Archives of Psychiatry and Psychotherapy, 2017; 4: 42–50

DOI: 10.12740/APP/78497

Marital relations of patients with myocardial infarction from the spouses' perspective

Swetlana Mroz, Barbara Betkowska-Korpala, Krzysztof Gierowski, Malgorzata Kolpa, Bernadetta Janusz

Summary

A myocardial infarction can result in disrupting the entire family system and requires reorganization and adaptation in order to ensure proper functioning of a marriage.

Aims: The study aimed to compare functioning of the marital dyad before and after myocardial infarction from the perspective of the patient's spouse. Gender differences are taken into account in the assessment of the relationship dyad.

Materials and method: Respondents (60 spouses: 17 men, 43 women) assessed the functioning of the marital dyad using the Family Assessment Questionnaire (modified by Cierpka). The first group of respondents (N=30) was tested in the period immediately after a heart attack, and the spouses assessed functioning in the period before the heart attack. The second group (N=30) was tested over 1 year after a heart attack.

Results: The results in both groups show a satisfactory level of marital relationship. Spouses in the second group assessed the overall marital functioning and functioning in four dimensions as worse compared with respondents in the first group. Gender differences were also reported.

Conclusion: From the spouses' perspective the functioning of the marital dyad after a myocardial infarction was worse than before the illness. One of the reasons could be the near death experience of the patient and a necessity to adapt the family life to the new situation. Family context is very important for recovery after a myocardial infarction and it seems sensible to include the patient's spouse in psychotherapeutic work. Marital relations were more negatively assessed by women.

marital relations, gender, myocardial infarction

INTRODUCTION

Coronary heart disease, including myocardial infarction, is a major threat to health and a leading cause of death from all noncommunicable disease deaths in the world (WHO report, 2014). Relationships between psychosocial factors and coronary heart disease are bi-directional. On the one hand, psychosocial factors are important in the development of coronary heart disease [1], and on the other – experiencing myocardial infarction has many psychological effects. To aid prevention after the illness has occurred, the patient must make changes not only in his or her lifestyle, but also in the functioning of their whole family. Studies show the influence of family ties on treatment [2–4]. The most important

Swetlana Mroz[1], Barbara Betkowska-Korpala[1], Jozef Krzysztof Gierowski[2], Malgorzata Kolpa[3], Bernadetta Janusz[4]: [1]Department of Medical Psychology, Chair of Psychiatry, Collegium Medicum, Jagiellonian University, Krakow, Poland; [2]University of Social Sciences and Humanities[3]Institute for Health Protection, State Higher Vocational School (PWSZ), Tarnow, Poland; [4]Department of Family Therapy, Chair of Psychiatry, Collegium Medicum, Jagiellonian University, Krakow, Poland

Correspondence address: swet.mroz@gmail.com

tasks of the spouse in this context include providing emotional, instrumental and information support [5]. The spouse, as the closest person, is most vulnerable to changes resulting from the illness. The more reorganization in the life of the patient due to their illness, the more other family members are influenced [6].

Spouses must adapt to the new situation [7–10]. Focus on the needs of the patient is often observed, and the emotional costs of a life-threatening experience which could destabilize patient functioning [11] are also visible in the spouse. Studies have shown that patients' spouses react more negatively to myocardial infarction than patients themselves [12]. Men whose spouse had a fatal or nonfatal myocardial infarction evinced relatively higher risk of depression than women [8]. Other studies on the relationship between gender and depressiveness of spouses of patients with coronary artery disease indicated that women experience greater emotional tension [13,14]. It was also shown that approximately 50% of the wives of patients after myocardial infarction were diagnosed with mild depression [15]. In the assessment of changes in the level of depression in the spouses of patients within 2 years of myocardial infarction it was found that the depression intensified, despite its low level and strong social support in the first measurement [10]. It was also found that younger wives (less than 55 years old) manifest more emotional and somatic symptoms than older wives (more than 55 years old) [16].

After diagnosing coronary heart disease spouses are expected to undertake activities in relation to patient after-care and assistance, and therefore the healthy spouse takes over the responsibility for the functioning of the family [17]. Reorganization of family roles takes place in the first period of illness and involves, among others, the tasks of the patient being performed by the healthy spouse [18,19]. Older spouses adapt better to illness in the family than younger spouses but the degree of coping deteriorates over time [7]. The same study showed that the spouse's effectiveness in coping increases over time.

In summary, adaptation issues experienced by patients' spouses are relevant for assessment of marital relation functions. Although, marital relations during treatment and recovery have been appreciated more in recent years [20], not enough attention is being dedicated to patients' spouses.

METHOD

The aim is to compare the assessment of marital relations before and after a heart attack from the perspective of the patient's spouse, taking into account gender differences. Specific research questions were:

- Are there any differences in the functioning of the marital dyad before and after myocardial infarction in patients from the perspective of spouses, and in what dimension?
- Are there any dependencies between age and assessment of marital dyad functioning?
- Are there any dependencies between years of marriage and assessment of marital dyad functioning?
- Are there any differences in the assessment of marital dyad functioning before myocardial infarction in patients from the perspective of wives and husbands, and in what dimension?
- Are there any differences in the assessment of marital dyad functioning after myocardial infarction in patients from the perspective of wives and husbands, and in what dimension?

The study was part of a research project under the statutory program entitled 'Psychological adaptation of subjects with somatic diseases and health behaviors in the treatment process – clinical studies in selected groups of patients' (K/ZDS/00421) in the Department of Medical Psychology, Chair of Psychiatry, Jagiellonian University, Krakow, Poland.

Study sample

Sixty spouses of patients who have experienced a myocardial infarction were tested: 17 men and 43 women (proportions adequate to epidemiological indicators of cases). The age of spouses in the whole study group ranged from 34 to 68 years (men 39–68, M=55.4, SD=8.1; women 34–66 years, M=51.8, SD=8.2).

Tests were performed on two groups of 30 participants each. Spouses of patients diagnosed with acute or past myocardial infarction were qualified for research. The first group (M=8, F=22) was tested directly (3–5 days) after the myocardial infarction of their spouses and, according to instructions, assessed a period before the heart attack. The second group was studied over 1 year from the occurrence of a heart attack in their spouses.

Spouses were in a stable relationship (years in marriage: 5 to 43), lived together and in the majority of cases had children (4.88% no children, 17.07% one child, 48.78% two children, 29.27% three or more children). None of the patients or their spouses had a history of psychiatric treatment. All respondents expressed informed consent to participate in the study and could withdraw at any time.

Research tool

The study used the Familienbögen Questionnaire adapted by Manfred Cierpka and Gabriel Frevert [21,22]. The Family Assessment Measurement (FAM) consists of several subscales and describes dynamic interaction between family members in key areas of the family system. This study only used the Dyadic Relationship Sheet which explores the following dimensions of the dyad functioning: task accomplishment, role performance, communication, emotionality, affective involvement, control, values and norms. The characteristics of the studied dimensions are given in Table 1 [22,23]. Apart from these, a general scale is determined which consists of the sum of the basic seven dimensions.

Table 1. Characteristics of the dimensions of the Dyadic Relationship Sheet in the Family Assessment Measurement

Dimension of the Dyadic Relationship Sheet	Characteristics
Task Accomplishment (TA)	Way of the family coping with the basic daily tasks, tasks related to the psychosocial development of individual family members, according to the phases of the family development, as well as crisis tasks.
Role Performance (RP)	Repetitive patterns of behaviour in the family requiring cooperation and / or complementarity of the family members in different types of activities. Changing the role of one family member entails changing roles of other members.
Communication (COM)	Exchange of information between family members taking into account its complementarity and the level of distortion, provided verbally and through gestures, facial expressions, moods.
Emotionality(E)	The range of emotions defined and approved in the family. In order for the emotionality to be appropriate, the sense of belonging, confidence, security and multilateral respect for values are important.
Affective Involvement (AI)	The level of mutual emotional involvement of family members and the clarity of boundaries between subsystems. In this dimension, at one end there are narcissistically uninvolved families and at the other, there are families appropriately responding to each other emotionally.
Control (C)	This involves the appropriate maintenance of the functions of the family and the adjustment process. The first relates mainly to the instrumental roles and tasks in the family. In contrast, the adjustment process depends on the strength of the mutual influence of individual members of the family on each other and on the presence of responsibility, constructiveness and communicativeness in mutual relations.
Values and Norms (VN)	This dimension determines whether the quality of other dimensions is assessed by the family as appropriate or inappropriate, and also serves moral valuation.

The Dyadic Relationship Sheet consists of 28 statements. For each question, the participant chooses one of the four possibilities, adjudicating the correctness of the statements about their relationship with the spouse. The responses are matched to values from 0 to 3, where 0 ('I fully agree') is the desired condition, and 3 ('I fully disagree') is the undesirable condition. The

lower the result in a given dimension, the better the person functions in it. The value of 1.5 is the final borderline between positive results (lower) and negative results (higher). Positive results (desired) are those that evidence at least a 'satisfactory level of functioning' [22]. The Cronbach's alfa reliability indicator for general scales and in all of the sheets is higher than α=0.80.

Statistical analysis

All statistical analyses were performed using STATISTICA 10.0. In the case of the normal distribution of variables, groups were compared by the Student's *t*-test. When the distribution of variables differed from normal, significance analyses were performed using the Mann–Whitney *U*-test. ANOVA variance analysis was used for the analysis of the differences between men and women. Additionally, Spearman correlation tests were performed to validate dependencies between: (a) age and assessment of marital dyad functioning, and (b) years of marriage and assessment of marital dyad functioning. Significance was set at $p<0.05$.

RESULTS

Differences considering age and years of marriage

A comparison of marriage functioning was performed in groups and the relationships were assessed before and after a heart attack from the perspective of the spouse. The overall result (OR) as well as the results in emotionality (E), affective involvement (AI), control (C) and the values and norms (VN) of spouses of patients diagnosed with acute myocardial infarction (group I; period before a heart attack) are significantly lower than the results obtained by spouses of patients with past myocardial infarction (group II). In addition, all other dimensions of marital relationships were assessed by the spouses of patients in group II. The results of these analyses are shown in Table 2.

Table 2. Analysis of the results of the Dyadic Relationship Sheet

Dyadic Relationship Sheet	Group I		Group II		Statistical analysis		
N	30		30				
	M	SD	M	SD	T	U	p
The overall result	0.95	0.48	1.25	0.46	-2.533	-	0.014
Task Accomplishment	1.3	0.71	1.48	0.59	-1.036	-	0.305
Role Performance	1.11	0.66	1.37	0.59	-1.609	-	0.113
Communication	1.06	0.49	1.23	0.31	-	327	0.070
Emotionality	0.91	0.45	1.23	0.48	-	255	0.004
Affective Involvement	0.53	0.45	1.08	0.74	-3.427	-	0.001
Control	0.87	0.6	1.22	0.48	-2.507	-	0.015
Values and norms	0.88	0.6	1.19	0.44	-	302	0.029

A significant majority of spouses of patients in group I presented good functioning in all dimensions of the marital relationship. On the other hand, in group II the dimensions of task accomplishment and role performance were assessed as unsatisfactory (Table 3).

Table 3. Results of the Dyadic Relationship Sheet considering good and poor functioning

Dyadic Relationship Sheet	Group I		Group II	
Number	30		30	
	< 1.5	≥ 1.5	< 1.5	≥ 1.5
The overall result	83.33%	16.67%	76.67%	23.33%
Task Accomplishment	53.33%	46.67%	33.33%	66.67%
Role Performance	63.33%	36.67%	46.67%	53.33%
Communication	86.67%	13.33%	70.00%	30.00%
Emotionality	83.33%	16.67%	70.00%	30.00%
Affective Involvement	93.33%	6.67%	60.00%	40.00%
Control	76.67%	23.33%	53.33%	46.67%
Values and norms	86.67%	13.33%	60.00%	40.00%

No dependence was observed between age or years of marriage and the assessment of marital dyad functioning. This means that spouses from group II assessed their marital relationship significantly worse. This is related to the duration of illness and the fact of the spouse becoming the patient's caregiver, but it is dependent neither on the spouse's age nor years of marriage.

Gender differences in marital dyad assessment before infraction

Gender differences were analyzed in the group of patient spouses assessing the period before a heart attack. Women received a higher overall result (OR) and assessed several dimensions of marital dyad functioning significantly worse than men did: task accomplishment, role performance, communication, affective involvement, control and values and norms. Women also assessed other dimensions of marital dyad functioning as worse. A significant majority of men (75%; and 100% in 5 out of 7 dimensions) assessed relationship functioning as good, however, 54.55% of women assessed task accomplishment as not satisfactory and 50% assessed role performance as not satisfactory. The results are shown in Table 4.

Table 4. Group I results on the Dyadic Relationship Sheet by gender and considering good and poor functioning

Assessing the period before a heart attack										
	Man (N=8)				Woman (N=22)				ANOVA	
Dyadic Relationship Sheet	M	SD	< 1.5	≥ 1.5	M	SD	< 1.5	≥ 1.5	F	p
The overall result	0.56	0.3	100.00%	0.00%	1.09	0.46	77.27%	22.73%	9.134	0.005
Task Accomplishment	1	0.33	75.00%	25.00%	1.41	0.79	45.45%	54.55%	1.990	0.169
Role Performance	0.56	0.4	100.00%	0.00%	1.31	0.62	50.00%	50.50%	9.881	0.004
Communication	0.75	0.57	75.00%	25.00%	1.17	0.42	90.91%	9.09%	4.903	0.035
Emotionality	0.75	0.19	100.00%	0.00%	0.97	0.51	77.27%	22.73%	1.353	0.255
Affective Involvement	0	0	100.00%	0.00%	0.73	0.37	90.91%	9.09%	30.341	<0.001
Control	0.5	0.33	100.00%	0.00%	1	0.63	68.18%	31.82%	4.500	0.043
Values and norms	0.31	0.44	100.00%	0.00%	1.09	0.51	81.82%	18.18%	14.665	<0.001

Gender differences in marital dyad assessment after infraction

There are significant gender differences among the spouses of patients with past myocardial infarction in all dimensions of marriage functioning. Women assessed their marital relationships much worse than men did. The majority of men assessed relations functioning as good in all dimensions, however, for most women areas of task accomplishment, role performance and control were poor. The results are presented in Table 5.

Table 5. Group II results on the Dyadic Relationship Sheet by gender and considering good and poor functioning

Previous myocardial infarction										
	Man (N=9)				Woman (N=21)				ANOVA	
Dyadic Relationship Sheet	M	SD	< 1.5	≥ 1.5	M	SD	< 1.5	≥ 1.5	F	p
The overall result	0.83	0.43	88.89%	11.11%	1.44	0.34	71.43%	28.57%	17.140	<0.001
Task Accomplishment	0.78	0.42	88.89%	11.11%	1.77	0.34	9.52%	90.8%	46.130	0.000
Role Performance	0.92	0.52	88.89%	11.11%	1.56	0.51	28.57%	71.43%	9.901	0.004
Communication	1.03	0.4	77.78%	22.22%	1.31	0.22	66.67%	33.33%	6.105	0.020
Emotionality	0.87	0.42	100.00%	0.00%	1.38	0.42	57.14%	42.86%	9.205	0.005
Affective Involvement	0.53	0.67	77.78%	22.22%	1.31	0.65	52.38%	47.62%	9.0449	0.006
Control	0.78	0.42	100.00%	0.00%	1.41	0.37	33.33%	66.67%	17.030	<0.001
Values and norms	0.93	0.59	77.78%	22.22%	1.31	0.31	52.38%	47.62%	5.602	0.025

DISCUSSION

In response to the first question, study results indicate a much worse assessment of the marriage relationship among spouses of patients with a history of myocardial infarction at least 1 year earlier, as compared with spouses assessing the period before the heart attack (acute). These results correspond with the results of a study involving a group of marriages of patients (men) with coronary heart disease as well as other clinical groups, which indicated that spouses of patients assessed their marital relationship as worse than the control group [2–4,23]. Worse functioning is not associated with selected sociodemographic factors such as age or years of marriage, similarly to other studies [24]. It should be noted that a few studies involving partners of patients are consistent with the observations made by practitioners – doctors and clinical psychologists who talk to the patients' families are faced with spouses who feel discomfort and fatigue even if the patient functions well (personal communication; further information available from the author on request). This is driven by the fact that they do not receive professional support themselves and their personal needs are left unfulfilled or are de-prioritized [25,26]. Clinical observations indicate that the spouses' functioning is often disorganized, which might be due to their focusing on the health of the patient and the necessary reorganization of family life so as to make the process of recovery the most optimal. This interpretation is also based on the results of the present study. At first, spouses assessing their marriage at least 1 year after a heart attack had a lower sense of security compared with spouses assessing the period before the heart attack. Spouses who have been caregivers for longer (group II) had a lower sense of control, which is affecting their level of satisfaction in their marriage [27]. The illness and its symptoms may be a threat to the stability of feelings in the marriage and the marital dyad becomes disorganized, resulting in inconsistencies in the system of values and standards. That is, marital relationships after myocardial infarction are characterized by lower coherence of their system of values, which may be associated with confusion, strained relationships, limited freedom of activity and explicit rules of behavior being replaced with hidden ones.

In the dimension of task accomplishment the difference between the two groups has been observed only as a trend but this trend showed the same direction. This result also reveals that the patient's illness interferes with the existing functioning of the dyad in the context of daily life activities, aims and ways of coping with difficult situations, which can be a burden for both spouses [28]. The patient focuses on the recommendations of the treatment team, dealing with emotions, anxiety and sometimes depression, introducing pro-health changes in their life. What is more, according to research, patients are convinced that their family has adapted to a new situation [16], while in fact both spouses were forced to reconcile their previous roles. Lack of support can affect the functioning of the patient's spouse and can become a burden. If they do not feel they are sufficiently supported (both emotionally and practically) by the environment, their functionality can worsen and, in extreme cases, this can lead to illness [29].

In the context of the research question related to differences in the assessment of the functioning of marriage from the perspective of women and men (patient spouses), several areas should be considered. Female spouses assessed the functioning of the marital dyad as significantly worse than male spouses. This trend was the same in both groups, i.e. before and after a heart attack. Thus, from the perspective of women, marital functioning was dysfunctional regardless of the time of illness onset.

Research results indicating a worse assessment of marriage functioning by women as compared with men in the period before the illness may have various interpretations. One possible interpretation is understanding the marital situation in the context of type A personality (TAP) as a factor not only conducive to coronary disease in men but also indicating a specific way of functioning in close relationships [30]. Men with type A personality are more focused on professional objectives and tasks than on taking care of family relationships. It may thus be expected that the future patients' wives experience marital problems and are involved more than the men in the development of the family system and taking care of the relationships in it. The results obtained in the period after myocardial infarction among women from group II indicate a significantly worse functioning of the marital relationship in all dimensions. This difference in results can be explained by gender issues: women see care in the emotional dimension of family relationships, while men relate care to creating family safety [31], so the situation after a life threatening illness can be especially demanding for female spouses. Moreover, caregivers who have been focusing on a problem-oriented style for providing support cope with illness in a family member much better than those who have been using emotion-focused coping style [24]. Supporting a sick person can be associated with many changes in their personal life (fatigue, lack of sleep), emotional life (compassion for the close person, anxiety, tension, anger, which lead to burnout) and social life (limited professional career and social contacts, which leads to social isolation). But there is also joy and a sense of accomplishment. Therefore, it would seem that the psychosocial differences between men and women determine their different functioning styles as caregivers. Nevertheless, this topic is still relatively unknown and further studies are required to clarify these issues in a more precise manner.

Conclusions and practical implications

From the perspective of the spouse, functioning in the marital dyad after a heart attack is generally assessed worse than before. The reasons for this can include experiencing a life-threatening situation and an ensuing need for reorganizing the family system, among others, taking over the tasks of the patient by the healthy spouse and accepting a caregiver's role.

Male and female spouses of patients after myocardial infarction differ in the assessment of the functioning of the marital dyad. Women assessed their marital relationship as worse both before and after the heart attack in their spouse.

It is important to take into account the context of marriage in the recovery process of patients after myocardial infarction. Spouses are often left without professional support and have to adjust their previous lives and responsibilities to the requirements related to their partner's treatment. Worse functioning of marriage in the assessment of the spouse of the sick person can,

in the long run, result in physical and mental exhaustion of the caregiver, and even their illness. Therefore, it seems reasonable to extend psychological support onto the spouses of patients through the application of consulting or short-term forms of couples' therapy in order to reach optimal adaptation of the family in crisis.

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