

## Other Papers

Polish Psychological Bulletin  
2014, vol 45(4), 521-532  
DOI - 10.2478/ppb-2014-0062

Maciej Wilski\*

Julia Anastazja Sienkiewicz Wilowska\*\*

### Social support as a regulator of self-care attitude in persons with myocardial infarction

**Abstract:** The article presents the results of research on the relationship between social support and self-care of people with myocardial infarction. 127 patients treated in a rehabilitation centre participated in the study. The Inventory of Socially Supportive Behaviours (ISSB) and the Self-care Questionnaire (KTS) developed by the author, were used. The findings suggest that persons receiving little support are characterised by lower level of self-care than people with medium and high level of support. No such difference was noted between people with medium and high support level. This suggests that social support is of considerable importance for the changes in the level of self-care only in the case of people previously receiving little support. The research also indicates that informational support is related to higher level of self-care whereas instrumental support is related to lower level of self-care. Emotional support was significant only for the care for social functioning.

**Key words:** social support, self-care, myocardial infarction

#### Introduction

One of the chief aims of cardiac rehabilitation is supporting patients in developing motivation and positive attitudes towards changes which should take place in their lifestyles (Fardy, Yanowitz, Wilson, 1995). Patients with heart failure who undergo cardiac rehabilitation are usually willing to introduce modifications and tend to participate actively in the rehabilitation process. This active participation, however, lasts only a short period following myocardial infarction. In the majority of cases, despite earlier plans to maintain active daily routine, this initial resolve starts to wane a few months after the infarction (Dusseldorp et al. 1999). As this is detrimental to health and seriously increases the risk of another myocardial infarction, many researchers and practitioners dealing with this group of patients seek to identify such features in individuals which will contribute to the emergence of activities aimed to maintain health which are more long-lasting and resistant to adversity (Lainscak et al., 2011). Self-care is regarded as one of such features.

#### Self-care

According to Orem (1991), the most prominent researcher studying the issue of self-care, self-care is a learned regulatory function based on the individual's particular abilities to perform independent self-management activities. In other words, it is perceived as a strategy of coping with stressors and daily events as well as a strategy promoting independence and healthy ageing (Chen, Chang, Li, 2002). Others define it resorting to the descriptions of activities which constitute self-care. Carroll, Gilroy and Murra (1999), psychotherapists investigating the issue of self care, identify the factors constituting it: intrapersonal work, interpersonal support, professional development, and physical activities.

Devins and Binik (1996), on the other hand, point to three basic properties which they consider to be fundamental for the self-care of people with chronic conditions. The first feature is accepting responsibility for actions undertaken to cope with illness. This requires from patients a certain level of knowledge concerning both their condition and the ways

\* Katedra Kultury Fizycznej Osób Niepełnosprawnych, Akademia Wychowania Fizycznego im. E. Piaseckiego w Poznaniu, ul. Królowej Jadwigi 27/39, 61-871 Poznań; mwilski@wp.pl

\*\* Wydział Studiów Edukacyjnych Uniwersytetu im. A. Mickiewicza w Poznaniu, ul. Wieniawskiego 1, 61-712 Poznań; juliaw8@poczta.onet.pl

of improving their physical and mental health. The second important element is readiness to co-operate, which should be related to making active contribution to designing the treatment process. As a result of such an attitude the patient will not only be engaged in actions whose aim is improving his/her health but also he/she will be the co-author of the treatment process. The third component of self-care is the ability to translate the knowledge of one's illness into an effective selection of coping strategy and specific health-promoting behaviour patterns – in other words, the ability to apply the knowledge for practical purposes.

Bearing in mind the presented definitions and publications we can distinguish basic areas in which self-care is perceived. Researchers identify physical (Mahoney, 1997), psychological (Norcross, 2000), spiritual (Valente, Marotta, 2005) and social (Guy, 2000) components of self care. The physical component is defined as undertaking motor activity, which results in expending energy via exercises, sport, household and daily functioning activities (Henderson, Ainsworth, 2001). The psychological component refers to seeking specialist support in tackling psychological problems and improving one's competences of coping with stress (Coster, Schwebel, 1997). Spiritual element is related to looking for a sense of purpose and meaning in life (Hage, 2006). The social component includes relationships and interactions established by the individual within the frames of his/her eco-system. From this perspective the social component is defined above all as the ability to make use of the available social support (Richards, Campenni, Muse-Burke, 2010).

It would be impossible to present all suggestions of defining self-care, especially as it was not only within the scope psychologists' interest but also philosophers' (Heidegger 1994, Szewczyk, 2001, Heschel, 2001). Care is conceptualised in contemporary publications in many different ways which shows how broad the concept is and how difficult it is to define it precisely. Self-care has also been a subject of many empirical studies conducted on patients suffering from cardiological conditions. For instance, the review of medical data bases carried out by Barnason, Zimmerman and Young (2011) reveals that in the years 2000-2010 a number of studies on the promotion of self-care among patients with heart failure were conducted – the authors of the review analysed 19 publications devoted directly to the subject. Over half of the publications contained also theoretical conceptions of self-care.

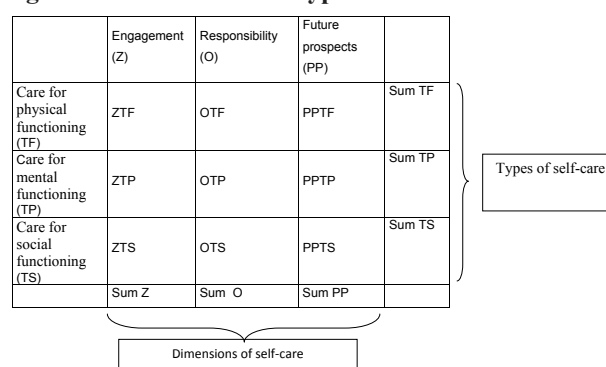
However, the analysis of definitions available so far allows to identify certain fixed meanings often assigned by various investigators to self-care. It is hard to talk about care if we do not take into consideration three elements which constitute it: a) engagement in the improvement of one's present life situation, b) sense of responsibility for one's life, c) perceiving one's life from the perspective of its future development. This last component means that individual thinks about their own lives, being not only here and now but also in the future. Thus assumes the possibility of development and progress in relation to the current situation. Vision of the future becomes an important activator stimulating to action. The consequence of an

attitude characterised by these three features should be a whole variety of activities leading to the improvement of one's life situation and personal development.

The three factors which can be termed dimensions of self-care attitude can assume various levels of intensity and together determine the intensity of self-care. Thus, depending on the level of particular dimensions we can talk about higher or lower level of self-care. Manifestations of care defined in this way should be noticeable in every area of human functioning: mental, physical, and social. Hence, we can distinguish three types of self-care: care for physical functioning, care for mental functioning and care for social functioning. Figure 1 illustrates the suggested definition of self care.

**Figure 1. Dimensions and types of self-care**

	Engagement (Z)	Responsibility (O)	Future prospects (PP)	
Care for physical functioning (TF)	ZTF	OTF	PPTF	Sum TF
Care for mental functioning (TP)	ZTP	OTP	PPTP	Sum TP
Care for social functioning (TS)	ZTS	OTS	PPTS	Sum TS
	Sum Z	Sum O	Sum PP	



Note. Sum Z + Sum O + Sum PP = intensity of self-care.  
 Source. Own research.

Acknowledging the importance of an appropriate level of self-care in patients with heart failure, both researchers and practitioners should make every effort to answer the question – what can be done to encourage patients to look after themselves? In other words, they should seek to identify factors which affect the formation of self-care attitude. In the light of investigations on patient's own activity in the rehabilitation process social support seems to be one of such key factors.

### Social support

Changes occurring as a result of experienced myocardial infarction concern not only the individual but also their community. One may posit that the illness is a defining factor for social dependence. After the initial shock a disability of a member of microcommunity motivates family and friends to provide help. Such help consists primarily in offering social support. What is understood under the term support is a certain form of social interaction which is undertaken by one or both participants of a situation which is difficult, stressful, critical and problematic. In the course of the interaction certain exchange of emotions, instructions how to act, and material goods occur in order to reduce stress or crisis.

We can identify emotional support characterised by the emergence of calming and supportive emotions,

reflecting positive attitude to the supported person, instrumental support consisting in providing information about particular forms of acting, and informational support defined as exchange of such information which will enable better understanding of one's life situation and the underlying problem (Sęk, Cieślak, 2004).

Referring the issue of social support to self-care it is worth emphasising that research clearly shows positive impact of social support on the attitude of self-care after heart failure (Sayers et al., 2008). Social support, both received and potential, has a positive influence on the health and treatment results of cardiac patients (McMahon, Lip, 2002). Orem (1991) stresses that an appropriate system of social support may serve as an environmental resource with the potential of stimulating self-care. Chen and Wang (2007) confirm it in their study on patients with rheumatoid arthritis, for whom social support proved to be the main predictor of self-care behaviour. Wang and Lee (1999), on the other hand, basing on their research established that social support has a significant effect on self-care behaviour and without adequate level of support patient lose motivation to such activities and do not develop skills which serve to maintain self-care.

Clearly, the extent and nature of rendered support depends, to a large extent, on the type of subjective resources which characterise an individual. The level of support offered by the environment will be higher in the case of more serious health condition, when the period of time passed since heart failure is shorter, and the age of the patient more advanced. Simultaneously, a person after myocardial infarction can significantly modify the amount and intensity of received support by demonstrating a particular self-care attitude. If an individual displays a low level of self-care this will clearly cause a reaction of the immediate environment. The support obtained by such an individual will be proportionally higher than in the case of a person with medium level of self-care. It results from the fact that low level of self-care motivates others to provide more support. High level of self-care, on the other hand, is linked to lower level of support obtained since such individuals signal by their behaviour and actions that they are able to face difficulties, which results in reduction of support provided by the environment. It is possible that despite received signals, the surrounding environment will not reduce support which may with time lead to lowered level of self-care. Thus, social support ought to be regarded as an important factor which has a secondary effect on self-care levels in people with heart failure.

As the above analysis suggests adequately matched level of support seems to be a crucial factor for self-care. Various research findings indicate that too low support does not lead to positive changes in the attitude of people with heart failure to their health (Tijhuis et al., 1995). On the other hand, too high levels of support result in the individual's withdrawal from previously undertaken actions targeted at improving his/her life situation (Schnall, 2005).

Research by Sayers and collaborators (2008) which focused on patients with myocardial infarction ( $n=74$ ) revealed that the support of family members and friends

had a negative effect on the level of trust patients placed in their own skills and abilities to care for themselves. This suggests that the role of support is not as clear-cut as some researchers postulate. As a result of a review of studies on social support and its effect on self-management Gallant (2003) referred to support as a double-edged sword. He, thus, stressed the potential of both positive and negative impact of social support. In Gallant's view, it is not only the source and the type of support which matters but also at which point in time support is provided.

In order to perform a reliable evaluation of the relationship between support and self-care one should resort to the concept of received support. It can be assessed objectively or related subjectively by the recipients who report the type and amount of support they actually obtained (Sęk, Cieślak, 2004). This allows to determine a real level of support received by an individual and not only his/her personal convictions concerning the possibility of obtaining help.

The event of myocardial infarction (MI) is a significant factor causing changes in the functioning of both the individual and the individual's immediate environment. The profundity and nature of the changes depend, to great extent, on the subjective resources of the person who experienced the infarction such as personality, objective and subjective health condition, time which has passed from the event of MI, age, gender, and education. Subjective resources, on the one hand, influence the attitude towards oneself including the level of self-care and, on the other, determine the amount of help offered by the environment.

Such assistance consists primarily in emotional, instrumental, and informational support, which also exert influence on the formation of self-care attitude. Thus, the level of self-care may be modified by two types of factors. Primary factors are the subjective resources playing a significant part especially in the initial period of self-care formation following heart failure. Social support is a secondary factor as its significance increases after some time.

The main objective of the paper is providing answers to two research questions. First, is social support obtained by people after heart failure related to the level and type of revealed self-care? Secondly, what is the significance of particular types of social support for the formation of self-care?

### Research method

The research was conducted in a specialist rehabilitation centre for patients with cardiovascular conditions. 127 persons who experienced heart failure for the first time and did not have any other serious illnesses participated in the study. The subjects were at different stages of cardiac rehabilitation. The average time elapsed since the attack was 68 days. Age, gender, education, or residence did not constitute qualifying criteria. 28 women and 99 men participated in the study aged 39-81 years, with age average 57,74. A substantial majority of the participants was aged 50-69.

The research procedure followed the same pattern every time. First, the subjects filled in a questionnaire designed to measure the level of social support and, subsequently, they responded to a questionnaire assessing their self-care attitude. The respondents filled in the questionnaire individually and had unlimited amount of time at their disposal.

In order to measure received social support the Inventory of Socially Supportive Behaviours (ISSB) was used. In Poland this questionnaire was employed for the first time in Polish-American survey comparing the amount of received support by American and Polish students (Harari, Johns, Sęk 1988, qtd in: Cieślak, 2004). The authors of the inventory (Barrera, Sandler, Ramsay, 1981) chose 40 items assessing everyday situations in which respondents received supportive behaviours. The subjects were asked to evaluate each statement using 5-point assessment scale: from 0 (not at all), through 1 (once or twice), 2 (once a week), 3 (a few times a week), to 4 (almost every day). The instruction contains also a request to take into consideration support received during the preceding month.

Besides measuring global social support the questionnaire also enables the measurement of particular types of support: informational, emotional, material, and instrumental. Each response is rated on a 5-point scale; the sum of points for statements referring to the particular scales gives the final result. Cronbach's alpha coefficient is  $\alpha=0,94$ , which confirms reliability of the questionnaire.

The Self-care Questionnaire (KTS – *Kwestionariusz Troski o Siebie*) used to measure the intensity and the types of self-care was developed for the purpose of the study. The final version of the questionnaire included 45 statements, where 15 items corresponded each component of self care (engagement, responsibility, and future prospects). In each component 5 statements referred to physical functioning, mental functioning and social functioning. The respondents were asked to rate the statements using a 5-point Likert-type scale (1 – “I strongly agree”, 2 – “I agree”, 3 – “I have no opinion”, 4 – “I do not agree”, 5 – “I strongly disagree”). Every response was rated from 1 to 5 with the total sum of points giving the final result. The KTS questionnaire contains a scale measuring general self-care attitude (OPT scale – *skala ogólnej postawy troski o siebie*) The maximum number of points on the scale is 225 and signifies a high self care level, whereas the minimum is 45 and marks a low level of self care.

Besides measuring the general level of self-care the KTS questionnaire measures particular types of care. The following scales are used for that purpose: PTF scale – assessing care for physical functioning (sample item is: I know that I need to look for methods that will improve my physical condition), PTP scale – focusing on care for mental functioning (sample item is: Before I make a decision, I wonder if it is good for me), PTS scale – measuring care for social functioning (sample item is: I always plan to spend the holidays with the large group of friends).

In addition, the questionnaire allows for determining three dimensions of care: engagement (sample item is: I always find time to work on my physical fitness),

responsibility (sample item is: My level of physical activity depends only on me), and future prospects (sample item is: I often think how my life will look like in the future). The maximum number of points for these subscales is 75 and suggests a high level of evaluated variable. 15 points is the minimum score subjects can obtain and it suggests a low level of the measured variable.

The questionnaire has undergone reliability test which proved that all the subscales as well as the whole questionnaire are highly reliable (Tab. 1 - See page 525).

## Results

To verify the relationship between the level of received support and self-care attitude the results obtained in the questionnaire measuring received support and in the questionnaire evaluating self-care level were compared. The subjects were divided into three groups: those who scored 80 points or less were classified as having low level of support (this group amounted to 30 % of the total); persons with the score 80-119 were categorised as obtaining medium level of support (the group amounted to 37%); whereas those subjects who obtained 120 points or more were classified to the group receiving high level of support (33%). We divided the group into three levels of support as the analysis of the literature indicated that the lack of support, as well as too high support may similarly affect (negatively) the level of self-care. Hence, we decided that there should be a third level of support (medium), which may be an optimal level. In order to determine the significance of statistical differences between particular groups a single-factor analysis of variance (ANOVA) was used (Tab. 2 - See page 525).

The performed analysis indicates that in the case of general self care the significance of differences between groups was at 0,01. Thus, it can be concluded that there exists a link between the level of obtained support and the level of self-care. The differences are also significant for engagement and future prospects as well as for all self-care types. The only variable which did not differentiate the groups with various levels of received support was responsibility.

In order to assess the quality of the relationship between received support and self-care multiple comparison tests were employed: Bonferroni's test (due to homogeneity of variance) and in the case of physical care – Dunnet's test (due to lack of homogeneity of variance) which were used to determine which mean differences between groups are significant (Tab. 3 - See page 526).

In the case of general level of self-care significant differences are noticeable between the group with low level of social support and the groups with medium and high level of support. There are, however, no significant differences between the group with medium support and the groups receiving high level of support. Similar tendency can be observed for two dimensions of care, namely engagement and future prospects, and for all types of self-care. Also in this case only people receiving little support differed significantly from the rest.

**Table 1. Reliability coefficient of the Kwestionariusz Troski o Siebie scales**

Questionnaire scales		Number of points	Cronbach's alpha
1. general self-care attitude	OPT	45	0,89
2. care for physical functioning	PTF	15	0,76
3. care for mental functioning	PTP	15	0,72
4. care for social functioning	PTS	15	0,70
5. engagement	Z	15	0,69
6. responsibility	O	15	0,71
7. future prospects	PP	15	0,84

Source. Own research.

**Table 2. Relation between global social support and general self-care attitude people after heart failure**

	GLOBAL SOCIAL SUPPORT	N	AVERAGE	STANDARD DEVIATION	SCIGNIFICANCE OF DIFFERENCES
GENERAL SELF-CARE ATTITUDE	Low	39	138,6	26	0,000**
	Medium	44	159,6	22,6	
	High	40	161,2	28	
RESPONSIBILITY	Low	39	49,5	7,9	0,104
	Medium	45	53,7	6,7	
	High	41	52	11,6	
ENGAGEMENT	Low	40	42,7	11	0,000**
	Medium	45	51,6	8,4	
	High	41	53	9,2	
FUTURE PROSPECTS	Low	40	46	9	0,000**
	Medium	44	54,7	9,4	
	High	42	55,2	9,3	
CARE FOR PHYSICAL FINCTIONING	Low	40	48,1	10,6	0,007**
	Medium	44	54,9	8,4	
	High	41	54	12	
CARE FOR MENTAL FUNCTIONING	Low	40	45,6	8,7	0,000**
	Medium	45	53,1	8,2	
	High	42	53,1	9,3	
CARE FOR SOCIAL FUNCTIONING	Low	39	44,4	8,8	0,000**
	Medium	45	52	7,6	
	High	41	53	8,6	

Source. Own research.

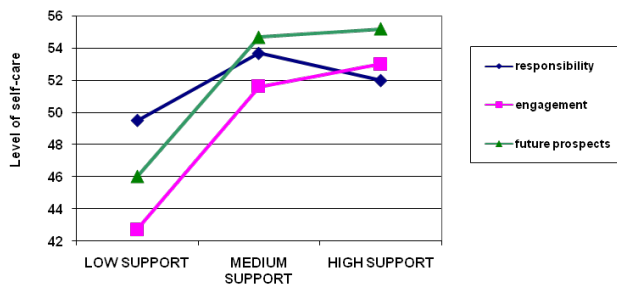
**Table 3. Multiple comparison between groups with different received support (Bonferroni's test and Dunnet's test)**

DEPENDENT VARIABLE	(I) GLOBAL SUPPORT	(J) GLOBAL SUPPORT	AVERAGE DIFFERENCE (I-J)	SIGNIFICANCE	
GENERAL SELF-CARE ATTITUDE	Low	Medium	-21,01(*)	,001	
		High	-22,55(*)	,000	
	Medium	Low	21,01(*)	,001	
		High	-1,54	1,000	
	High	Low	22,55(*)	,000	
		Medium	1,54	1,000	
	FUTURE PROSPECTS	Low	Medium	-8,67(*)	,000
			High	-9,18(*)	,000
Medium		Low	8,67(*)	,000	
		High	-0,5	1,000	
High		Low	9,18(*)	,000	
		Medium	0,5	1,000	
ENGAGEMENT		Low	Medium	-8,89(*)	,000
			High	-10,25(*)	,000
	Medium	Low	8,89(*)	,000	
		High	-1,35	1,000	
	High	Low	10,25(*)	,000	
		Medium	1,35	1,000	
	CARE FOR MENTAL FUNCTIONING	Low	Medium	-7,53(*)	,000
			High	-7,56(*)	,000
Medium		Low	7,53(*)	,000	
		High	-0,03	1,000	
High		Low	7,56(*)	,000	
		Medium	0,03	1,000	
CARE FOR SOCIAL FUNCTIONING		Low	Medium	-7,61(*)	,000
			High	-8,68(*)	,000
	Medium	Low	7,61(*)	,000	
		High	-1,07	1,000	
	High	Low	8,68(*)	,000	
		Medium	1,07	1,000	
	CARE FOR PHYSICAL FUNCTIONING	Low	Medium	-6,83(*)	,005
			High	-5,92	,062
Medium		Low	6,83(*)	,005	
		High	0,9	,970	
High		Low	5,92	,062	
		Medium	-0,9	,970	

Source. Own research.

In order to illustrate the existing relationships figure 2 presents additionally a comparison of the distribution of results obtained by people with low, medium and high level of support on the scales for particular self-care dimensions.

**Figure 2. Relationship between received social support level and self-care dimensions.**



Source. Own research.

Persons who get low support are characterised by the lowest level of engagement in the activities aimed at improving their life situation. The indicator evaluating the level of future prospects for this group is slightly higher, though still notably different from the rest. Responsibility reveals the highest values. With the increase of the level of support we can observe a rapid increase in the level of engagement and improvement of future prospects. Moreover, one may notice that the sense of responsibility goes up as well although the increase is considerably smaller than it is in the case of the remaining dimensions of care. This means that providing more support to people previously obtaining little support results in rapid increase in their level of self-care. Particularly profound changes occur in the area of engagement and future prospects.

Further increase of support does not bring about such visible results. We may witness only minor increase in engagement and even less in the case of future prospects. On the other hand, the level of responsibility decreases. Analysing the distribution of results we may, thus, conclude that too strong support translates into transferring responsibility from the self to others. Consequently, it seems pointless to increase support for people who receive moderate amount of it as it does not lead to considerable increase in self-care and may cause decrease in perceived

responsibility for one's life. A similar effect might be observed if we analysed the diagram demonstrating changes in particular types of self care.

The results presented above indicate there is a link between received support and self-care. In order to deepen the analyses and provide an answer to the second question formulated in the present paper the method of multivariate stepwise regression analysis was used which enables us to evaluate the relationship of particular types of social support with self-care. The general level of care, its dimensions and types were regarded as dependent variables, whereas the three types of support: informational, instrumental, and emotional, as independent variables included in the model.

Performing a regression equation concerning general level of self care points to the existence of a relationship between this variable with two types of support: informational and instrumental (Tab. 4).

Both types of support together account for 11% variance in the dependent variable. A much stronger relation can be observed for informational support, while in the case of instrumental support the relation is weaker. Emotional support did not explain self-care.

The analysis of coefficients leads to the conclusion that informational support is positively correlated with general level of self care (positive beta coefficient). In other words, with the increase in informational support, the self-care level of people with heart failure also goes up. In contrast, instrumental support is negatively correlated with self-care (negative beta coefficient). Thus, as instrumental support goes up general self-care decreases. Furthermore, it is worth underlining that informational support accounts for the dependent variable to a slightly greater degree (with greater "strength" –  $p < 0,01$ ) than instrumental support ( $p < 0,05$ ).

In addition, a regression analysis was performed taking into account particular dimensions and types of self-care. In the case of responsibility and care for physical functioning the analysis did not reveal any significant correlations between these variables and particular types of support. This suggests that none of the types of support explain responsibility and care for physical functioning.

As for the remaining two dimensions of care, namely engagement and future prospects, as well as care for mental and social functioning predictors accounting for their variance were identified.

**Table 4. Multivariate stepwise regression analysis for variable: global level of self-care**

Predictors	<i>B</i>	$\beta$	<i>T</i>	<i>Sig. T</i>	<i>F</i>	<i>Sig. F</i>
Informational support	15,473	0,615	3,763	0,000**	11,788	0,001**
Instrumental support	-9,075	-0,372	-2,275	0,025*	5,177	0,025*

Note.  $R=0,35$ ,  $R^2=0,11$  (\*  $p < 0,05$ , \*\*  $p < 0,01$ )

Source. Own research.

In the case of engagement the only predictor is informational support. It accounts for 12% variance of the dependent variable (Tab. 5). With the increase of informational support the level of engagement in protecting one's health after experiencing heart attack improves (positive beta coefficient).

As far as future prospects and care for mental functioning are concerned two predictors were identified – informational support and instrumental support. Informational and instrumental support together account for 14% variance of future prospects (Tab. 6) and 11% variance of mental care (Tab. 7). Nevertheless, it ought to be pointed out that like in the case of general self-care the relationship of informational support with the level of future prospects and mental care is much stronger than that of instrumental support.

In addition, the analysis of coefficients demonstrates that informational support is positively correlated with the acceptance of future prospects by a person after myocardial infarction and care for their mental health (positive beta coefficient). Thus, the more informational support the better future prospects and care for mental functioning in people with heart failure. On the other hand, instrumental support correlates negatively with both variables (negative beta coefficient). Hence, the increase in instrumental support is related to a decline in future prospects and the level of mental care. It has to be stressed that informational support accounts for the dependent variable to a much larger degree (with greater "strength" –  $p < 0,01$ ) than instrumental support ( $p < 0,05$ ).

The relationship of particular types of support with the level of social self-care has also been assessed. The findings of the statistical analysis are presented in table 8.

**Table 5. Multivariate stepwise regression analysis for variable: engagement**

Predictors	<i>B</i>	$\beta$	<i>T</i>	<i>Sig. T</i>	<i>F</i>	<i>Sig. F</i>
Informational support	3,377	0,351	4,180	0,000**	17,474	0,000**

Note.  $R=0,35$ ,  $R^2=0,12$  (\*  $p < 0,05$ , \*\*  $p < 0,01$ )

Source. Own research.

**Table 6. Multivariate stepwise regression analysis for variable: future prospects**

Predictors	<i>B</i>	$\beta$	<i>T</i>	<i>Sig. T</i>	<i>F</i>	<i>Sig. F</i>
Informational support	5,820	0,634	3,941	0,000**	17,276	0,000**
Instrumental support	-2,927	-0,330	-2,050	0,042*	4,204	0,042*

Note.  $R=0,39$ ,  $R^2=0,14$  (\*  $p < 0,05$ , \*\*  $p < 0,01$ )

Source. Own research.

**Table 7. Multivariate stepwise regression analysis for variable: care for mental functioning**

Predictors	<i>B</i>	$\beta$	<i>T</i>	<i>Sig. T</i>	<i>F</i>	<i>Sig. F</i>
Informational support	5,513	0,644	3,971	0,000**	11,746	0,001**
Instrumental support	-3,393	-0,410	-2,527	0,013*	6,385	0,013*

Note.  $R=0,36$ ,  $R^2=0,11$  (\*  $p < 0,05$ , \*\*  $p < 0,01$ )

Source. Own research.

**Table 8. Multivariate stepwise regression analysis for variable: care for social functioning**

Predictors	<i>B</i>	$\beta$	<i>T</i>	<i>Sig. T</i>	<i>F</i>	<i>Sig. F</i>
Informational support	5,513	0,644	3,971	0,000**	11,746	0,001**
Instrumental support	-3,393	-0,410	-2,527	0,013*	6,385	0,013*
Emotional support	2,979	,347	1,988	,049*	3,952	,049*

Note.  $R=0,43$ ,  $R^2=0,17$  (\*  $p < 0,05$ , \*\*  $p < 0,01$ )

Source. Own research.



In the case of care for social functioning it was possible to identify three predictors accounting for the dependent variable. Similarly to the case of general self-care, informational support played a crucial role. However, when combined with instrumental support and emotional support they accounted for only 17% variance of the dependent variable. The relationship of instrumental support is slightly stronger than emotional support.

The analysis of coefficients allows us to state that informational support and emotional support are positively correlated with the level of social care (positive beta coefficients). This suggests that together with the increase in both these types of support the level of social care in people after heart failure goes up as well. On the other hand, instrumental support correlates negatively with social care (negative beta coefficient). In other words, the rise in instrumental support is related to a fall in the level of social care. It needs to be emphasised that both informational support and instrumental support account for the dependent variable to a similar degree (with similar strength –  $p < 0,01$ ) whereas emotional support slightly less ( $p < 0,05$ ).

The performed analysis shows that the type of received support is of fundamental importance to the formation of self-care in people with myocardial infarctions. Informational support is conducive to self-care while instrumental support is related to lower levels of self-care level. Emotional support proved to be significant only for social care.

ISSB questionnaire can also be used to assess the source of obtained support. Therefore, the relationship of particular sources of support with self-care formation in people with heart failure was subjected to examination. The respondents were asked to specify who they can rely

on in a difficult situation. They could choose from the following options: I can count on my family, I can count on medical staff, I can count on my friends, I can count on acquaintances, I can count on a clergyman. The respondents could choose one option, all the options, or ignore this part. To check whether there is a relationship between support coming from particular sources and the level as well as the types of self-care *t* test for independent samples was used. The findings are presented in Table 9.

As data from table 9 shows the general level of self-care and its dimensions as well as particular types of care are considerably higher for people declaring support of health professionals than for those without such support. Support of friends seems to have minor relationship with the formation of care for mental and social functioning ( $p < 0,05$ ). As for the remaining sources of support no significant differences between studied groups were observed.

### Discussion

The conducted research partially confirms the regulatory function of social support for the formation of self-care attitude in people after myocardial infarction. The research findings clearly indicate that the relationship between received support and self-care is significant. The individuals who receive little help revealed also lower level of self-care. This link is confirmed by the findings of other authors who surveyed cardiac patients' general activity. Low level of support has negative effect on the treatment and rehabilitation processes following heart failure (Wrześniewski, Włodarczyk, 2004).

If, however, patients receive support, this accelerates the process of recovery, inhibits the recurrence

**Table 9. Relationship between source of support and self-care attitude**

	FAMILY	MEDICAL STAFF	FRIENDS	ACQUAINTANCES	CLERGYMAN
GENERAL SELF-CARE LEVEL	0,132	0,011*	0,106	0,267	0,495
RESPONSIBILITY ENGAGEMENT	0,058	0,006**	0,142	0,423	0,624
FUTURE PROSPECTS	0,145	0,011*	0,138	0,325	0,401
CARE FOR PHYSICAL FUNCTIONING	0,186	0,016*	0,077	0,314	0,533
CARE FOR MENTAL FUNCTIONING	0,072	0,009**	0,288	0,194	0,286
CARE FOR SOCIAL FUNCTIONING	0,167	0,004**	0,046*	0,361	0,551
CARE FOR SOCIAL FUNCTIONING	0,112	0,024*	0,045*	0,444	0,782

Note. \*  $p < 0,05$ , \*\*  $p < 0,01$

Source. Own research.

of illness, eliminates negative side effects, intensifies the effects of rehabilitation. Thus, support becomes additional force, besides natural forces, which serves to fight the illness, help in the recovery, or facilitate life with the illness (Kirenko, 2002). Adequate social support also helps to reduce the level of fear experienced by patients after the event of MI (Frasure-Smith et al., 1995), improves their well-being (Friedman, 1993), reduces the level of experienced stress (White, Frasure-Smith, 1995), and also has positive influence on patients' ability to cope with changes caused by cardiovascular illness (Moser, 1994).

The term „adequate” is justified here. The presented research suggests that people with low level of received support demonstrate considerably lower level of self-care than people with medium or high level of support. No such differences were noted between people with medium and high support. This suggests that social support has a significant effect on self-care level only for persons who previously experienced low level of support. Optimising the level of provided support seems to be one of the essential tasks facing cardiac rehabilitation professionals.

The analysis of the relationship between self-care and particular types of support indicates that informational support carries tremendous significance. Its positive effect is confirmed by other authors. According to Martin (1967), who studied the links between the range of medical information possessed by patients and the course of rehabilitation following the first infarction, those better-informed were characterised by more successful rehabilitation and more willingness to obey physician's recommendations. Moreover, they accepted their illness and its limitations to a greater degree.

Schwarz and Fiman (2003) surveyed patients with myocardial infarction and their carers whereby they observed the participants of the study for three months following the discharge from hospital. Within that period 44% of the patients were readmitted to hospital. The research proved that informational support on the part of the carer reduced the risk of readmission whereas high level of stress and depression of the carer increased that risk considerably. It is further supported by Blickem, Bower, Protheroe and collaborators who noted positive impact of information about the illness on the self-care of patients with vascular conditions (including ischaemic heart disease). However, they also identified certain factors which may reduce the influence. Clinical conditions (type of illness), environment, personal potential and learning styles are among them.

Earlier studies on people after MI lead to similar conclusions suggesting that patients receiving more informational support revealed more health-maintaining behaviours, which can be regarded as behavioural manifestation of self-care (Wilski, 2007). Informational support does not substitute the patient in performing daily activities but it provides knowledge how to do a particular activity so that it can lead the most favourable changes. It is, therefore, a factor which stimulates people to take care of themselves.

Taking into consideration the value of informational support for the formation of self-care, the role of health

care professionals as a basic source of information assumes special meaning. The conducted research proved that they are the most important support source for people with high level of self-care. Hence, medical personnel ought to be made aware that their activities are linked not only to benefits resulting from the duties they perform but also to permanent changes in patients' attitude towards themselves and the whole rehabilitation process. The process of educating patients who experienced myocardial infarction should be extremely helpful. Simultaneously, surveys show that knowledge of the illness is not a sufficient predictor of self-care level in patients with heart failure. People with high level of knowledge but low level of self-care tend to demonstrate higher level of depression, fear, and lower level of perceived control than others. Therefore, medical professionals should be made aware of the importance of monitoring also such factors as the level of depression and experienced fear (Hwang, Moser, Dracup, 2013).

In the case of the second type of support, namely, instrumental support, the situation is slightly different. Undoubtedly, instrumental support is needed by people who are ill and helps them to solve various problems. What is more, many research findings indicate that instrumental support is conducive to changes in the life style of cardiac patients (Boutin-Foster, 2005). It does not mean, however, that support leads to intensification of self-care. On the contrary, if all their tasks and chores are done for the sick by someone else it may lead to their conviction that they do not have to take care of themselves as everything they need is provided. Research shows that confidence in the self-care activities measured by the ability to recognise symptoms, apply remedial measures, and monitor one's health is correlated with the increase in the quality of life of people with heart failure (Britz, Dunn, 2010).

Some research results suggest that mismatched level of instrumental support can significantly weaken patients' own initiative and activity, by the same token, reducing the number of activities they undertake in order to improve their health (Hays et al., 1997). This also causes a reduction in the number of contacts of the supported individual with people other than family members and, in consequence, leads to withdrawal from social life (Schnall, 2005).

The presented assumptions are confirmed by the conducted research. Although the connection of instrumental support with self-care is not extensive we may notice that the relation of instrumental support is different from that of informational support. It turns out that instrumental support has the tendency to decrease the level of self-care in people with heart failure. Thus, we can assume that this type of support is unfavourable as it reduces patient's own activity making him/her believe they do not need to look after themselves because necessary help will always be provided. Hence, too much instrumental support may result in learned helplessness of the patient.

The last discussed type of support – emotional support is considered to be one of the most important potential resources of the patient as it allows the individual to cope with stress and lowered mood (Wrześniewski,

Włodarczyk, 2004). Berkman and collaborators (1992) studied a group of 194 women aged over 65 in order to determine the significance of emotional support offered to people after MI. It was established that low level of emotional support is strongly related to increase in mortality. On the other hand, Krumholz and co-authors (1998) proved that lack of a person who could give emotional support constitutes an independent risk factor for the occurrence of cardiological complications within a year after myocardial infarction.

The present research does not confirm that emotional support has such fundamental significance for self-care formation. Emotional support, to a slight extent, accounts only for care for social functioning variance.

Nevertheless, the conducted research has its limitations. Regression analysis of the general level of self-care proved that all types of support account for only 11% variance. This means that the remaining part of variance is in 89% a result of the influence of other variables. Clearly, subjective factors are crucial and identifying them should constitute the next step in studies on self-care attitude. However, it ought to be emphasised that determining the force with which support influences self-care was not the purpose of the present research. Rather, we aimed at identifying the mechanisms through which support can regulate the level of self-care.

Moreover, our study was cross-sectional, which precludes any conclusions about causal directions. Further research is needed to explore the dynamics of causal relationships between social support and self-care. Although we assumed that received support stimulates the patient to act, the opposite effect cannot be excluded. It would also be valuable to investigate individuals who do not participate in any kind of rehabilitation. Taking into account how many patients resign from rehabilitation after the infarction, perhaps we should regard the sole fact of undertaking rehabilitation as a basic indicator of self-care.

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