by an individual in different situations, even being very similar ones.

However, as research indicates, the various and numerous cases of failure or success in a given sphere of life may lead to the assessment of domain-specific self-efficacy for this specific sphere, such as treatment or education. If they come from different domains of functioning over a longer period of time, they may generate global confidence in individual's coping ability across a wide range of stressful or novel situations. This confidence is commonly referred to as stable general self-efficacy (see Hendy, Lyons, Breakwell, 2006; Schwarzer, Bäßler, Kwiatek, Schröder, Zhang, 1997). Due to the fact that levels of generality have been distinguished, some researchers speculate that self-efficacy may be structured hierarchically across multiple dimensions from task-specific to global self-efficacy (Choi, 2004; 2005).

It is worth noting here that the interest around general self-efficacy increased over several recent years, mostly as a result of the availability of tools that can measure this construct (see Yeo, Neal, 2006). Adapted for use in 28 languages, the GSES is an example of such a tool (Schwarzer & Jerusalem, 1995), whose high psychometric values have been confirmed in earlier studies (Leganger, Kraft, Rrysamb, 2000; Schwarzer, Mueller, Greenglass, 1999). Specific self-efficacy research, especially related to the task, requires measures that must be developed by the authors themselves in order to meet the context of the decision-making process or the change in general.

Self-efficacy and the decision-making process

Research documents the connections of general self-efficacy to a broad range of psychological constructs pertaining to various domains of human functioning, e.g. self-esteem, optimism, future orientation, well-being (positive and negative emotions) and stress appraisals (Luszczynska, Gutiérrez-Doña and Schwarzer, 2005). In other words, general self-efficacy is a stable construct across situations, along with their cultural context and over the duration of the measurement (e.g. Luszczynska, Scholz, Schwarzer, 2005; Smith, Kass, Rotunda, Schneider, 2006). Otherwise, in case of task-specific self-efficacy or domain-specific self-efficacy – their prediction or maintenance

over time is limited. The accepted continuum of generality means that the more specific the self-efficacy, the more susceptible it is to external influences causing a change (see Miles, Maurer, 2012; Miyoshi, 2012).

If specific self-efficacy relates to challenges of a situation, then it should be distinguished to the phases in the decision-making process. A model considering the phase-specific self-efficacy is the Health Action Process Approach (HAPA; Schwarzer, 2008). It identifies two kinds of self-efficacy: motivational, concerning the formulating of an intention to act and volitional, related to the process of carrying out the task undertaken (the last one is specific for maintenance self-efficacy and recovery self-efficacy). Motivational self-efficacy is a task-specific self-efficacy (see Schwarzer, Lippke and Luszczynska, 2011). It has an indirect impact on the performance via intention and planning. Apart from other factors (such as outcome expectancies and risk perception), it defines the challenges taken up by an individual and the value of aims. When the level is high then the aims that the individual sets for herself/himself are more ambitious. This kind of self-efficacy is also related to the perseverance needed to achieve the aims and therefore it is essential for planning (implementation intentions, see Gollwitzer, 1999). Schwarzer and colleagues (2011) suggested that the relationships between task-specific self-efficacy, intention and planning might also depend on other factors, i.e. moderators. For example, risk behaviour changes have been found to be higher in those persons who quit smoking than in smokers or non-smokers (Falasinnu, 2011; Schnoll *et al.*, 2002).

Bandura's general assumption (1977), according to which in most cases self-efficacy should be conceptualized at a specific level, has not been questioned (e.g. Luszczynska, Gutiérrez-Doña, Schwarzer, 2005). Some research documents the role of specific self-efficacy in predicting the effects of an action in a well-known situation, whereas in a new situation general self-efficacy is more significant (despite a clear context) (Oei, Hasking, Philips, 2007). However, there is no conclusion concerning the predictive power of a construct at different levels of generalization or pertaining to how the relationships between those levels should be shown in a given situation. Yeo and Neal (2006) point out that general self-efficacy, conceptualized as a motivational trait results from aggregation of previous experiences, and that it may minimize the impact of external influences. Subjects with high general self-efficacy are expected to perform well in a variety of tasks because their general confidence to feel efficacious will spill over into specific domains, and - in them - into specific situations (see Yeo, Neal, 2006). Consequently, task-specific self-efficacy most probably mediates the effect of general self-efficacy on subsequent stages of the decision-making process (intention and planning).

Aims of the study

The basic aim of the study was to confirm the mediation effects of self-efficacy on the relation between general self-efficacy and intention as well as planning of a change in the motivational phase of the decision-making process considering treatment. In order to verify this hypothesis, two different treatment-related situations were considered: making a breast-reconstruction decision by post-mastectomy women and making a decision on changing a risk behaviour (inadequate diet and sedentary lifestyle) by patients immediately after an acute coronary syndrome (ACS). Moreover, in case of the latter group the hypothesis was formulated that the relationships between general self-efficacy, task-specific self-efficacy, intention and planning have been moderated by quitting smoking after ACS.

Method

Subjects

The study comprised a total of 265 subjects, including 165 women after cancer-related mastectomy, and 100 post-ACS subjects. The mean age of post-mastectomy women was 53 years ($SD = 10.57$). Most of them were married or lived with a partner (70.3%). More than half of the examined women had secondary education (50.3%); university education as well as elementary and basic vocational education were represented by similar numbers of subjects (24.8% and 24.9%, respectively). The mean time from the first tumour removal surgery was 57.39 months ($SD = 72.17$). At the time of the study, most of the women were not receiving treatment (62.4%). The group receiving therapy listed the following methods (several could be selected, provided in brackets are the percentages of women in relation to the total number of subjects): hormone-therapy (17.6%), chemo-therapy (12.1%) and radio-therapy (10.3%). Exclusion criteria for patients were: hospitalization, metastases and receiving psychiatric treatment.

The second group of subjects comprised 100 patients (including 79 men) hospitalized due to the first non-complicated ACS, diagnosed as the basic disease without co-existing chronic disorders (e.g. cardiac or renal insufficiency, chronic *obstructive* pulmonary disease or tumours). The subjects below the age of 66 ($M = 53.22$; $SD = 7.09$)¹ were qualified for the study by the physician several days after the ACS, immediately prior to discharge, in order to ensure the patient's good psycho-physical condition during the examination. The majority of the patients were married or lived with a partner (87 subjects). Of the examined subjects, 45 (almost half) had secondary education, 43 - elementary and vocational education, 12

- university education. The groups of patients quitting smoking (quitters) and previously non-smoking (non-smokers) were homogenous as regards the value of such medical indicators as: body mass index, BMI ($M = 28.49$; $SD = 4.72$) and cardiac stress test (METs; $M = 7.94$ METs; $SD = 1.54$); they differed, however, as to the levels of total cholesterol (mg/dl; $M_{Quitters} = 203.06$; $SD = 41.88$; $M_{Non-smokers} = 171.55$; $SD = 35.06$; $t(98) = 3.53$; $p = .001$). Patients receiving psychiatric care have been excluded from the study.

Tools

Measurement of general self-efficacy

Generalized Self-Efficacy Scale (GSES, by R. Schwarzer and M. Jerusalem, Polish adaptation by Z. Juczyński, 2001) consists of ten items, referring to the evaluation of the perceived effectiveness of handling difficult situations and obstacles, using a 4-degree scale (1 – not all true ... 4 – exactly true). An exploratory factor analysis (EFA) was carried out, despite the fact that the studies conducted so far had confirmed the single-factor structure of the scale. The Kaiser-Guttman criterion (see Yeomans and Golder, 1982) indicated that two factors must be identified, but only in case of the post-ACS patients; this was confirmed by analysis of the scree plot. The next EFA stage consisted in extracting two factors using the maximum likelihood method with oblimin rotation. Following the analysis of meaning of items contained in the Polish GSES adaptation, the two factors, in accordance with the properties of self-efficacy indicated by Bandura (1977), were determined to be: 1. Magnitude - the possibility of acting in a difficult or novel situation; 2. Strength - the perseverance in handling adversities (cf. Table 1). The two-factor structure was not confirmed in the post-mastectomy group; however, subsequent statistical analyses included both factors to compare their function in both groups of patients.

The internal consistency (measured using Cronbach's alpha) of the factors was satisfactory: from .86 to .94 for magnitude, from .72 to .86 for strength, depending on the group of patients.

Measurement of the variables specific for the treatment-related decision-making process

The scales for measuring the socio-cognitive variables related to taking a breast-reconstruction decision and the decision to change dietary habits and increase physical activity after ACS, were designed on the basis of Schwarzer's guidelines (2008). Pilot studies were carried out in both groups of patients (including women after breast reconstruction) in order to eliminate ambiguous or unclear items; the compatibility of the items with medical advice was evaluated in each group by a psycho-oncologist and a

¹ This upper age limit was set due to the different risk behavior structure and the related recommendations, and in view of the fact that elderly patients do not always follow their physicians' advice (as they are more prone to suffer from e.g. depressive disorders, see Doggrell, 2010; Tseng, Lin 2008).

Table 1 *EFA factor loadings for post-ACS patients.*

		Factors	
		①	②
Magnitude (capabilities to perform an action)			
10	I can usually handle whatever comes my way.	.918	
9	If I am in trouble, I can usually think of a solution.	.682	
6	I can solve most problems if I invest the necessary effort.	.658	
8	When I am confronted with a problem, I can usually find several solutions.	.640	
7	I can remain calm when facing difficulties because I can rely on my coping abilities.	.558	
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	.526	.324
Strength (persistence in the face of adversities)			
4	I am confident that I could deal efficiently with unexpected events.		.780
3	It is easy for me to stick to my aims and accomplish my goals.		.511
2	If someone opposes me, I can find the means and ways to get what I want.		.483
1	I can always manage to solve difficult problems if I try hard enough.	.327	.436

cardiologist. The constructs measured by individual scales, the number of items in each scale, examples of items, descriptive statistics and levels of reliability are shown in Table 2.

Specific variables in the ACS group were measured using two equivalent versions of the tool, in which only the risk behaviour was changed (diet/exercise).

Results

More recently, researchers have recommended the use of bootstrapping procedure over the Sobel test in assessing indirect effects of mediation model (MacKinnon, Lockwood, Hoffman, West, Sheets, 2002). This procedure does not impose the assumption of normality of the

sampling distribution of indirect effects, while the analyses can be conducted on relatively small samples. It also has a higher power, while maintaining adequate control over Type I error rate. Thus, the bootstrapping method has been proposed, to overcome potential problems caused by unmet assumptions (Preacher, Hayes, 2008). In accordance with the classical postulate by Baron and Kenny (1986), the values of the total effect of general self-efficacy (independent variable) on the specific intention (dependent variable) were also given: if this previously significant effect becomes statistically insignificant after task-specific self-efficacy (mediational variable) has been accounted for, it is the evidence of their mediational role. An indirect effect was considered to be significant if the 95% bootstrap confidence interval of estimate from 5000 bootstrap samples does not include zero.

Table 2 *Constructs, item examples, descriptive and reliability statistics.*

Construct	Item example	Number of items	Answers range	<i>M</i>	<i>SD</i>	<i>α</i>
Post-mastectomy patients						
Self-efficacy <i>to undergo breast reconstruction</i>	I am able to undergo breast reconstruction, even if the arm on the treated side will remain immobile for a certain period of time.	11	1 - 5	2.63	1.32	.97
Intention <i>to undergo breast reconstruction</i>	During the next twelve months I intend to seek medical consultation considering breast reconstruction.	5	1 - 5	2.47	1.46	.96
Post-ACS patients						
Self-efficacy						
<i>to change dietary habits</i>	I think I am able to <i>live on a healthy diet/ take regular exercise</i> , even if I have to reorganize my daily schedule.	10	1 - 7	5.34	1.19	.91
<i>to increase physical activity</i>				4.86	1.43	.93
Intention						
<i>to change dietary habits</i>	Over the next six months I intend to change my <i>diet/ physical activity</i> according to medical recommendations.	3	1 - 7	6.21	.57	.89
<i>to increase physical activity</i>				5.43	1.55	.90
Planning						
<i>to change dietary habits</i>	I know exactly what kind of <i>diet/ physical exercises</i> I want to do.	6	1 - 7	3.53	2.15	.92
<i>to increase physical activity</i>				2.77	2.22	.95

Note: the 1-7 response scale: (1) - *not at all true*, (7) *exactly true*; the 1-5 response scale: (1) - *strongly disagree*, (5) - *strongly agree*.

The role of general and specific self-efficacy in making a breast-reconstruction decision

The hypothetical model included two separate GSES subscales: 1. Capabilities to perform an action in difficult or new situations (magnitude); and 2. Persistence in handling adversities (strength). It was assumed that they had been inter-correlated with regard to the EFA results. Specific self-efficacy for making the breast-reconstruction decision was a mediator between GSES subscales and the intention to undergo the surgical procedure (therefore, these variables concerned the motivation phase). The goodness-of-fit indices were excellent, according to conventional cut-off points² (see Figure 1). Both the total (non-mediated) effect of magnitude (GSES factor) on intention and the path between magnitude and specific self-efficacy were statistically insignificant.

As can be seen in Figure 1, while the total (non-mediated) effect of strength on the intention to undergo the breast reconstruction was significant, the direct effect of strength after controlling self-efficacy to undergo the surgery remained insignificant ($\beta = .00$; $p > .05$). The indirect effect of strength through specific self-efficacy on the intention to undergo breast reconstruction was significant and was estimated to be .20 ($p < .001$)³. As it should be expected, the inter-correlation between both factors of general self-efficacy in this model was very high ($r = .84$; $p < .001$). The level of variance of specific self-efficacy explained by means of persistence in handling adversities was low, a mere 7%, although statistically significant ($p < .001$). In case of the impact of specific self-efficacy on the post-mastectomy women's intention to undergo breast reconstruction, the level of the explained variance was 59% ($\beta = .77$; $p < .001$). Summing up, the mediation effect of specific self-efficacy was confirmed in this particular, treatment-related situation; specific self-efficacy was more significant for taking the breast-reconstruction decision than generalized self-efficacy.

The role of general and specific self-efficacy in changing risk behaviours by post-ACS patients

The hypothetical model assumed that general self-efficacy factors (magnitude and strength) influenced

specific self-efficacy for two kinds of risk behaviours among post-ACS patients: diet and exercise. As was the case with the previous model, the variables concerned the motivation phase, while specific self-efficacy was a mediator between general self-efficacy and intention, and intention had an impact on planning. The factors of specific variables (self-efficacy, intention and planning) were introduced into the model as endogenous variables, between which, according to HAPA, relations exist, but only within a certain behaviour (i.e. there are no such relationships for example between the intention to change diet and the intention to take more exercise). Such a model was not confirmed since the fit indices did not reach acceptable values. The model exploration based on the modification indices led to a model with high fit indices⁴ (see Table 3- post-ACS patients). As was expected, the inter-correlation between the factors of general self-efficacy (magnitude and strength) was not as high as in the post-mastectomy women model ($r = .60$; $p < .001$).

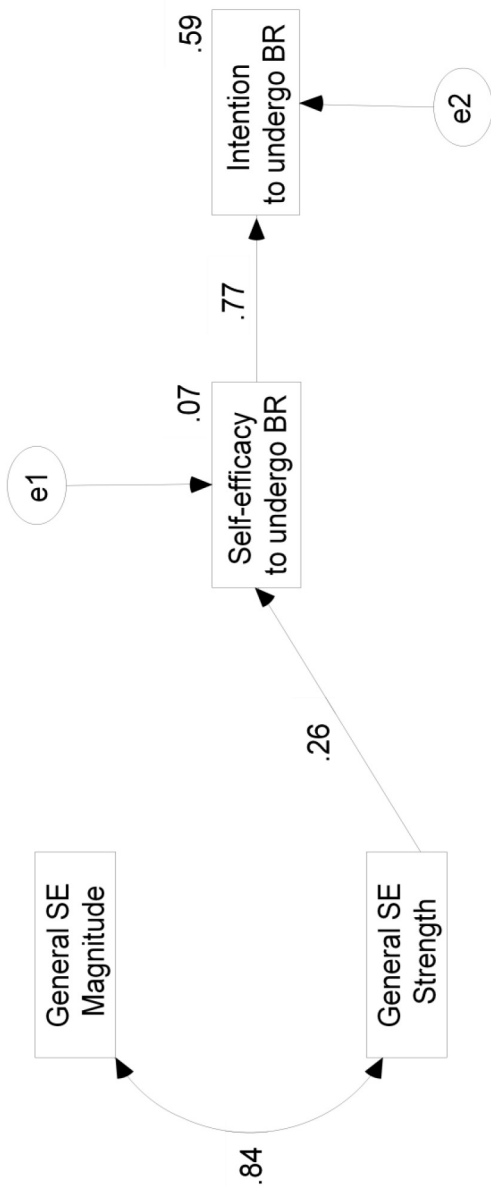
Since the hospitalized post-ACS patients either stopped or significantly reduced smoking, it should be decided if this behaviour is a moderator of the obtained relations. Once quitting smoking was introduced as a moderator, it turned out that the model could be acceptable, but because some fit indices in relation to the original model deteriorated significantly ($\chi^2(30) = 43,384$; $p < 0,054$; TLI = .916; NFI = .877; RMSEA = .067) and because the quitting and non-smoking groups were made up of different numbers of subjects (66 and 34 respectively), a decision was made to test the models separately for both groups. The analysis of fit indices clearly indicated a better model fit for subjects declaring smoking prior to the ACS (also better than in the original model) than in relation to the non-smoking group model (including CFI, TLI, NFI, and RMSEA below acceptable values). Curiously, the paths exiting the general self-efficacy components (magnitude and strength) had a different course in both models (see Figure 2).

The analysis of statistical significance of the paths in both models for the post-ACS patients indicated that specific self-efficacy for a behaviour change plays the role of a mediator, but only in case of the model for the post-ACS patients who were quitting smoking.

² Model fit was assessed by the following indices: comparative fit index CFI, Tucker-Lewis index TLI, normed fit index NFI, the root mean square error of approximation (RMSEA) and the ratio of χ^2 to degrees of freedom (χ^2/df). In case of the listed fit indices it is assumed that (acceptable values in brackets): CFI > .95 (> .90); TLI > .95 (> .90); NFI > .95 (> .90); RMSEA < .05 (< .80); χ^2/df : 1-2 (2-5) - see Bentler, 1990; Bentler and Bonett, 1980; Bollen and Stine, 1992; Browne and Cudeck, 1993; Hu and Bentler, 1998, 1999.

³ A model incorporating the global score of GSES (e.g. one-factor structure) was tested as well. The fit indices of this model were also excellent: $\chi^2 = .022$; $df = 1$; $p = .882$; CFI = 1.000; TLI = 1.020; NFI = 1.000; RMSEA = .000. The total (non-mediated) effect of general self-efficacy on the intention to undergo the breast reconstruction was significant ($\beta = 1.16$; $p < .05$). The direct effect of strength after controlling self-efficacy to undergo the surgery remained insignificant ($\beta = -.01$; $p > .05$). The indirect effect of general self-efficacy through specific self-efficacy on the intention to undergo breast reconstruction was significant and estimated to be .20 ($p < .001$). Thus the mediation effect was confirmed.

⁴ Modifications consisted in removing insignificant paths between GSES factors, specific self-efficacy and intention (respectively there were observed the insignificant total effect of general self-efficacy – magnitude on intention to change diet $\beta = .04$; $p > .05$ and of general self-efficacy – strength on the intention to change physical activity $\beta = .19$; $p > .05$); two paths were added: between general self-efficacy – magnitude and strength to plan to change diet (compare with Figure 2).



General SE Strength → Intention to undergo BR: $\beta = .20, p = .011$

χ^2	df	p	χ^2/df	CFI	TLI	NFI	estimated	RMSEA	
								LO 90	HI 90
0.911	3	0.823	0.304	1.000	0.998	0.997	<0.001	0.000	0.079

Note: The diagram only shows the paths assessed as significant ($p < 0.05$). The relationship described directly under each diagram shows only the statistically significant total effect of a given independent variable on the dependent variable.

Figure 1 SEM(PA) model for post-mastectomy patients: specific self-efficacy (SE) to undergo breast reconstruction (BR) as a mediator.

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Legend:
 — path for quitters
 - - path for non-smokers
 — path for both groups of patients

Path coefficients:
 General SE Magnitude → Specific SE Diet: .06
 General SE Magnitude → Specific SE Exercise: .28
 General SE Strength → Specific SE Diet: .24
 General SE Strength → Specific SE Exercise: .08
 Specific SE Diet → Intention Diet: .67 (.61)
 Specific SE Exercise → Intention Exercise: .71 (.83)
 Intention Diet → Planning Diet: .45 (.38)
 Intention Exercise → Planning Exercise: .32 (.34)
 General SE Magnitude → Intention Diet: .45 (.38)
 General SE Strength → Intention Exercise: .65 (.68)
 General SE Magnitude → Planning Diet: .11 (.21)
 General SE Strength → Planning Exercise: .10 (.12)
 Error terms: e1_1 (.53), e1_2 (.63), e2_1 (.40), e2_2 (-.07), e3_1 (.21), e3_2 (-.58)

General SE Magnitude → Intention Exercise (Quitters): $\beta = .43, p < .001$
 General SE Strength → Intention Diet (Quitters): $\beta = .20, p = .043$

Note:

1. The diagram only shows the paths assessed as significant ($p < 0.05$)
2. The parameter estimates for smoking patients are shown in bold and for non-smoking patients – in brackets.
3. SE – self-efficacy.

Figure 2 SEM(PA) model for post-ACS patients: Smoking as a moderator

Table 3 Goodness-of-fit indices of SEM(PA) models for the group of post-ACS patients: quitting smoking as a moderator:

Model	χ^2	df	p	χ^2/df	CFI	TLI	NFI	RMSEA		
								estimated	LO 90	HI 90
Post-ACS patients	20.364	15	0.158	1.358	0.982	0.967	0.938	0.060	0.000	0.120
Quitters	20.129	17	0.268	1.184	0.985	0.975	0.913	0.053	0.000	0.130
Non-smokers	28.044	18	0.061	1.558	0.895	0.837	0.773	0.130	0.000	0.219

Figure 2 shows that both the total (non-mediated) effect of magnitude (GSES factor) on the intention to change physical activity ($\beta = .43$; $p < .001$), and the direct effect after controlling specific self-efficacy ($\beta = .43$; $p < .001$) were significant. The indirect effect of magnitude (GSES factor) through specific self-efficacy on the intention to change physical activity among post-ACS patients also was significant and was estimated to be $.20$ ($p < .01$), so mediation was only partial here. The second factor of GSES, strength, influenced the intention to change diet significantly (the total effect: $\beta = .20$; $p < .05$), while the direct effect after controlling specific self-efficacy ($\beta = .43$; $p < .001$) remained insignificant ($\beta = .00$; $p < .001$). The indirect effect of strength (GSES factor) through specific self-efficacy on the intention to change diet among post-ACS patients was also significant and was estimated to be $.16$ ($p < .05$). Summing up, the mediation effect of specific self-efficacy was confirmed only in relation to the change of unhealthy diet among post-ACS patients.

In case of the subjects who had not smoked before the ACS incident, the general self-efficacy had a direct impact only on planning to change the diet (the level of explained variance was 21%). The possibilities of undertaking action in a difficult or new situation exercised a positive influence on the implementation of intention; on the other hand, persistence in handling adversities showed a different pattern: the higher it was, the more difficult it proved for non-smokers to carry out the intention to change diet. It is worth noting that the inter-correlation between the general self-efficacy factors (magnitude and strength) in the post-ACS group was the lowest among those so far analyzed ($r = .53$; $p < .01$).

The highest level of correlation was observed in case of the influence of specific self-efficacy for a risk behaviour on the intention to change this behaviour, irrespectively of the health behaviour or the model, for both groups, for patients who had smoked and had not smoked before the ACS (from $.61$ to $.83$). It comes as no surprise, then, that the level of the explained variance was highest for the intention to change risk behaviours (from 38% to 68%). It is essential that no relationship was observed between the specific variables for diet and exercise. As regards the planning to change a risk behaviour, the explained variance levels were also low (10%-21%), although the preceding intention reached high explained variance values. This may mean that the implementation of intention is not a part of the motivation phase but acts as a link between the motivation phase and the volitional phase.

Discussion

The obtained results confirmed the hypothesis of the mediation effect of specific self-efficacy in the treatment-related decision-making process, both in the post-mastectomy women and in the patients immediately after

ACS incident. This hypothesis has rarely been verified in studies (see Yeo, Neal, 2006). The level of the explained variance of specific self-efficacy by general self-efficacy was low. It should be underlined that, irrespectively of the tested model, the role of specific self-efficacy in explaining intention was higher than that of general self-efficacy. One more time, also in relation to the situation of disease, Bandura's thesis was confirmed (1997), according to which task-specific self-efficacy has a greater predictive power, since an individual's beliefs that she/he is able to achieve a certain aim refer to the context (see also: Lau-Walker, 2006; Luszczynska, Gutiérrez-Doña, Schwarzer, 2005).

This conclusion must be further discussed, however, especially as regards the two factors (properties) of general self-efficacy: magnitude, i.e. the possibility of undertaking an action in a difficult or new situation, and strength, i.e. persistence in handling adversities. Since the factors were correlated, at least at a medium level, it must be stated that in the treatment-related decision-making process the first factor was significant only in the post-ACS group and only in relation to making a decision concerning exercise (direct impact on specific self-efficacy, and both direct and indirect influence on the intention was observed). This general self-efficacy factor manifests itself first of all in a new situation, which additionally requires the kind of action probably never undertaken before by the given individual (see Oei, Hasking, Philips, 2007). The sense of persistence in handling adversities was observed in the post-mastectomy group of women making the breast-reconstruction decision and in the post-ACS group of patients - in relation to dietary modifications in accordance with medical advice. Both groups are probably similar in one respect - it is not the difficulty of the task that is important, but the possibility of coping with its consequences over a longer period of time. In that case, making choices is not hard, the only problem being the ability to maintain action once the decision is made.

The conclusion concerning strength as a component of general self-efficacy, and its influence on the intention through specific self-efficacy may be supported by the results obtained on moderating this relationship. It turns out that the introduction of quitting smoking as a moderator in the discussed mediation confirms its significance. Post-ACS patients were hospitalized when the study took place; having experienced hospital conditions as well as sudden threat to their lives, the patients either gave up or at least significantly reduced smoking. It is possible that this experience influenced changes of the remaining risk behaviours: diet and exercise. However, as it was indicated, the mediation effect was observed, of persistence in handling adversities (general self-efficacy factor) on the intention to change diet ("Will I be able to change my diet?" was not so essential as, "Will I be able to keep to my new diet for a longer period of time?", since dietary adjustments had most probably already been made). In case of the second behaviour, i.e. exercise, its introduction depended on the possibilities of undertaking

an action in the situation of disease (“What kind of exercise can I take at all?”, “What kind of sports equipment can I buy?”, “When will I be able to exercise?”). Thus, successful changes in one risk behaviour in the situation of disease may be positively related to the decision-making process connected with changes of the remaining behaviours. It should be added that in such a situation the role of general self-efficacy depends on the context, e.g. the kind of risk behaviour. The thesis about the impact of the action undertaken on changes of self-efficacy supports the notion that self-efficacy may be treated as a dynamic construct (see Chan, 2008; Yeo and Neal, 2006).

Not so in case of the non-smoking subjects, who did not experience the success of quitting or reducing smoking. In that group of post-ACS patients, general self-efficacy had an impact only on the planning of dietary changes. Of interest is the fact that even though the possibilities of handling a difficult or new situation caused increased implementation of the intention, the persistence in handling adversities had a negative impact on planning to change diet. It must be born in mind that the non-smoking patients, as compared with smoking quitters, showed statistically lower levels of total cholesterol, which suggests that their diet had so far been adequate. Patients certain of their persistence in maintaining a task, but having at the same time experienced defeat in trying to keep to the low-fat diet (manifested by ACS occurrence), most probably felt they did not control the disease. Moreover, specific self-efficacy in this situation ceased to play the role of a mediator. The low level of the explained variance for planning may be interpreted as confirmation of a different function of this variable in the process of change, consisting in linking the motivational phase with the volitional phase (Schwarzer, 2008).

The arguments presented above may lead to a conclusion that general self-efficacy plays a role of a resource in making treatment-related decisions but only when the patients feel they control their disease. They then invest their resources (general self-efficacy) in order to restore the resources lost due to the disease. If the disease is not under control then the patients protect their resources, since their investment may result in further losses (see conservation of resources theory, Hobfoll, 1998). This thesis has yet to be verified, but it is worth noting here that practitioners should focus their efforts also on patients who, despite following medical advice, are unable to control their disease (see Życińska, Marszewska, Syska-Sumińska, 2012); a higher level of general self-efficacy in this group of patients does not have to mean that they are more consistent in following medical recommendations.

Another conclusion refers to the sphere of practical action. In view of the fact that specific self-efficacy is a better predictor of changes in relation to a specific task, psychological intervention should start from determining the level of specific self-efficacy. This certainly is a challenge, but it should be stressed that there are ever more

examples illustrating how tools for evaluating specific self-efficacy can be developed (e.g. Schwarzer, 2008; Schwarzer, Lippke, Luszczynska, 2011).

The last but not least conclusion concerns the role of moderators in the treatment-related decision-making process. A review of studies by Schwarzer, Lippke, Luszczynska (2011) concerning patient rehabilitation indicates that those moderators may be: the aforementioned constructs of personality and stress evaluation, the age of subjects, or the perceived social support. These authors emphasize the significance of discovering the mechanisms of changing not one but several risk behaviours simultaneously in the situation of disease. The obtained results indicate that changing and maintaining the change (even in the initial phase) of one risk behaviour can be an important moderator.

Conclusions from the study should be supplemented by a comment on its evident limitations that would be helpful to address in future research. Theoretical development indicates that general self-efficacy causes task-specific self efficacy. However, causal ordering was not tested and other possible explanations could be speculated. Consequently, the obtained relationships are, at best, of a probabilistic character. However, the results were in line with the theoretical expectations, e.g. Bandura’s (1977, 1997) statement concerning the important role of task-specific self-efficacy in a particular situation, or the relation in the HAPA model (Schwarzer, 2008). Demonstrating causality requires further study, with a bigger sample, and differentiated with respect to various contexts.

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