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Patients benefit – partners suffer?

The impact of heart transplantation on the partner relationship

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Abstract Terminal heart disease affects not only the patient, but also members of the patient's family, and especially the spouse. The aim of this prospective study of 26 couples was to collect information about the impact of heart transplantation on the partner relationship. Data were collected from patients and spouses when the patients were placed on the waiting list for transplantation, 1 year postoperatively, and 5 years postoperatively. The Family Assessment Measure (FAM III), a self-report instrument that provides quantitative indices of family functioning on seven interacting dimensions, was used. In the course of the transplant process, both patients and spouses reported a significant deterioration in the partner relationship in general. While patients perceived only one clear-cut point of conflict – communication about emotions – as crucial, the spouses reported a significant worsening in role performance, communication, emotional involvement, and values and norms. These changes were discernible 1 year after transplantation and persisted for at least 5 years. We conclude that heart transplantation has a significant negative impact on the partner relationship 1–5 years after transplantation. Consequently, more attention should be paid to all aspects of the partner relationship in a holistic approach to the treatment of heart transplant recipients and their partners.

Key words Heart transplantation, partner relationship · Partner relationship, heart transplantation

Introduction

Disease and coping with disease are matters that concern more than just the individual patient. Terminal heart disease, with all of its somatic and psychosocial consequences, affects both the patient and the family members, especially the partner. Although the disease exclusively threatens the patient's life expectancy, it certainly impairs the quality of life of both partners, forcing them to learn to adapt in order to cope with the new situation. There is evidence from numerous studies that the support provided by the partner, family, friends, and colleagues (defined as "social support" in the 1970s [6, 12, 15, 46, 47]) substantially influences the development of chronic disease and the ability to cope with its consequences. Several studies [8, 18, 25, 34, 35] provide descriptive accounts emphasizing the significance of the primary family caregiver – typically the spouse – in influencing and moderating the patient's psychological adjustment following life-threatening health events. Most of these studies deal with the importance of the partner in the patient's recovery process after myocardial infarction [19, 28, 41]. It has been shown that the partner's social support is one of the most important factors in mastering the experience of a coronary bypass operation. The partner's support also significantly reduced the susceptibility to depression after an acute myocardial infarction. The spouse's psychological burden paralleled that of the patient. In the beginning, only every second couple was able to communicate about the experience of the infarction. Partners and patients used negation of threat, anxiety, and fear in the same way as a coping mechanism in responding to reality [28]. Patients lacking social support were at a significantly greater risk of relapse 1 year after the first event of a myocardial infarction [19].

Studies of partners' emotional reactions and adaptational mechanisms have only recently become available [3, 38]. In a Norwegian sample of spouses, Arefjord et al. [3] have found a high level of anxiety in spouses shortly after a nonfatal myocardial infarction of their male partners. Partners and spouses used the same adaptational mechanisms to deal with depression. A cluster analysis showed that, in contrast to anxiety, which lasted up to 3 months after the acute event, depression was much more stable and could still be a significantly impending problem up to 10 years after the myocardial infarction. In the discriminant analysis, marital relationship and dissatisfaction with social support made independent contributions to the depression clusters.

Schroeder et al. [38] investigated a sample of 381 patients (mostly men) before, 1 week after, and 6 months after cardiac surgery. They also interviewed 114 of the respective partners (mostly women) before surgery only. In accordance with the authors' "resource transfer hypothesis", the main results show better quality-of-life scores for patients with social support as perceived by their spouses, and a close relationship/correlation between partner support and satisfaction with intimate relationships and family life. Moreover, readjustment 6 months after surgery could clearly be predicted by the spouses' perceived self-efficacy and social support.

There is, however, one respect in which transplant recipients differ considerably from the groups just mentioned. After successful operation, the acute life-threatening period (during which patients are often kept alive by means of high-tech medicine) is over, and patients return to their lives completely rehabilitated and full of energy. However, in spite of this, or maybe because of it, the situation imposes conditions on the partners that often border on the unbearable. The partners must cope with a situation that seems to contradict all previous experience. As Shapiro points out, "You cannot overemphasize the toll the transplant process takes on even the most committed and resourceful family" [40].

Studies that deal with the impact of heart transplantation on the partner relationship are scarce. Most of them are retrospective surveys, based on questionnaires or interviews, that cover a 1- to 10-year follow-up period. These studies suggest that the process of reintegration into the partnership is not easy for the patient or for the partner. In a 1- to 40-month follow-up study, Allender et al. [1] have found that approximately one-third of the families of 25 transplant recipients had significant marital and family problems after the transplantation, and that spontaneous resolution of these problems rarely occurred. The authors suggest that such problems should be seen as typical exacerbations of previous difficulties that have simply become more acute as a result of the additional distress caused by the transplant recipient's convalescence. McAleer et al. [29] mailed questionnaires to 291 patients at 11 centers. They found that, after discharge from hospital, family-related distress was the most common problem. Angermann et al. [2] have reported that almost one-third of the patients interviewed felt that their partner relationship, including their sexual relationship, had deteriorated after transplantation. Rosenblum et al. [36] have identified several possible psychosocial problems similar to those recognized in patients with clinical depression. These may also have an impact on family life. They include poor social interaction, decreased sexuality, decreased housework, forgetfulness, and decreased involvement in recreational activities. Buse and Pieper [10] examine the distress levels of 30 spouses of heart transplant recipients in a follow-up period ranging from 67 days to 3 years postoperatively. They reported high levels of distress at all times. The fear of losing their partner, the wish to learn more about the transplantation, and a lack of time available for themselves were their prime reasons for concern before the operation. After the operation, the need to learn more about the transplant, the lack of social support, and the relationship to family and friends were reported as most stressful [11]. Collins et al. [16] focused on the impact of the waiting process on spouses. They found that approximately one-third of the sample – 85 wives of heart transplant recipients – reported that the transplant experience had had a negative impact on their lives, while two-thirds reported a positive impact. Those who had experienced it in a positive way had more family support, were more satisfied with their lives in general, and had used more effective coping strategies.

Pretransplant functioning is also an indicator of post-transplant outcome [16]. Postoperative functioning is largely determined by the preoperative situation, i.e., family resources and the patient's broader social network [18, 20]. Even when patients are awaiting heart transplantation, psychosocial resources are of utmost importance in for good quality of life, as depicted by Grady et al. [21]. Family members who care for heart transplant recipients experience higher than average levels of distress during the post-transplant period [11]. This is in contrast to results of a study conducted by McGary and Pieper [30], who have found that there was no difference in the amount of distress experienced by spouses of patients undergoing heart transplantation and that of the patients themselves.

The major flaws of the studies we have just mentioned are their retrospective nature, which may lead to a memory-related distortion of facts, and their design, which is often based only on interview data or self-developed questionnaires. Consequently, our aim was to perform a prospective, long-term, follow-up survey of the impact of heart transplantation on the partner relationship. The most important questions to be answered were:

1. Does the life-sustaining event “heart transplantation” have an impact on the partner relationship from the points of view of both the patient and the partner? If so, which areas of the relationship change?
2. Do patients see these changes in a significantly different way than the partners?
3. How does the partner relationship change after heart transplantation over the course of time?

Patients and methods

Respondents

From a pool of 50 nonrandom, consecutive adult patients, 26 patients (52 %) and their spouses were followed up over a 5-year period. All of the patients had end-stage heart failure and underwent heart transplantation at the Transplant Center Vienna, Austria, within 1 year of being placed on the waiting list. Patients who did not participate in the study either died within the evaluation period of 5 years (10 patients, 20 %), were too sick to participate any longer (2 patients, 4 %), dropped out (1 patient, 3 spouses, 8 %), had a retransplant (1 patient, 2 %), or had no spouse (7 patients, 14 %). Table 1 presents data on the background characteristics of the sample.

The patients were primarily male (92 %), with an average age of 48.0 ± 10.2 years (range 25–67 years). Their educational level ranged from 8 to 17 years (mean 11.4 ± 4.0 years). Seven patients (27 %) were still working when placed on the waiting list, 12 patients (46 %) had been on sick leave for more than 6 months, and another 7 patients (27 %) had retired. One year postoperatively, 11 patients were working (42 %), one patient was still on sick leave (4 %), and 14 patients (54 %) had retired. Five years postoperatively, 11 patients were employed (42 %) and the other 15 patients (52 %) had retired. The waiting time for the transplant ranged from 1 to 315 days. Spouses were primarily female, and their average age was 43.2 ± 8.1 years (range 21–63 years). At the time the patients were placed on the waiting list, 11 spouses (2 men, 7 women, 42 %) had a job. Fifteen spouses (58 %) were housewives, of whom 10 also worked part-time on the farm or in the vineyards. Between placement on the waiting list and the transplantation, 2 women had started working for financial reasons and had remained employed. Another 2 spouses (one woman, one man) retired after the partner’s successful transplantation. There was no change in job status for the majority of the spouses (85 %).

Procedure

In this prospective study, data on the partner relationship were collected at three times: (1) when patients were placed on the waiting list as potential organ recipients, (2) exactly 1 year postoperatively, and (3) 5 years postoperatively. The spouses were asked to accompany the patients, and all of them agreed to participate in the study.

Table 1 Background characteristics of the sample

Baseline characteristics		
The patients		
Gender	Male	24
	Female	2
Age at transplantation (years)	< 30	3
	31–40	4
	41–50	6
	51–60	12
	> 61	1
Indication for heart transplantation	Dilated cardiomyopathy	18
	Coronary heart disease	6
	Other	2
Waiting list time (days)	< 50	10
	50–100	4
	101–150	2
	151–200	5
	> 201	5
The spouses		
Gender	Male	2
	Female	24
Age at time of partner’s transplantation (years)	< 30	6
	31–40	4
	41–50	9
	51–60	4
	> 61	2
Duration of partner relationship at time of partner’s transplantation (years)	< 10	3
	11–20	4
	21–30	11
	> 31	8

Instrument

The third version of the Family Assessment Measure (FAM III) is a validated and reliable self-assessment tool with good test-retest reliability [42, 44]. It was translated into German by Cierpka and Frevert and was recently revised [13]. The initial version [14] was used in our study. The Fam III provides quantitative indices of family strengths and weaknesses. In our study, which focuses on the partner relationship, only the Dyadic Relationship Scale was used. The test authors found seven interacting dimensions of family functionality with reliabilities ranging from Cronbach ***a*** 0.42 (affective expression) to 0.72 (task accomplishment). The overall reliability of the Dyadic Relationship Scale is quite good (Cronbach ***a***: 0.92). The Cronbach ***a*** of the German verison [13] and that of the English version [42] have been shown to be comparable. Validity of the German version of FAM III has been confirmed in several studies [8, 14, 27, 37, 39, 45]. The dimensions include:

1. Task accomplishment: the overriding goal of a relationship, i.e., the successful or unsuccessful achievement of a variety of basic, developmental, and crisis tasks. It is through the process of task accomplishment that the partners either achieve or fail to achieve objectives central to them.
2. Role performance: the differentiation and performance of various roles, e.g., the allocation of assignment of specified activities to a person and the agreement to assume the assigned roles. (Example: “He/she complains that I expect too much of him/her.”)

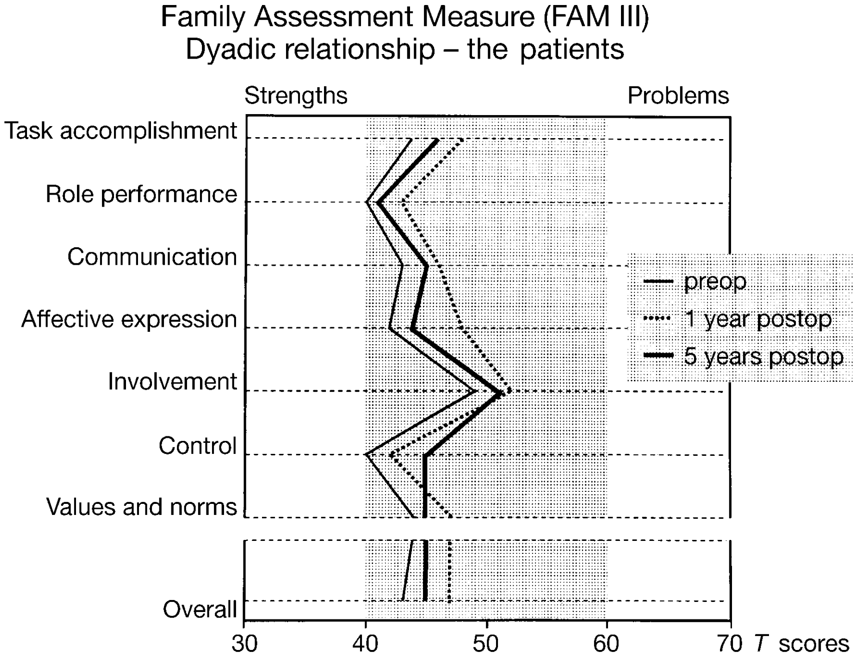

Fig. 1 Assessment of the partner relationship preoperatively, 1 year, and 5 years postoperatively from the point of view of the patients. Profiles in *t* scores

3. Communication: essential to role performance, so that the message received is the same as the message intended. The goal of effective communication, therefore, is the achievement of mutual understanding. (Example: "If he/she is angry with me, I hear about it from someone else.")
4. Affective expression: a vital element of communication that can facilitate or impede task accomplishment and role performance. In includes the content, intensity, and timing of the feelings involved. (Example: "When I'm upset, he/she usually knows why.").
5. Involvement: the kind of affective involvement that partners have with each other. This refers to both the degree and quality of interest in each other.
6. Control: the process by which partners influence each other.
7. Values and norms: the yardstick against which all basic processes must be measured, e.g., the latitude or scope allowed for partners to determine their own attitudes and behavior. (Example: "He/she and I have the same views about right and wrong.")

The 42 items were assessed on a four-step rating scale (strongly disagree – disagree – agree – strongly agree). The questionnaires were evaluated by means of stencils and raw values, which were converted into *T*-normalized values to allow a comparison to the reference population. *T* scores for nonclinical families and couples should fall between 40 and 60 (= the norm). Scores outside this range indicate either very healthy functioning (40 or less) or considerable disturbance (60 or more) [13, 43].

Statistical analyses

T-tests (dependent samples) were used to determine whether there were any significant differences in the way patients and their partners appraised their marriage preoperatively, 1 year postoperatively, and 5 years postoperatively. The level of significance was set at 0.05 throughout. An ANOVA was not used because significant differences in the respective pairs would have necessitated adding multiple *t*-tests to localize the variations.

Results

Figures 1 and 2 show the assessments of the partner relationship on the seven subscales of FAM III as well as the sum totals (overall score), both from the point of view of the patients (Fig. 1) and from the point of view of the healthy partners (Fig. 2).

Patients and their spouses had FAM scores within the normal range at all times. Partner relationship is therefore never to be rated as pathological. Table 2 shows the comparison of FAM III scales before, 1 year after, and 5 years after heart transplantation.

The partner relationship as seen by the patient

One year after transplantation, patients reported significant deterioration in their partner relationship (overall score, $P = 0.034$). The focal point of this deterioration was the affective expression score ($P = 0.009$) indicating a lack of adequate communication about emotions and a deteriorating fulfillment of emotional needs.

Five years after transplantation, the patients' overall scores remaind unchanged. However, the affective expression – the former cause of conflict – had significantly improved ($P = 0.032$), suggesting that patients were again engaging in sound emotional communication with their spouses. The patients' scores for the other FAM III dimensions did not change significantly (Table 2).

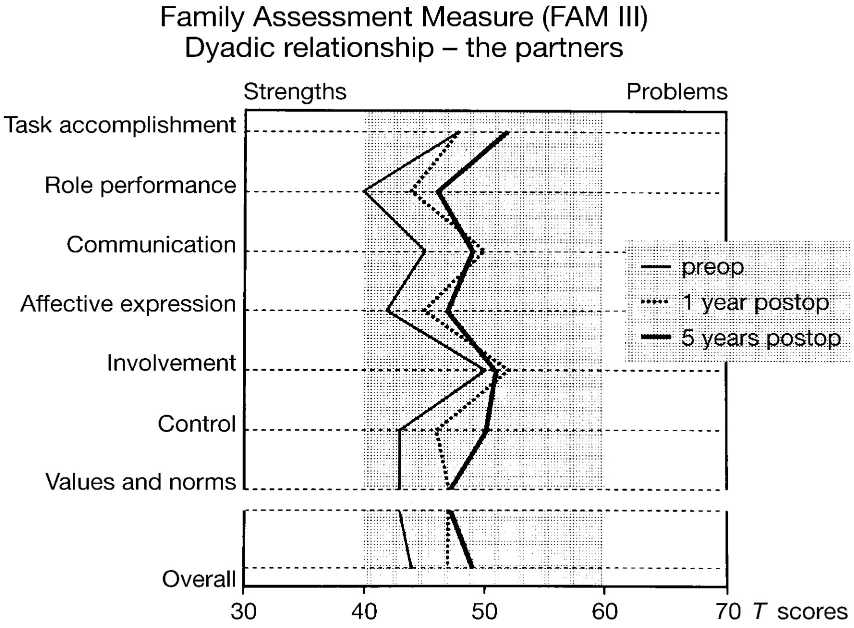

Fig. 2 Assessment of the partner relationship preoperatively, 1 year, and 5 years postoperatively from the point of view of the healthy partners. Profiles in t scores

Table 2a Comparisons of FAM III scales before and 1 year after heart transplantation (*preop* preoperatively, *postop* postoperatively)

Dimensions FAM III	Patients ($n = 26$)				Partners ($n = 26$)			
	Mean (T-Score)		P value	t value	Mean (T-Score)		P value	t value
	preop	1 year postop			preop	1 year postop		
Task accomplishment	44	48	0.088	1.78	48	48	0.893	0.14
Role performance	40	43	0.073	1.87	40	44	*0.014*	2.65
Communication	43	46	0.600	1.97	45	50	*0.017*	2.56
Affective expression	42	48	*0.009*	2.84	42	45	0.079	1.83
Involvement	49	52	0.074	1.86	50	52	*0.020*	2.49
Control	40	42	0.196	1.33	43	46	0.226	1.24
Values and norms	44	47	0.340	0.97	43	47	*0.021*	2.45
Overall	43	47	*0.034*	2.24	44	47	*0.006*	3.03

Table 2b Comparisons of FAM III scales 1 year and 5 years after heart transplantation (*postop* postoperatively)

Dimensions FAM III	Patients ($n = 26$)				Partners ($n = 26$)			
	Mean (t-Score) postop		P value	t value	Mean (t-Score) postop		P value	t value
	1 year	5 years			1 year	5 years		
Task accomplishment	48	46	0.248	1.19	48	52	0.135	–1.55
Role performance	43	41	0.159	1.45	44	46	0.319	–1.02
Communication	46	45	0.119	1.62	50	49	1.000	0.00
Affective expression	48	44	*0.032*	2.29	45	47	0.407	–0.84
Involvement	52	51	0.443	0.78	52	51	0.739	0.34
Control	42	45	0.235	–1.22	46	50	0.251	–1.18
Values and norms	47	45	0.179	1.38	47	47	0.627	0.49
Overall	47	45	0.159	1.46	47	49	0.416	–0.83

The partner relationship as seen by the partner

Both the patients and their healthy partners considered the overall relationship to have become significantly worse 1 year postoperatively (overall score, $P = 0.006$). In addition, scores on the following four of the seven FAM III subscales were significantly impaired compared to their pretransplant levels: role performance ($P = 0.014$), communication ($P = 0.017$), involvement ($P = 0.020$), and values and norms ($P = 0.021$). However, the partners' score on affective expression – an encumbering problem for the patients – remained stable over the whole 5-year study period. In the partners' assessment of the relationship, the changes persisted over the 5-year period in all dimensions of the FAM III and in overall functioning.

Discussion

All FAM III scores reported in this study are within the normal range. Neither the patients nor the spouses considered their partner relationship to be dysfunctional (as defined by pathological FAM III scores) either before or after the operation. The main findings of our prospective study are:

1. In the course of the transplantation process, there was a significant worsening in overall partnership functioning from both the patients' and the partners' points of view. This was obvious mainly in the scales representing affective functioning.
2. The patients did not consider their relationship to have worsened in as many dimensions as their partners did. However, partners reported deficits in other dimensions than the patients.
3. One year after the operation, both patients and partners reported that their relationship was still not as good as it had been before. However, they ascribed this development to other reasons.

The patients' view

The patients reported that affective expression was the main problem. This implies difficulties in talking about emotional matters, i.e., either failing to talk about problems at all or becoming overly emotional. We know from daily experience that men feel overwhelmed by the amount of emotional communication women wish to give and to get. The patients felt that their partners were intrusive, but when the partner withdrew attention, the patients felt the partner was not supportive enough [7].

However, 5 years after transplantation, patients' scores on affective expression improved significantly. Patients felt their partners were less worried about the possible dangers that made them strive for closeness, especially in intimate communication. Higher scores might also be related to the fact that the partners might have changed or given up the demands they had previously placed on their spouses.

There were no significant differences between the patients' scores on the overall quality of their partner relationship at the 1- and 5-year follow-ups. Their scores remained lower than the level before the operation and did not improve during the study.

These findings are consistent with those of Angermann et al. [2], who report a deterioration in the marriages of 26.8 % of a sample of transplant recipients. In an Australian investigation, 45 % of the patients reported that transplantation had placed a strain on their marriage, while 52 % felt that it had not [22]. McAleer et al. [29] have found marital stress for 53 % of the respondents, which they believe is a major factor in post-transplant adaptation. Allender et al. [1] report similar results: one-third of the families they studied reported severely impaired functioning. Rankin et al. [33] have observed post-transplantation distress in about an equal proportion of the relationships. We [7] also report similarly impaired family functioning in a previous sample of patients.

The partners' view

The spouses in this study – almost all women – noted a deterioration in the general level of functioning (overall score) of their partner relationship. In a comparable follow-up study, Angermann et al. [2] have found this as well in a Likert scale self-report questionnaire that had been mailed out. While approximately one-half of the spouses noticed no change, one-quarter reported that their relationship had become either better or worse 6 months to 5 years after transplantation. Harvison et al. [22] report similar findings in Australia. Forty-five percent of this cohort reported that transplantation had placed little or some strain on their relationship. Of the 47 partnerships, 4 had broken up and two people had started a new relationship. Allender et al. [1] and Mc Aleer et al. [29] have also detected an overall increase in family and marital stress. This phenomenon is not unique to heart transplantation. Rankin [33] confirms it for patients suffering from coronary heart disease who underwent cardiac surgery. We have found long-term disorganization of the family with 23 % of the patients studied and a peak of family emotional distress after discharge from hospital. There is also conclusive evidence of spouses exhibiting psychological symptoms (i.e., anxiety, depression) after their partners' myocardial infarction as long as 1 year after patient discharge [23], or as a persistent dilemma [17, 44].

The partners' view was far more differentiated than the patients' appraisal of their relationship, whereas patients emphasized only the affective expression as crucial. The spouses identified impaired role performance, which includes poor or worsening role integration and a lack of agreement regarding role definitions. This in turn led to difficulties in adapting to new roles – a requirement for developing a healthy relationship. This was particularly a problem when men returned home from hospital. After transplantation and rehabilitation, roles were redefined, re-created, or relinquished. These changes significantly influenced the roles within the family, as Buse and Pieper [10] have reported. Generally, patients tried to reassume all the roles and duties they used to fulfill before the long period of terminal heart disease. This sometimes caused grave conflict in the relationship since most of the partners had, in the interim, learned to cope with new roles and were not willing to give them up [31, 40]. All this added to poor or problematic role performance as Mishel and Murdaugh [31] also have reported. They give evidence that the phase after transplantation is a time of reorientation for the patient that includes giving up the sick role and all the pros and cons involved. The authors use the very impressive term “redesigning the dream”. Nevertheless, 1 and 5 years after the operation, the patients experienced more confusion or conflict between role assignment and role assumption than they had before the operation. Various authors also have found changes in their family roles in general. Baumann et al. [4] describe a change in family roles, Gier et al. [20] stress the importance of family and social resources when a shift from the sick role to the healthy role is imminent, and Hyler et al. [26] have found that the two greatest concerns of 24 transplant patients were health-related problems and role performance in their marital relationship (sick-versus-well role). Twice as many patients as their healthy partners were troubled about their family roles (25.6% vs 15.7%) [26]. Liver transplant recipients have also had trouble redefining the roles they fulfill at home [24].

Furthermore, the spouses reported deficits in communication. However, while patients attribute these problems to the emotional components of communication, partners felt that they were no longer able to communicate with each other in a clear and direct manner, that there was less mutual understanding, and that it had become more difficult to clarify misunderstandings. These problems might be due to the fact that patients reacted to the changed situation by withdrawing. Shapiro [40] points out that many partner relationships even suffer from psychiatric disorders (depression or anxiety) in the postoperative period. These results have been confirmed in other investigations [4, 5, 10, 11, 20, 32]. Most of the post-transplant communication problems were primarily attributed to coping difficulties. Consequently, wives of heart transplant recipients may feel isolated and lonely. Support is especially lacking in daily decision making.

Affective involvement was similarly regarded as less than satisfactory 1 year after transplantation. This behavior may lead to an absence of involvement among family members (e.g., the spouse) or to mere interest devoid of feelings. The involvement may be rated as narcissistic, or even as symbiotic. At the same time, family members may exhibit insecurity or lack of autonomy. Personal interests may compete in the partnership and lead to insufficient involvement. Such authors as Mishel and Murdaugh [31] have confirmed this. The discrepancy between the patients’ interests and those of their spouses may lie in the often substantially different interests arising from changed life expectancies after transplantation. While patients wish to rediscover the world, partners wait for acknowledgement to compensate for the period of self-denial during the patients’ illness. Postoperatively, however, patients do not often show appreciation for the sacrifices their partners have made on their behalf. The patients also have to accept the fact that life itself is not as predictable as it seemed before transplantation. In this situation, partners typically need reassurance to prepare them for uncertainty. In contrast, patients often crowd their lives with activity, automatically projecting most of their negative feelings on their partners who seem to be standing in the way of their realizing a new dream.

A similar development is visible with respect to values and norms. There is more dissonance between components of the partners’ value system, which may result in pervasive confusion and tension.

Our study shows that patients rate the overall partner relationship as worse after transplantation. They emphasized one main point of dysfunction. However, this cause for conflict often vanishes with time. Spouses, too, complain of an overall worsening of their relationship. They reported deterioration in four of the seven dimensions defined by the FAM III test. These dimensions reflect components of the partner relationship that have deep psychological roots and, thus, are closely associated with elements of one’s “ego”, such as self-esteem, the feeling of being accepted, and related emotional factors. The state remained unchanged during the 5 years. With regard to heart transplantation, Mishel and Murdaugh [31] conclude from their practical experience that “patients benefit – partners suffer”. It is likely that this assumption could be proven scientifically with the results of our approach. In another context similar findings are apparent: Schroeder et al. [38] see the spouses as additional resources of cardiac surgery patients. This highlights the important role of social networking in partner relationships. Analogous results for postmyocardial infarction patients have been published recently [3].

The reported differences in patients’ and partners’ score values may be seen as a result of partners’ expectations remaining unfulfilled by the patients. It is a well-known clinical fact that partners rate the partner relationship as better than it really was before the transplantation. After the operation the real difference between patient and partner can again be expressed, and differences are once again accepted as fact. This is in accordance with Mayou et al. [28] who state: “We cannot afford to quarrel”.

Limitations of the study and suggestions for further research

As reported, the FAM III consists of three scales. We used only the Dyadic Relationship Scale to evaluate the partner relationship. This questionnaire was part of a preoperative test battery for the patients. To avoid placing too great a strain on the severely ill patients, the other two scales were not included. However, bearing our stimulating results in mind, it would also have been interesting to assess overall family functioning (General Scale) and the functioning of individual family members (Self-rating Scale). Moreover, "social desirability" and "denial" would have been considered in a part of the General Scale, which, in view of the present results, would be of utmost interest.

Another important issue are certainly the normal values (*t* scores between 40 and 60). Normal values would have been useful to differentiate between pathological and normal partner relationships, but these normals themselves imply a valuation. However, such a valuation was not the subject of our study, since we did not focus on the "normality" of the scores. Cierpka and Frevert [13] note that differences in the various scores between the respective partners are more useful than identifying normal and pathological families. The greater the differences between partners in the various scores, the greater the conflict there may be in the relationship.

We investigated 26 patients and their spouses by means of the FAM, which contains seven dimensions. The relation between the number of patients and questions may have implications for the power analysis of the results. These power values are not very satisfying. However, including more participants and following the couples who live all over Austria would have been quite impossible. Another study with more patients would be useful.

In addition to the FAM III, the duration of the partner relationship and its general quality (five-step self-rating scale ranging from excellent to very poor) was assessed. Because the cell counts did not exceed the required *n* of 5, the statistical analysis would have been inadmissible. The age of the patients, the duration of relationship, the time on the waiting list, and the educational level could nevertheless be of interest and should not be overlooked in further research since these factors might influence the results. However, because of the small number of patients, these influences could not be calculated within our sample. Finally, the problems of clinically significant forms of depression or anxiety did not play a role in our sample.

Care implications

Our results have clear implications for the care of transplant recipients and their partners. The outcome of the operation should not be judged by the patient's well-being alone, but also, and equally, by its implications for the social network, including the functioning of the partner relationship. Medical care should focus on both patients and partners, before and after transplantation. Care for the patient should include measures for stabilizing the partner relationship. In our opinion, this can best be achieved by establishing partner groups in rehabilitation clinics and follow-up centers.

Conclusions

Heart transplantation is a life-sustaining event that has an impact on the partnership. Patients seem to perceive considerably fewer causes for conflict than do spouses. Five years after transplantation, both patients and their partners see their relationship as substantially worse than in the time before the operation. These results imply that partners should not be excluded from care. Nevertheless, transplantation provides both patients and partners with a unique opportunity to continue their relationship and to have it grow into a new form of interaction. Most couples coped quite well with this challenge; return to work was possible for nearly half the sample of patients and partners. However, our study clearly indicates that, in the treatment of heart transplant recipients, more attention has to be paid to all aspects of partner relationship, and a holistic approach must be taken.

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