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THE ROLE OF CARDIAC REHABILITATION IN DEALING WITH PSYCHOLOGICAL LOSS AMONG SURVIVORS OF A CARDIAC EVENT

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The aim of the current study was to examine the experiences of cardiac rehabilitation (CR) patients within the framework of psychological loss. All participants in this study reported experiencing losses of some nature, some of which were tangible and others less so. However, these do not appear to be strictly independent from each other in that tangible losses, such as loss of income, were underpinned by intangible losses, such as loss of self-esteem. For CR patients, it seems that the losses reported are experienced at more than one level. The first is an externally visible and objectively quantifiable level (for example, loss of occupation), whereas the second is a more symbolic, phenomenologically based level (for example, loss of purpose as previously defined through one's occupational role). The CR program examined in this study helped patients to effectively deal with these losses and to experience additional developmental gain.

Patients who suffer a cardiac event (e.g., a myocardial infarction; MI), undergo cardiac surgery (e.g., a coronary artery bypass graft), or experience symptoms of underlying cardiac disease (e.g., angina) are, following hospital treatment (Treatment Phases I and II), offered further rehabilitation. Phases III and IV of cardiac rehabilitation (CR) involve, respectively, long-term community- and exercise-based intervention and community-based independent exercise. Although mainly centered on a structured exercise program, Phase III/IV CR

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is, in most cases, multidimensional (McGee, Hevey, & Horgan, 1999), including basic cardiac education, advice on nutrition, and risk factor modification, such as smoking and stress management. The aims of Phase III/IV CR programs are, therefore, similarly diverse (McGee et al., 1999). These aims underpin the central purpose of CR, which is to improve quality of life and promote secondary prevention of cardiac disease (World Health Organization, 1993).

Increasing research evidence supports the efficacy of CR in achieving these aims. A meta-analysis of 10 randomized clinical trials revealed a 20%–25% reduced mortality risk following participation in a CR program after an MI (Oldridge, Guyatt, Fischer, & Rimm, 1988). Psychosocial outcomes of participation in CR programs that have been identified include decreased anxiety and depression, improved quality of life, and increases in self-efficacy (Berkhuysen, Nieuwland, Buunk, Sanderman, & Rispens, 1999; Engebretson, Clark, Niaura, Albrecht, & Tilkemeier, 1999).

The losses incurred following a cardiac event have also been identified as important moderators of psychological and lifestyle adjustment among CR patients. These losses, spanning a range of domains, can include loss of occupation, functional capacity, previous lifestyle and behaviors, and self-confidence (see, e.g., Engebretson et al., 1999; Lewin, Robertson, Cay, Irving, & Campbell, 1992; Lloyd & Cawley, 1983).

Baltes's (1987) life-span development perspective, which views development as a dynamic interplay between losses and gains, is one that may be readily extrapolated in an examination of cardiac patients. From this perspective, development does not simply involve a process of positive change, growth, and adaptation. Instead, development involves positive and negative changes in the process of adaptation, that is, both gains and losses (Baltes, 1987). Loss is always experienced concurrently with gain (Hetherington & Baltes, 1988), and, throughout the life span, both biologically and psychologically based changes can be identified (Uttal & Perlmutter, 1989). The aims of this study are, therefore, to identify the losses incurred by CR patients and to examine the role played by CR in the restoration of these losses by using a case study approach that focuses on CR patients from one program in England.

Method

Participants

Participants were 12 men between 46 and 78 years of age who had previously completed a 6-week multidisciplinary CR program. All participants had

experienced at least one MI during the previous 5 years, and 4 had also undergone single or multiple bypass surgery. They were now engaged in a long-term "graduate" exercise class, continuing to attend medically supervised exercise sessions twice weekly at the local leisure center where the CR program was held. Time since completion of the program ranged from 18 months to 5 years.

The CR Program

Prior to the CR program, patients were screened for medical suitability using a graded exercise treadmill test (Bruce protocol; Bruce, 1971) to establish physiological responses and symptom-limited functional ability. The 6-week Phase III/IV program was held in a leisure center and led by a multidisciplinary team comprising cardiac nurses, exercise instructors, a physiotherapist, a dietitian, and a psychologist. Weekly, patients attended two 2-hour sessions consisting of 1 hour of structured exercise (cardiovascular equipment or water based) and 1 hour of educational instruction (e.g., nutrition or stress management). On completion of the 6-week program, patients were invited to attend graduate exercise classes. These 1-hour sessions were held twice weekly in the leisure center. Although patients were encouraged to take responsibility for structuring their own exercise, they were monitored and supervised by exercise instructors and cardiac nurses.

Procedure

Participants were briefed as to the purpose of the study. Volunteers were individually solicited at the graduate exercise sessions, and informed consent was obtained prior to involvement in the study. Sampling continued until all individuals had been approached and either their consent or refusal to participate in the study was obtained.

Semistructured interviews were conducted with each volunteer in a quiet place in the leisure center, either preceding or following graduate sessions. Topics covered in this interview were as follows: expectations and perceptions of the CR scheme, lifestyle and attitude changes facilitated by the scheme, benefits of and barriers to exercise, familial/social/work commitments, familial attitudes toward the scheme, reasons for adherence to the graduate exercise sessions, and health. Respondents were not limited by these topics and were encouraged to discuss additional issues pertinent to them.

Where necessary, probes were used to gain more detail on or confirmation of participants' responses. Participants' permission was obtained to tape record each interview, and these recordings were transcribed verbatim. The first two authors, both of whom have extensive training in qualitative data collection and analysis procedures, conducted the interviews.

Analysis

Data analysis followed the principles of inductive content analysis (Lincoln & Guba, 1985) with one modification. Following transcription, each interview was read and reread to enable the analyst to digest the interview content as a coherent whole. Also, salient quotations were identified from each transcript and listed as raw data. Salient quotations were those that referred to losses incurred as a result of the cardiac event or to restoration of losses/gains experienced through participation in the CR program. It is not customary to identify raw data according to predetermined themes at this stage of qualitative data analysis. However, the specific aims of the study necessitated this approach to data analysis. These raw data were then organized into meaningful categories of increasing levels of abstraction. This involved the identification of raw data themes, followed by any first- and second-order categories and, finally, general dimensions. Raw data referring to experienced losses were categorized separately from data pertaining to gains or restoration of loss. A second researcher, unaware of the outcomes of this analysis, was presented with the raw data from the transcripts. Following the procedures just outlined, this researcher undertook a second analysis of the data. Level of agreement was assessed by comparing the themes identified in these two analyses at each stage of this process. No discrepancies were evident in the content of raw data themes, their grouping into higher order categories and general dimensions, or the interpretation of these categories and dimensions.

Results and Discussion

Losses Incurred From Cardiac Events

The overriding hierarchical theme identified was loss of the person, mediated by loss of a sense of purpose, loss of a sense of self, and loss of previous lifestyle, each comprising two raw data themes (see Figure 1).

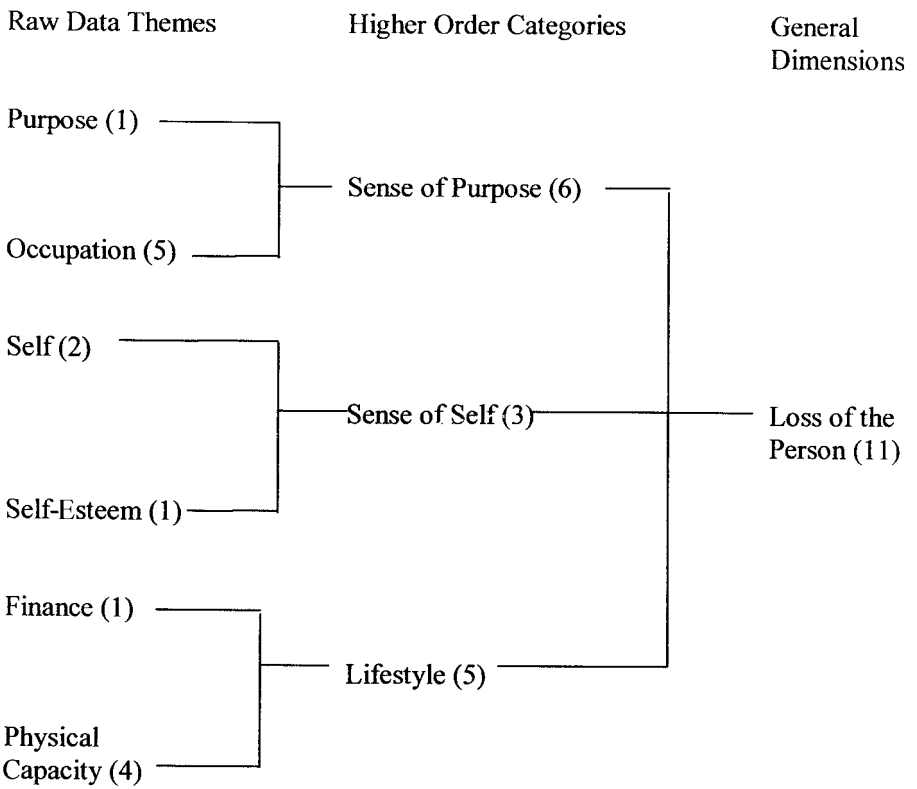

FIGURE 1 Losses incurred owing to a cardiac event (numbers in parentheses indicate number of raw data items within each theme).

Sense of Purpose

The first raw data theme in this category, purpose, reflected the belief that life was over: "When I had the heart attack I thought that was it, my life was finished." The second described the loss of purpose that was encountered through losing one's occupation: "Because when you have it you think to yourself what am I going to do now... I didn't have a light job... and you just couldn't do it."

Sense of Self

The raw data theme self reflects a loss of key aspects of the self and personality that were evident before the patient's cardiac event: "I went into a shell. I had been a very forceful person before." Illustrating the second raw data

theme in this category, the following quotation demonstrates how, for one patient, the consequences of his cardiac trauma underpinned a loss of self-esteem: "It has been hard, my daughter has had to borrow money for university; it should never have happened."

Lifestyle

This final higher order category consisted of finance and physical capacity raw data themes. Through losing his occupation, one respondent explained, "I was a skilled man and I've lost good money." Loss of physical capacity was evident in responses such as the following: "Can't do what I used to do. You take it for granted what you can do until you have a heart attack." The individual's sense of him or herself as a person of worth who has a purposeful role to play in society is important for continuing psychological and physical health and quality of life (Mutrie, 1997). Moreover, core aspects of the person, including sense of purpose, sense of self, and established lifestyle patterns and expectations, are fundamental in maintaining self-esteem (Gergen, 1991).

Thus, these are experienced losses that, if not effectively addressed, may have negative implications for these patients, particularly when we consider the high levels of clinical depression observed in patients following a cardiac event (see McGee et al., 1999). For the patients involved in this study, their CR program played an integral role in helping them to deal with these losses (see below).

Losses and Gains Experienced Through Cardiac Rehabilitation

In this analysis, 16 raw data themes were identified from salient quotations, and these were further classified into five first-order categories: social support, increased awareness, sense of achievement, sense of purpose, and psychological effects. Two second-order categories were derived from these themes: *support and education* (social support and increased awareness) and *developing self-esteem* (sense of achievement, sense of purpose, and psychological effects). The general dimension of *regaining sense of self* was abstracted from these second-order categories, as illustrated in Figure 2.

Support and Education

The social support that respondents gained from involvement in the CR program took two forms: socializing with others ("I've got more friends here than I've ever had before") and the social support that stems from sharing a

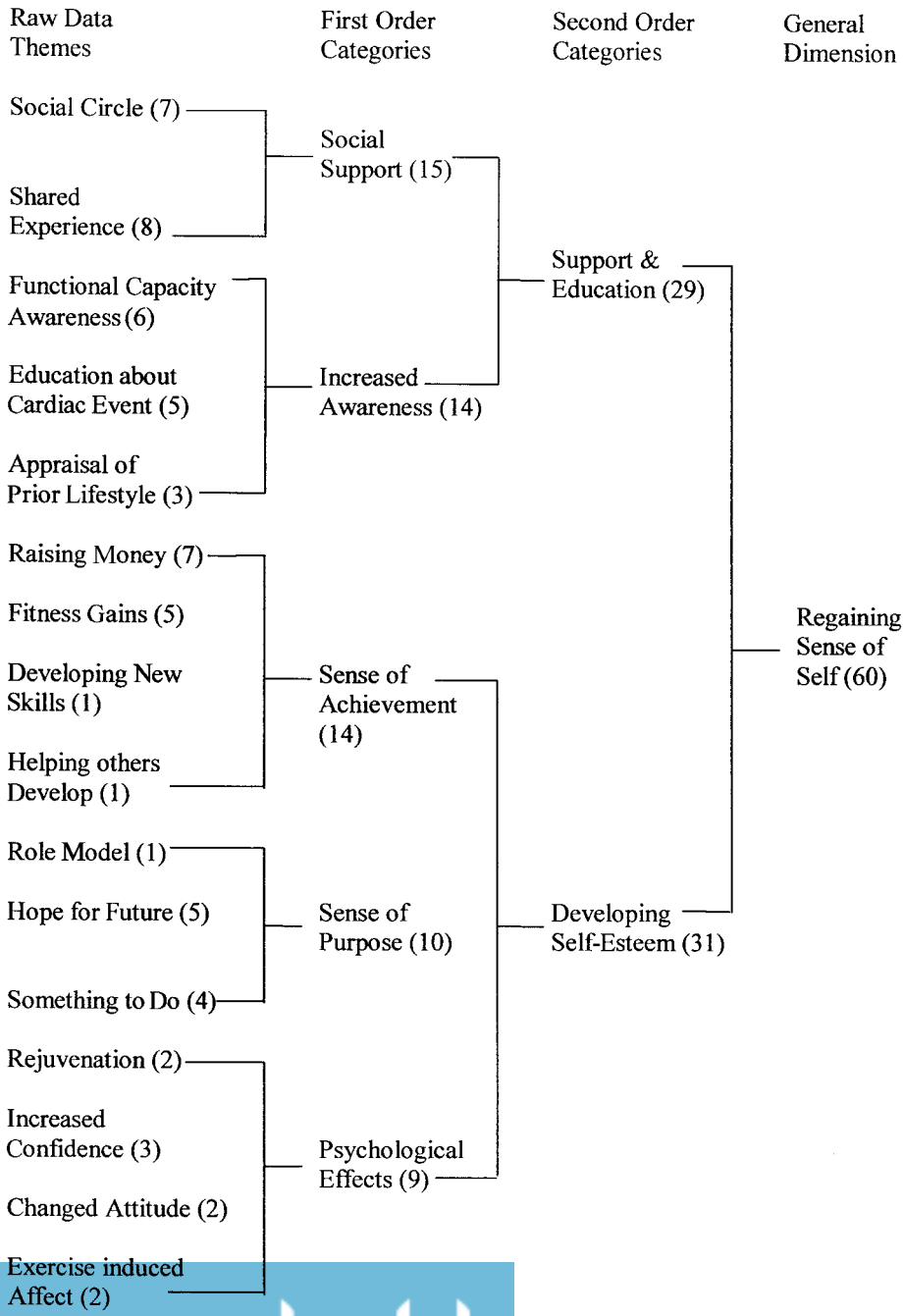

FIGURE 2 Restoration of losses and gains experienced following cardiac rehabilitation (numbers in parentheses indicate number of raw data items within each theme).

common bond with other patients ("If you talk to others it brings it all out, it makes them feel a lot better in themselves and they then talk to other people in the same position"). Interaction with other patients offered an invaluable source of informal education, and patients gained reassurance by sharing concerns, symptoms, experiences, and knowledge with others who had been in similar situations themselves. The function of shared experience as a support mechanism for these patients cannot be underestimated. As with any social group, the CR program and graduate group offered opportunities for social interaction and enjoyment. Kulik and Mahler (1993) emphasize the importance of social support in enhancing emotional status following a cardiac event. However, the social support offered within this group extended further, providing a small community of individuals who had shared a common experience; in the words of one respondent, "[we] have a close link, [we have] been close to death."

The first-order category of increased awareness was based on three raw data themes. The first was realization of current and potential physical capacity: "I learnt I was able to do more. And I was once told by a doctor not to lift anything heavier than a mug of tea . . .and it wasn't until I came on the course that I learnt a lot about what I was able to do and what was beneficial." In all cases, expectations of functional capacity were raised as a result of participation in the program. This represents an important development as future expectations and self-efficacy have consistently been demonstrated to significantly predict future behavior (e.g., Ewart, Stewart, Gillilan, & Kelemen, 1986). If these patients maintained their pre-program underestimates of their functional capacity, self-efficacy theory (Bandura, 1977) predicts that they might fail to engage in behaviors, such as mild exercise, that provide long-term psychological and physical benefits.

Second, through the formal educational aspects of the program, patients gained an understanding of basic cardiology: "Now I can tell the difference between indigestion and chest pain." The third theme reflected the patients' ability to make realistic appraisals of the health implications of their lifestyles prior to their cardiac event: "The job I had was very stressful. . . . So if I got another job it wouldn't be a stressful job."

Developing Self-Esteem

Patients gained a sense of achievement, as might be expected, through increasing their fitness levels ("I was on the treadmill twice as long at the end of the course than I was at first") and developing new physical skills ("I couldn't swim—I was petrified of the water when I came but now I am

able to swim"). However, achievement was also experienced through helping others to develop ("We taught one [guy] to swim") and raising money for hospital equipment ("We return the compliment by having charity dos and buying things for the ECG department...we do these things and we find a benefit"). Playing an instrumental role in the development and support of both oneself and similar others appeared to be a source of self-esteem for these patients (cf. Bandura, 1977; Deci & Ryan, 1985). Many patients regained their lost sense of purpose through becoming active role models for current patients in the CR program: "It does those people good to know that there's us as backup who've gone through it and it's done them the world of good." Contributing to this sense of purpose, the program helped patients to develop a positive outlook: "It has given me faith to continue." It appears that these patients derived a sense of purpose from different sources prior to and following the CR program that may differ in emphasis and derivation.

A number of psychological effects that respondents mentioned also played a role in enhancing self-esteem. These were identified as increased confidence ("It builds up your confidence, otherwise you would sit in a chair at home"), rejuvenation ("The rehab has really made me...I feel like a new man"), a changed attitude toward one's life and situation ("It encourages a mental attitude which is as important as a physical attitude"), and exercise-induced positive affect ("You feel a bit tired but you feel good"). Combined, these factors appear to contribute to a more abstract process, that of regaining a sense of self. Self-awareness, sense of belonging, social support, self-esteem, positive self-appraisal, and a sense of purpose and achievement are all key elements in defining and accepting the self (Gergen, 1991). For the participants in this study, the CR program they attended was instrumental in helping them, through the mechanisms above, to regain the sense of themselves they had lost with the experience of a cardiac event.

Overall, the CR patients' experiences appeared to mirror the processes outlined by Baltes (1987). As Baltes (1987) suggests, this is a developmental period involving not only loss but also significant gain. Furthermore, the CR program is an instrumental force in shaping the balance of experienced gains and losses. Our results also support Baltes's (1987) position that change in later life does not necessarily involve only loss and negative adaptation but can involve growth and progression. Given a supportive environment, the participants in this study were able to prevent or reduce further loss and to restore lost functions and gain new ones, at both biological and psychological levels (cf. Baltes, 1987). An important point raised by Uttal and

Perlmutter (1989) is that the gains and losses experienced throughout the life span are not necessarily causally related. In later life, gains cannot only be seen as compensation for losses that result from biological aging (Uttal & Perlmutter, 1989). We would suggest that our results support this interpretation, as the gains reported by the participants extend beyond providing a compensatory response to experienced losses. Participants learned new skills, experienced new achievements, and developed new approaches to life. These personal gains cannot be viewed simply as compensation for lost biological and psychological functions, certainly not in the eyes of our respondents. Instead, they reflect real developmental gain, change, and progression rather than comparative compensation for any losses incurred by these individuals.

Nevertheless, this study is not without its limitations. Participants were purposely sampled volunteers, and it is feasible that they have different experiences to recount and may have exhibited different psychological, lifestyle, physical, and social profiles from those who did not participate. Individuals who declined to participate in the study were not pursued further, and hence profiles of these individuals were not obtained. It was therefore not possible to compare these individuals with the study volunteers. Future research could consider this issue, as any differences between these groups may be related to their experiences of CR.[1] The small sample used in this study also presents some limitations in that it does not allow extrapolation of results to other contexts and participants. Therefore, it is not appropriate to generalize these findings beyond this study. Future studies should employ larger samples to investigate the generalizability of the patterns of gains and losses identified in this study. Quantitative measures, based on current themes, could also be developed and used to examine the universality of this framework.[2]

Suffering a cardiac trauma is a complex process that involves significant losses across a number of domains, but, for survivors, it also provides an opportunity to experience significant gains that not only compensate for but build on these losses. According to these patients, CR plays a pivotal role in this overall developmental process, facilitating developmental gain to provide a necessary dynamic balance between gains and losses.

[1] We would like to thank an anonymous reviewer for heighlighting this.
[2] Again, we thank an anonymous reviewer for pointing this out.

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