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SOURCES OF SOCIAL SUPPORT AND QUALITY OF LIFE IN CARDIAC PATIENTS

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Background

Material/ Methods:

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SUMMARY

Health related quality of life (HRQOL) in cardiac patients (CP) who have had myocardial infarction (MI) is the ultimate goal of every intervention to which the patient is submitted. One of the psychosocial factors that may contribute to HRQOL is social support (SS). This study sought to identify the relation between various sources of SS available during hospitalization following myocardial infarction (MI) and HRQOL two months later, and to identify the predictors of changes in HRQOL.

The study involved 50 patients hospitalized for their first MI, 43 to 80 years old, including 33 men (66%). The MI was uncomplicated in 82% of the patients; 86% had angioplasty. Psychological questionnaires were administered to assess sources of SS and HRQOL. The study was conducted in two stages: during hospitalization and two months later.

Improvement was found in all HRQOL dimensions during the 2-month observation period. Support given during hospitalization correlated weakly with HRQOL in stages I and II. HRQOL was significantly related to the particular source of support: professional support and family support predicted positive changes in general HRQOL, whereas other SS was a negative predictor. Various sources of SS affect various aspects of HRQOL: professional support facilitates physical and social improvement, whereas family support facilitates psychological improvement.

The analysed sources of SS are significant predictors of changes in HRQOL two months after MI. Support from various sources during hospitalization has a delayed effect and shows up in changes in HRQOL.

Key words: health-related quality of life (HRQOL), professional support, family support, myocardial infarction

INTRODUCTION

There are many approaches to the description and study of quality of life. There is now increasing concordance in the medical sciences concerning the general meaning of this concept. The main focus of attention is health-related quality of life (HRQOL), where health status is the main determinant (Fayers & Machin 2008, McGee 2004, Wrześniewski 2009). Quality of life may be either objective or subjective. Objective quality of life is assessed by external observers, who refer to various criteria and conditions of life. Subjective quality of life is the outcome of individual assessment (evaluation) of various areas of life, based on criteria which are important for the rater (Fayers & Machin 2008, Schizm 2009; Veenhoven 2004). Quality of life refers to three dimensions of human functioning: physical, psychological and social (some researchers also postulate a fourth, spiritual dimension) which together enable a holistic assessment of the patient's situation (the bio-psycho-social approach).

Contemporary trends in health care clearly indicate a high level of interest in the problems of quality of life, and cardiology seems to be setting the trend (Kawecka-Jaszcz et al. 2006). There are several reasons for this. First, HRQOL has become an element of therapy outcome evaluation. Information about the patient's functioning in various spheres of life has become a supplement to so-called hard indices (Schizm 2009). Secondly, it allows us to understand patients better, and hence to relate to them better, and have more influence on their approach to their illness (Ventegodt et al. 2005). Thirdly, not only has HRQOL proven to be an independent predictor of later quality of life, it is also a good predictor of such hard indices as cardiovascular death (Bosworth et al. 2000). Therefore, it makes good clinical and theoretical sense to look for the factors which affect HRQOL in MI patients, especially if we were to find that HRQOL can be improved at relatively low financial cost. One psychosocial factor which could be important is social support (SS) (Krostopferzon et al. 2005, Höfer et al. 2005, Taylor 2005). Social support can be roughly defined as help which is available to the individual in difficult situations (Lakey & Cohen 2000, Sęk & Cieślak 2004). The concept is more complex than that, however, and we need to be explicit about which SS facets we are going to study. The basic aspects of social support are presented below; only the aspects listed in the left column will be the focus of this study.

Received support is assessed either objectively or reported by the receiver as an actually received type and quantity of support.	Perceived support is a person's beliefs about where and from whom he/she can receive help in a difficult situation.
Structural support means objectively existing and available social networks which help people who are in difficult situations	Functional support applies to the functions and quality of the support process, i.e. giving and exchange of various resources.
Sources of support: - primary, e.g. family, friends, neighbours; - secondary, e.g., health service, superiors and colleagues at work, self-help groups	Types of support: instrumental, emotional, information, material and spiritual.

Source: based on Jaracz & Kozubski (2006) and Sęk & Cieślak (2004).

There has been very little research on the links between SS and QOL in MI patients, although this is now beginning to change, since some researchers think that differences in support are the main predictors of the variance of QOL in men and women (Gallicchio & Hoffman 2007). Published research to date has mainly dealt with the amount of social support, the types of support and/or its overall level, mostly analyzed from the perspective of perceived support (Bosworth et al. 2000, Gallicchio & Hoffman 2007). According to support theory, social support is good for us when there is good fit between received SS and the receiver's needs. Received support, in turn, is a function of availability of sources and types of support. Different sources are usually dedicated to giving specific types of support. MI patients who have many different sources of support at their disposal have a good chance of receiving support that is adequate to their needs and situation and, consequently, of reducing the risk of health and psychosocial complications or death (Lett et al. 2005).

The purpose of the present study was to determine the association between various sources of SS which are available during hospitalization for MI and quality of life, and the changes which take place in this association two months after discharge from hospital. Another important objective was to identify the predictors of change in HRQOL.

MATERIAL AND METHODS

Participants

The study was conducted on 50 patients hospitalized for first-time MI, ranging from 43 to 80 years of age ($M=62.02$, $SD=9.01$), including 33 men (66%). Fifty percent of the participants had STEMI and 50% had NSTEMI. In 82% of the cases the MI was uncomplicated, 10% of patients had arrhythmia, and 6% had left ventricular failure. The vast majority of participants received angioplasty (44% without stent implantation and 42% with stent implantation). Most patients were also being treated for other conditions (46% for one other condition, 18% for two or more). During their hospitalization, 48% of the participants were taking tranquilizers. The vast majority did not have post-hospital rehabilitation. The participants had various levels of education: 44% primary/vocational, 30% secondary, 26% higher. Their occupational status was as follows: 26% employed, 18% self-employed, 52% pensioners, 4% unemployed. Their marital status was as follows: married 68%, widowed 18%, divorced 10%, single 4%. Ten percent of the participants were childless, 22% had one child, and 68% had two or more children.

Instruments

Social support (the independent variable) was assessed with the Patient Support Scale by D. Włodarczyk, and quality of life (the dependent variable)

was assessed with the Polish adaptation of the MacNew Heart Disease Health-Related Quality of Life Questionnaire by N. Oldrige and L. Lim (cf. Höfer et al. 2004). The Patient Support Scale was constructed on the basis of the Social Support Scale (SWS-8) by R. Cieślak (Markiewicz 2005). This scale has 10 items pertaining to various forms of help (e.g. "How often were you informed about your current state of health?"). The respondent rates various types of support received from 5 sources: physicians, nurses, family, other patients, and friends from outside the hospital. Ratings are made on 5-point scales from 1 (never) to 5 (very often). The level of support from 5 sources (5 subscales) and 3 types of support (3 subscales) can thus be calculated. Cronbach alpha coefficients for the source of SS subscales range from .77 to .93, attesting to the instrument's good reliability. In the studied sample, the scores for some sources of support correlated with one another. The highest correlations were obtained between physician and nurse support – $r(49)=.85$; $p<.01$ – and between other patients and friends support – $r(49)=.64$; $p<.01$). The remaining correlations were weak or insignificant. The MacNew Heart Disease Health-Related Quality of Life Questionnaire assesses HRQOL in cardiac patients. This is a so-called specific instrument, i.e. it is dedicated to a specific group of patients. It contains 27 questions dealing with three dimensions of quality of life rated from the perspective of the last two weeks: physical dimension (e.g. "How often ... have you experienced 'shortage of breath' during your everyday physical activities?"), psychological dimension (e.g. "How often ... have you felt frightened or insecure?" and social dimension (e.g. "How often ... were you unable to socialize because of heart problems?"). Participants responded on seven-point scales from 1 (all the time) to 7 (never). A global HRQOL score can also be computed by adding up each score and dividing the result by the number of items to which the respondent has responded. The MacNew has good or very good reliability and validity (Höfer et al. 2008) and the factorial structure of the Polish adaptation concurs almost completely with the structure of the original version (Wrześniewski 2009).

Procedure

This was a prospective, two-stage study. In stage one, hospitalisation, respondents completed the Patient Support Scale and the MacNew within a few days of their MI, and their consent to be tested a second time and their telephone numbers were requested. In stage two, about two months after MI (individual contact by telephone), respondents completed the MacNew. All participants who took part in stage one agreed to participate in stage two. The study was conducted on cardiac wards in 2009. Participation was anonymous and voluntary.

RESULTS

Prior to the analysis proper, we first checked whether the controlled medical and socio-demographic variables correlated with HRQOL in both stages of the study. We found that taking tranquilizers correlated significantly with psychological HRQOL in stage one – $t(49)=2.08$; $p<.05$, in that participants who were not taking tranquilizers had better quality of life than participants who were taking tranquilizers; $M=3.77$ ($SD=.64$) and $M=3.43$ ($SD=.51$) respectively. Age correlated negatively with physical HRQOL but only in stage one – $r(49)=-.37$; $p<.01$ – not in stage 2. Occupational status correlated with all dimensions of HRQOL in stage 2 (see Fig. 1).

When the means were compared we found that self-employed participants had the highest quality of life scores on all three dimensions, whereas employed participants had the lowest scores (the unemployed were not included due to their small number).

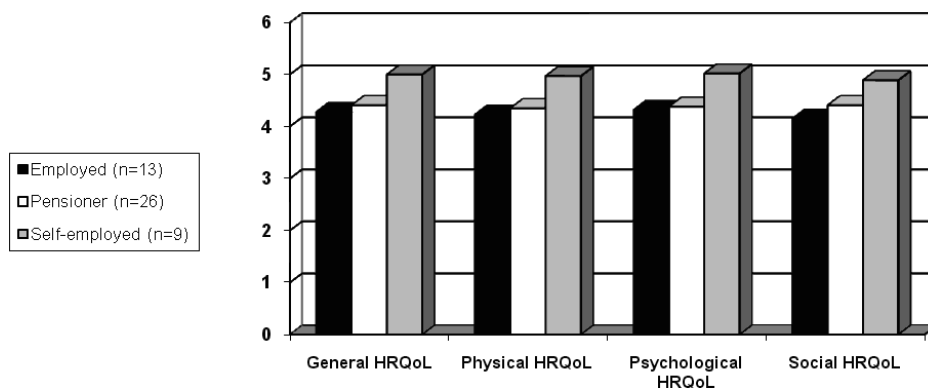


Figure 1. Professional status and quality of life, stage two (N=50)

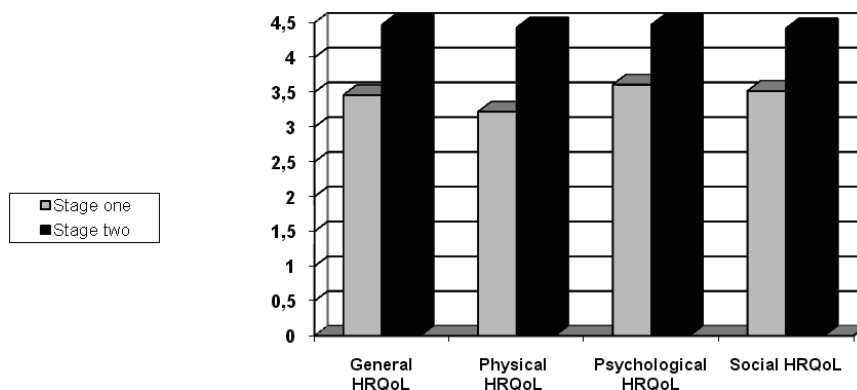


Figure 2. Changes in HRQOL dimensions between stages one and two (N=50) (all differences are significant at $p<.001$)

We then checked whether anything had changed two months after MI (see Fig. 2).

Changes occurred in all HRQOL dimensions within the two months of observation. Mean HRQOL scores increased, indicating improved quality of life.

We then looked at the relations between sources of SS and the various HRQOL dimensions in stage one and stage two. We found that support given during hospitalization hardly correlated with HRQOL during hospitalization (see Table 1). Significant correlations were only found for two sources of SS. Friend support correlates significantly with all aspects of quality of life. Fellow patient support is related to general HRQOL, mainly due to the correlation with physical HRQOL. These correlations are positive and are either moderate or weak.

When we tested the relation between SS during hospitalization and quality of life two months later, we found that family SS had the highest correlation (see Table 2).

Family support correlated positively with all the HRQOL dimensions. A weak correlation was also found between friend support and physical quality of life.

As stated earlier, the participants' HRQOL improved significantly within two months of discharge from hospital. We therefore checked whether this change was related in any way to social support from the studied sources. We analyzed the correlations between sources of SS and differences in the levels of the various dimensions of HRQOL in the initial testing (stage one) and two months later (stage two) (see Table 3).

As we can see from the data presented in Table 3, change in quality of life correlated significantly with the SS sources of physicians, nurses and family.

Table 1. Sources of social support and quality of life, stage one (N=50)

HRQOL dimension	Sources of support				
	Physicians	Nurses	Family	Other patients	Friends
General HRQOL	-.13	-.21	.18	.28*	.36**
Psychological HRQOL	-.12	-.15	.19	.16	.31*
Physical HRQOL	-.04	-.15	.23	.40**	.37**
Social HRQOL	-.16	-.24	.12	.22	.29*

Notes: *p<.05 **p<0.01

Table 2. Sources of support during hospitalization and quality of life, stage two (N=50)

HRQOL dimension	Source of support				
	Physicians	Nurses	Family	Other patients	Friends
General HRQOL	.19	.14	.44**	.17	.28
Psychological HRQOL	.16	.09	.47***	.13	.25
Physical HRQOL	.26	.22	.44**	.23	.29*
Social HRQOL	.16	.13	.33*	.16	.24

Notes: *p<.05 **p<.01 ***p<.001

Physician support correlated with positive change in all HRQOL dimensions. Nurse support correlated with improved physical and social HRQOL, and family support correlated with improved psychological HRQOL. It is worth noting that the insignificant correlations between friend SS and fellow-patient SS on the one hand and all HRQOL dimensions on the other hand are negative.

The presented correlations between the sources of SS and changes in quality of life treat the sources of SS as if they were independent and isolated. We know, however, that actually they are not and the patient can have several coinciding sources of support. We therefore need to check whether the sources of support analysed in this study would predict change in HRQOL better if they were analysed together. In order to do this, we conducted a multivariate regression analysis. For such an analysis to be legitimate, several conditions must be met, i.e. both the independent and dependent variables must have normal distributions (they do); there must be a sufficient number of participants per predictor (at least 15) and the predictors (sources of support) must not correlate with each other too strongly (Bedyńska & Brzezicka 2007). As stated earlier, the different sources of support

Table 3. Sources of social support and changes in quality of life (Pearson r correlations) (N=50)

HRQOL dimension - difference (R)	Sources of support				
	Physicians	Nurses	Family	Other patients	Friends
General HRQOL – R	.34*	.35*	.30*	-.10	-.05
Psychological HRQOL –R	.29*	.27	.33*	-.01	-.03
Physical HRQOL – R	.29*	.37**	.19	-.19	-.03
Social HRQOL – R	.34*	.40**	.24	-.06	-.05

Notes: *p<.05 **p<.01

Table 4. Predictors of changes in HRQOL – regression analysis (N=50)

Predictors	B	SE B	t(p)	B	F(p)	R ² corr.
1. General HRQOL						
Medical staff	.03	.01	2.06**	.28	5.40**	.21
Family	.03	.01	2.59**	.43		
Other people	-.04	.02	- 2.47*	-.40		
2. Physical HRQOL						
Medical staff	.04	.02	2.30*	.32	5.05**	.20
Family	.03	.01	1.99 †	.33		
Other people	-.05	.02	- 2.71**	-.43		
3. Emotional HRQOL						
Medical staff	.02	.02	1.39	.19	4.45**	.17
Family	.03	.01	2.74**	.47		
Other people	-.04	.02	- 2.19*	-.36		
4. Social HRQOL						
Medical staff	.04	.01	2.47*	.34	4.45**	.18
Family	.02	.01	1.77	.30		
Other people	-.03	.02	- 1.98†	-.32		

Notes: B – nonstandardized regression coefficient; SE B – standard error B; t(p) – outcome of test of significance of B and level of significance of p; β – standardized regression coefficient; F – statistics testing significance of the regression model; R² corr. – percent of explained variance corrected for number of predictors; **p<.01; *p<.05; †p<.06.

did correlate with each other in the analyzed sample (particularly physician and nurse support and friend and fellow-patient support). In this case it was necessary to create more composite indices. We averaged the scores for the correlated scales and created two new indices, medical staff SS and other SS (excluding family). This way, we reduced the analyses to three sources of social support: medical staff, family, and other people, and now met the basic requirements for the regression analysis. Such a procedure also conforms to the suggestions of some authors, who say that professional support should be clearly separated from informal sources of support (e.g. van Sonderen & Sanderman 2001). We entered our new predictors into the regression model and analysed them for each HRQOL dimension. The results are presented in Table 4.

As we can see in the first part of Table 4, the model with three predictors fits the data well (significant F) and accounts for 21% of the variance of the dependent variable, general HRQOL. Professional support and family support are positive predictors, which means that the more support, the greater the improvement of general quality of life. Support from other sources is a negative predictor, which means that the more of it patients received during their hospitalization, the less improvement there was in their quality of life two months later. The next parts of the table show us which sources of SS have a significant effect on the different dimensions of HRQOL. As we can see, the presented regression models also fit the data well, but their significance varies depending on the predictor. Significant predictors of physical quality of life are professional support (positive) and other support (negative). Significant predictors of emotional quality of life are family support (positive) and other support (negative). The most significant predictor of social quality of life is professional support (positive).

We then checked whether these relations would also emerge when we entered the controlled medical and socio-demographic variables into the regression model. None of these factors was a significant predictor of change in HRQOL in the regression models and none of them modified the previous findings.

DISCUSSION

This study demonstrated that the analyzed sources of SS are significant predictors of changes in HRQOL two months after MI (they account for 21% of the variance of this change). The effects of these sources during hospitalization (although not always directly targeted at improvement of quality of life) are delayed and show up in changes in HRQOL. These effects cannot be observed in cross-section analyses. This gives us some insight into the mechanisms of SS. For example, someone who receives support in any form needs some time to assimilate it and use it as needed (for example, to assimilate new information concerning the illness, learn new skills and restore hope

that return to active life will be possible). Höfer et al. (2005) also found that the importance of SS increases with time and conclude that it is possibly less important in the acute phase of illness and gains importance later, when one must cope with the condition.

Different sources of social support affect different aspects of HRQOL. Professional support helps to improve physical and social HRQOL whereas family support helps to improve psychological HRQOL. It is worth recalling here that physicians' support and nurses' support are highly correlated, which may suggest that patients perceive the work of these two professional groups rather similarly. Their roles are intertwining and complementary in their daily routine and, as far as the patient is concerned, what is probably most important is that information, instruction and comforting words are coming from a professional. It is no wonder that professional support helps to improve the physical dimension of HRQOL. What is more interesting is that it also has a positive effect on the social dimension, i.e. reassuming social roles, engaging in new activities, and becoming more self-sufficient and independent (Pachalska 2008). This finding is very important because it just shows how deeply doctors and nurses penetrate the patient's private life. Family support improves psychological HRQOL, i.e. self-esteem, self-confidence, reduction of negative affect and enhancement of positive affect. What this seems to demonstrate is that the presence of one's relatives at the bedside serves an ulterior function – recovery in the broad sense. On the other hand, support from other people – friends and other patients – has a negative effect on HRQOL. Why does support from these sources lead to poorer physical and emotional HRQOL? Friends may indeed have a detrimental effect if they are professional colleagues. They may stimulate comparisons between the patient's post-MI health status and the situation of healthy others at that particular time of life: healthy colleagues are living as before and reaching for new challenges, and this may make the patient bitter, sad and angry. Contact with other patients, seeing how they suffer, hearing their complaints can make the patient feel more depressed and helpless. This effect can be particularly pronounced in patients who have no other source of support than friends and other patients. Garcia et al. (2005) also found a negative effect of SS (instrumental support led to greater risk of invalidism in male patients). These results cause us to reflect on the possible negative effects of social support, particularly when the lack of fit between this support and the patient's current needs is a problem.

Most existing research suggests that women have worse HRQOL than men following MI and that quality of life is worse in older people than in younger people. No significant relations between the socio-demographic variables and HRQOL were found in the present study, nor did these variables modify the predictive role of SS. One reason for this discrepancy may be the small sample size and its homogeneity with respect to both medical and socio-demographic variables. We must therefore be cautious about the limitations

of the present study and refrain from unwarranted generalization of its findings. The present study did, however, produce some very valuable data which may have practical utility, and continued research in this direction is recommended. It would be particularly advisable to identify the types of social support which different sources have to offer and to see whether a more in-depth analysis of this problem would contribute to better explanation of changes in HRQOL. It would also be good to control other factors which may affect changes in HRQOL such as cardiological rehabilitation, return to work or significant life events.

CONCLUSIONS

The present study lends support to the following conclusions:

The analyzed sources of SS are significant predictors of change in HRQOL within two months of MI (they account for 21% of the variance of this change).

The impact of these sources during hospitalization is not immediately evident. It is delayed and only shows up in later change in HRQOL. This impact cannot be seen in cross-section analyses.

Different sources of SS affect different aspects of HRQOL: professional support is conducive to improved physical and social quality of life, and family support is conducive to better psychological quality of life.

Support from other people, including friends and other patients, has a negative effect.

In the studied sample, the controlled medical and socio-demographic variables had no significant effect on HRQOL and their presence did not modify the predictive role of sources of SS in the regression analysis.

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