Towards Optimal Heart Failure Care: Couples-Oriented Strategies to Improve Patient Adherence and Health Outcomes

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Abstract: Psychosocial factors play an important role in the development and progression of cardiovascular diseases (CVD), such as chronic heart failure (CHF). In particular, psycho-cognitive disturbance is common in CHF, which presents additional challenges to secondary prevention and management strategies. This review provides a summary of the contemporary psycho-cardiology literature, including coverage of common mood and cognitive symptoms, and explores some of the pathophysiology evidence linking psycho-cognition to CHF, with particular emphasis on sympathetic nervous system activation and neuroendocrine functioning. Social support is identified as a strategy by which to reduce depressive symptoms, manage cognitive impairment and to, potentially, improve health outcomes through improved patient self care and adherence. Recent research outcomes suggest that the integration of family caregivers into CHF psycho-educational disease management programs, as providers and recipients of support, may achieve best outcomes. In this regard, couples-oriented strategies that promote communication, emotional attachment and support may enhance health-promoting behaviours in patients and their partners.

Keywords: Chronic Heart Failure, Adherence, Self care, Depression, Secondary prevention, Social support, Couples therapy.

1. PSYCHO-CARDIOLOGY

Chronic heart failure (CHF) is a debilitating, progressive disease with a heavy disease burden. There are over 23 million people living with CHF worldwide (approximately 300,000 Australians), with 10% increase in new cases annually. CHF is usually secondary to cardiovascular disease (CVD) or hypertension, less commonly attributable to valvular disease, genetic, idiopathic or life style factors (such as alcoholism) [1]. The prevalence of CHF increases with age [2] and it is the most common cause of hospital admissions. Healthcare professionals attribute over 10% of readmissions to poor patient adherence to CHF medication regimens [3].

Depression is common in CVD, even moreso in CHF [4], and is typically characterized by a combination of affective, cognitive and somatic features. Stressors, such as socioeconomic disadvantage, disease burden, and family conflict, increase the risk of depression [5]. For example, worsening functional capacity in CHF is related to increased rates of depression, with approximately 10% of asymptomatic patients showing evidence of depression compared to 40% of patients with severe CHF [6].

Depression is a significant, independent risk marker for mortality and morbidity in CHF [7], via several, probably synergistic, physiologic and behavioural pathways [4, 5]. Given that 15-20% of CHF patients show evidence of depression [6], coupled with the progressive and worsening illness trajectory for CHF patients, it is clear that this population requires careful psychosocial management.

Cognitive impairment is also common in this patient population and may be a precursor, symptom, or unrelated to depression. Although mechanisms linking the two remain unclear, depression combined with cognitive dysfunction (i.e., psycho-cognitive disturbance) undermines a patient’s willingness and capacity to adhere to medication and behavioural regimens.

1.1. Stress and CHF

Psycho-cognitive appraisals of stressors initiate a cascade of autonomic, endocrine and behavioural responses that promote harm minimisation to enhance survival. However, sometimes the stress-response system becomes maladaptive, whereby homeostatic control is compromised [8]. For example, reports of an increased rate of myocardial infarctions and CVD related deaths following sudden life-changing events and acute psychological stress are not uncommon [9-11].
Much research effort has been invested to examine the association between maladaptive responses to stress, either heightened or blunted, and subsequent risk of CVD [8, 12]. For example, blood pressure (BP) reactivity to mental stress has been prospectively linked with future resting BP in adolescents [13, 14], although less so in adults [15]. While cardiovascular stress reactivity appears to predict the development of some prodromal states, such as elevated BP, and new events in existing hypertension and CVD settings, these are intersected by hereditary disease risk factors, disease status, and levels of psychosocial stress exposure [15]. To date, while empirical work that has examined stress reactivity and new CVD is limited and inconsistent, there is coherent evidence to suggest that patients with existing hypertension or CVD are more vulnerable to the deleterious effects of stress [16].

1.2. Pathophysiology of CHF

Heart failure is characterised by a chronic, maladaptive neurohumoral response, partially mediated by the central nervous system (CNS), which exceeds the homeostatic requirements for compensating low cardiac output [17]. Correspondingly, persistent elevation of neuro-peptides (vasopressin), neurohormones (angiotensin, norepinephrine, aldosterone), and proinflammatory cytokines in CHF have poor prognostic implications [18]. Thomas and Marks [19], were among the first to identify a positive association between plasma norepinephrine levels and the extent of left ventricular dysfunction in CHF. Pharmacotherapy for the treatment of CHF targets suppression of the sympathetic nervous system (SNS) (through beta-blockade) and renin-angiotensin aldosterone (RAAS) inhibition.

Alongside their cardiovascular (including metabolic and haemodynamic) benefits, CHF treatments have psycho-cognitive implications. For example, angiotensin converting enzyme (ACE) inhibition has been shown to protect against [20] and reverse [21] cognitive impairment in CHF. sympathopathies, such as beta-blockers, may also benefit cognitive function [22], although more data is needed [23]. For instance, three week exposure to the β-1 selective beta-blocker, nebivolol, at 1mg/kg/day significantly reduced the development of amyloid neuropathology in an Alzheimer’s Disease mouse model [24]. This raises the possibility that the nitric oxide releasing effects that are specific to nebivolol might be important. In this context, the downstream vasodilating and endothelial effects of third generation beta-blockers, such as nebivolol, could conceivably improve cognitive functioning in CHF. Of course these hypotheses require further testing. Nonetheless, given that up to 60% of CHF patients do not adhere to their medical regimens at some point [25], it is important to consider the psycho-cognitive correlates of CHF pathophysiology [26].

1.2.1. SNS Hyper-Activation and Psycho-Cognitive Functioning

CHF and depression are both characterised by hyper-activation of the sympathetic arm of the autonomic nervous system (ANS), parasympathetic hypo-activation and, correspondingly, heightened plasma neuroendocrine hormone levels [27, 28]. ANS dysfunction may explain the greater vulnerability to stressors and increased mortality risk in depressed CHF patients [29].

The risk of cognitive impairment in CHF settings is increasingly recognised [26, 30]. While there are many candidate mechanisms implicated (e.g., those involving the cerebral vasculature), prolonged homeostatic distress (such as chronic stimulation of the RAAS) in CHF appears to offer one explanatory avenue. Chronic elevation of neurohormones causes neuronal atrophy in the hippocampus and prefrontal cortex; regions of the brain essential for memory, attention and executive functioning [31]. Cognitive deficits, such as impaired memory and decision making, undermine patient self care and compliance with heart failure regimens [20, 32]. Alongside impaired cognitive functioning, depression may further undermine motivation to enact health-promoting behaviours. These psycho-cognitive characteristics must be taken into consideration for effective treatment, management and care planning in CHF.

1.3. Chronic Disease Management in CHF

At the point of diagnosis, many CHF patients will be physically and psychologically compromised, some of whom will also have subtle features of cognitive impairment. Capacity and willingness to self-care may, therefore, be compromised in these patients, particularly if their motivation, memory, and decision making capabilities are impaired [33]. Moreover, CHF patients frequently have comorbid conditions, such as diabetes and renal failure, and are likely to be adding to an already complex medical regimen. Families play a vital role in maintaining and optimising the health outcomes of CHF patients [34, 35], but may feel ill-equipped to manage the demands of care-giving (see Section 2.1.1). For many patients and their families, this is the psycho-social context in which they are introduced to chronic disease management programs (CDMP) for CHF.

2. SOCIAL SUPPORT

Families provide the primary source of social support for CHF patients [36]; the type and quality of the support, as perceived by patients, is a critical determinant of patient outcomes [37]. Research has reported a relationship between social support and important CHF life style factors (such as diet, exercise, tobacco and alcohol use) [38]; this relationship may be health-promoting or health-adverse [39]. When social support is perceived as health-promoting, available, and received, it may improve perceived capacity to cope with, and attenuate SNS/neuroendocrine responses to, stressors [34, 35], promote psychological adjustment, and support health-protective behaviours in CHF patients [40, 41].

Support experienced in the context of an ‘intimate, confiding relationship’ can be a particularly powerful moderator of positive health outcomes in CVD [42]. Coyne et al. [43] found that marital quality significantly predicted four-year survival in CHF patients, independent of disease severity. Conversely, family-related ‘barriers’, such as marital discord and poor familial engagement with CHF life style adjustment requirements, have been reported to undermine patient self-confidence and self-care behaviours [37, 44].
2.1.1. Caregiver Burden

The chronicity and unpredictability of CHF can be particularly burdensome for families [45], especially if relationships are already troubled [46]. Many family caregivers feel overwhelmed, isolated, and stifled by their responsibility for CHF patient care and rehabilitation [47]. Partners of CHF patients report unmet informational needs and healthcare support [45]; a situation that is compounded by reduced hospital stays and increased patient self-management and decision-making responsibilities [48]. Partners often feel disregarded by healthcare professionals [45], both in terms of healthcare planning for their relatives and support for their knowledge and emotional needs. As a caregiver of a CHF patient noted, “When they’re having a sleep or when they’re having a bad day, sometimes you just wish you could talk to somebody that understood, that has been there... It just all gets a bit much sometimes. You do feel very, very alone” [49, p.10].

The extent to which spouses’ feel valued and supported by others (such as friends, family and health care professionals) in their care-giving role is likely to impact their capacity to provide support to the patient [50]. The potential for negative emotion contagion between family caregivers and patients, and the corresponding health and quality of life implications [37, 51, 52], highlight the importance of integrated mental health support for families in CDMP.

2.2. Social Support, Adherence and Health Outcomes

Data over many years suggest an association between social support and better health outcomes [53, 54]. Social connectedness independently predicts increased mortality and morbidity risk in CHF [35], perhaps via increased depression [55]. CVD patients are encouraged to utilise social relationships to achieve secondary health benefits; efforts to engage families of patients in interventions have thus been made [56-61]. To date, the effects of social support, via family or friends, in a diverse array of chronic health and life style settings appear generally promising [59, 62-64].

Informal family caregivers, such as spouses, may be particularly influential drivers of patient health behaviours and outcomes [40], possibly via their involvement in practical aspects of patient care [65, 66] and/or relationship factors [46, 61, 67]. Happ et al. [68] found that social support predicted medication and behavioural adherence which was, correspondingly, related to risk of hospital readmission for elderly CHF patients. More recently, Sayers [69] found that social support was associated with CHF patient self care, including medication adherence. Research has also demonstrated the importance of perceived, reciprocal support (i.e., both receiving and giving support) between couples to optimise health-related behaviours [62, 70]. While several physiologic processes are likely implicated in the benefits of social support (i.e., improved neuroendocrine and immune responses through stress reduction), the specific mechanisms remain elusive [67].

Most research to date has tended to focus on the association between perceived social support and health outcomes in patients [71, 72]; while this approach highlights the benefits of family caregivers, their role tends to be as an adjunct to patient-centred therapy, rather than as an integrated con-

tributor and recipient of the therapeutic process [67]. This field remains understudied with few controlled attempts to interrogate couples-oriented, as opposed to patient-centred, approaches to CHF psycho-education. Alongside specialist CHF education, these approaches incorporate the reciprocal relationship needs of couples to achieve individual and dyadic wellbeing, behaviour change and health outcomes [65]. Martire et al. [61] suggest that couples-oriented approaches may yield greater, and longer lasting, behaviour change and support maintenance than patient-centred approaches. This acknowledges the relationship as fundamental to outcomes for couples navigating CVD chronic illness; there is much scope for optimising and harnessing this resource.

2.3. Couples-Oriented Approaches to CHF Care

Few attempts have been made to examine the effects of psycho-education programs designed for patients and family caregivers [73, 74] and outcomes are mixed. In one of the first controlled attempts to explore these issues, Ågren et al. [75] randomised CHF patient-caregiver couples to a brief psycho-education program (comprising three sessions scheduled over three months) or to usual care. The authors found a transient improvement in patient perceived control of their illness at 3, but not at 12, months. No other changes were observed between groups and no benefits were observed in caregivers. In a similar study, Löfvenmark et al. [76] also failed to find any benefit of a psycho-education program for CHF patients and their families on psychosocial status and suggested that antecedents of depression and anxiety, such as such as the patient’s view of their ability to initiate and control their own behaviour, may be important to address in future programs.

Conversely, Shahriari et al. [77] observed a significant improvement in CHF patient self-care following a group caregiver education program, designed to enhance caregivers’ knowledge of heart failure and equip them with strategies to support patients, compared to controls. Dunbar et al. [78] also identified a benefit of two patient-family programs involving either self-care and monitoring education (‘family-patient education’) or education combined with psychosocial support (‘family partnership’) on dietary sodium intake, but not on medication adherence, compared to usual care. In a follow-up sub-study, Stamp et al. [79] identified a significant benefit of the family partnership intervention on patient self care confidence and motivation compared to the family-patient education or usual care at 4 months post-baseline.

There is some evidence to suggest that relationship quality supports, and is reinforced by, patient healthcare behaviours. For example, Sher et al. [67] identified a significant benefit of the ‘Partner for Life’ program (which combined Cognitive Behavioural Couples Therapy with strategies to improve support and communication between CVD patients and their family caregivers) compared to patient-only education on physical activity and medication maintenance. Sher et al. concluded that marital satisfaction interacts with patient adherence, and that improvements in both may be achieved via couples-oriented therapy. Similarly, Stewart et al. [80] found that spouse dyads reported improvements in their relationship, capacity to cope and health-related confidence following a couple-oriented intervention for CVD survivors. Moreover, increased patient self-care had a posi-
tive impact on marital relationships. Taken together, these findings appear to support the utility for couples approaches to CDMP for heart failure; that is, a “dyadic perspective of HF self-care” [73].

Researchers have thus called for investment in “family-focused” interventions to address unmet educational and support needs to optimise outcomes for both patients and caregivers [73, 74, 77, 81]. According to Baucom et al. [65], couples-oriented interventions in medical contexts should responsively: i) engage patients and partners in disease-specific psycho-education; ii) provide opportunities for patients and spouses to communicate thoughts and feelings about how CHF may impact the relationship (ie., such as, for example, through real or perceived changes to sexual functioning), and; iii) offer strategies to facilitate reciprocal, positive, and health-promoting support between spouses. In this regard, Emotional Focussed Therapy (EFT) provides a short-term, empirically validated, goal-oriented therapeutic intervention that uses emotions as the agent of change to reduce distress, optimise coping and support, and enhance attachment in intimate relationships [82]. High quality randomised controlled trials are needed to evaluate whether couples-oriented EFT approaches integrated in CDMP for CHF will improve adherence and, corresponding, offer long-term health gains for patients and their caregivers.

CONCLUSION

Secondary prevention strategies in the treatment and management of CHF have significantly reduced mortality and illness morbidity. However, these advances are counteracted by low adherence to medical and behavioural regimens in a substantial proportion of patients. Recent strategies to reverse these trends recognise the psycho-cognitive and social context for CDMP, drawing on patient social support networks to promote adherence, with growing interest in spousal relationship dynamics. Although research in this field remains inconclusive, better patient outcomes may be achieved by CDMP that offers support to patients and their families. Research that examines the health, adherence and relational impact of well-validated couples-oriented approaches to health interventions, such as EFT, in the setting of CHF is needed.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflict of interest.

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REFERENCES

[1] Haider AW, Larson MG, Franklin SS, et al. Systolic blood pressure, diastolic blood pressure, and pulse pressure as predictors of risk for congestive heart failure in the Framingham heart study. Ann Intern Med 2003; 138(1): 10-6.
[2] Mozaffarian D, Benjamin EJ, Go AS, et al. Heart disease and stroke statistics-2015 update: a report from the American Heart Association. Circulation 2015; 131(4): e29-322.
[3] Annema C, Luttik ML, Jaarsma T. Reasons for readmission in heart failure: Perspectives of patients, caregivers, cardiologists, and heart failure nurses. Heart Lung 2009; 38(5): 427-34.
[4] Hare DL, Toukhatsi SR, Johansson P, et al. Depression and cardiovascular disease: a clinical review. Eur Heart J 2014; 35(21): 1365-72.
[5] Compare A, Gondoni I, Molinari E. Psychological Risk Factors for Cardiac Disease and Pathophysiological Mechanisms: An Overview In: Molinari E, Compare A, Parati G, Eds. Clinical psychology and heart disease. Italy: Springer 2006; pp. 21-32.
[6] Rutledge T, Reis VA, Linke SE, et al. Depression in heart failure a meta-analytic review of prevalence, intervention effects, and associations with clinical outcomes. J Am Coll Cardiol 2006; 48(8): 1527-37.
[7] Jiang W, Kuchibhatla M, Clary GL, et al. Relationship between depressive symptoms and long-term mortality in patients with heart failure. Am Heart J 2007; 154(1): 102-8.
[8] Carroll D, Phillips A, Lovallo WR. The Behavioral and Health Corollaries of Blunted Physiological Reactions to Acute Psychological Stress: Revising the Reactivity Hypothesis. In: Wright RA, Gendolla GHE, Eds. How motivation affects cardiovascular response: mechanisms and applications. Washington, DC: American Psychological Association 2012; pp. 243-263.
[9] Bunker SJ, Colquhoun DM, Ender MD, et al. "Stress" and coronary heart disease: psychosocial risk factors. Med J Aust 2003; 178(6): 272-6.
[10] Kurd BJ, Dar MI, Shoab M, et al. Relationship between stress and coronary heart disease. Asian Cardiovasc Thorac Ann 2014; 22: 142-7.
[11] Rozanski A, Blumenthal JA, Kaplan J. Impact of psychological factors on the pathogenesis of cardiovascular disease and implications for therapy. Circulation 1999; 99(16): 2192-217.
[12] Lovallo WR. Do low levels of stress reactivity signal poor states of health? Biol Psychol 2011; 86: 121-8.
[13] Matthews KA, Woodall KL, Allen MT. Cardiovascular reactivity to stress predicts future blood pressure status. Hypertension 1993; 22(4): 479-85.
[14] Matthews KA, Katholi CR, McCreath H, et al. Blood pressure reactivity to psychological stress predicts hypertension in the CARDIA study. Circulation 2004; 110(1): 74-8.
[15] Treiber FA, Kamarck T, Schneiderman N, et al. Cardiovascular reactivity and development of preclinical and clinical disease states. Psychosom Med 2003; 65(1): 46-62.
[16] Parati G, Valentin F, Mancia G. Psychophysiology of Heart Disease. In: Molinari E, Compare A, Parati G, Eds. Clinical psychology and heart disease. Italy: Springer 2006; pp. 35-69.
[17] Braunwald E. Heart Failure. JACC Heart Fail 2013; 1(1): 1-20.
[18] Sousa-Pinto B, Ferreira-Pinto MJ, Santos M, et al. Central nervous system circuits modified in heart failure: pathophysiology and therapeutic implications. Heart Fail Rev 2014; 19(6): 759-79.
[19] Thomas JA, Marks BH. Plasma norepinephrine in congestive heart failure. Am J Cardiol 1978; 41: 233-43.
[20] Ahilungam P, Moynihan J, Chen L, et al. Elevated levels of interleukin 6 and C-reactive protein associated with cognitive impairment in heart failure. Congest Heart Fail 2013; 19(2): 92-8.
[21] Zuccala G, Onder G, Marzetti E, et al. Use of angiotensin-converting enzyme inhibitors and variations in cognitive performance among patients with heart failure. Eur Heart J 2005; 26(3): 226-33.
[22] Amenta F, Mignini F, Rabbia F, et al. Protective effect of anti-hypertensive treatment on cognitive function in essential hypertension: analysis of published clinical data. J Neurol Sci 2002; 203-204: 147-51.
[23] Feigin V, Ratasabapathy Y, Anderson C. Does blood pressure lowering treatment prevents dementia or cognitive decline in patients with cardiovascular and cerebrovascular disease? J Neurol Sci 2005; 229(230): 151-5.
[24] Wang J, Wright HM, Venkitapathy P, et al. Investigation of nebivolol as a novel therapeutic agent for the treatment of Alzheimer’s disease. J Alzheimers Dis 2013; 33(4): 1147-56.
[25] Aggarwal B, Pender A, Mosca L, et al. Factors associated with medication adherence among heart failure patients and their caregivers. J Nurs Educ Pract 2015; 5(3): 22-7.
Hupcey JE, Fenstermacher K, Kitko L, Stewart M, Davidson K, Meade D, Rosland A-M, Heisler M, Choi H-J, Coyne JC, Rohrbaugh MJ, Shoham V, Green P, Newman JD, Shaffer JA, Tay L, Tan K, Diener E, Hajduk AM, Lemon SC, McManus DD, Bremner DJ. Stress and brain atrophy. CNS Neurol Disord Drug Targets 2006; 5(5): 503-12.

Hajduk AM, Lemon SC, McManus DD, et al. Cognitive impairment and self-care in heart failure. Clin Epidemiol 2013; 5: 407-16.

Foebl AD, Hirdes JP, Heckman GA. Caregiver status affects medication adherence among older home care clients with heart failure. Aging Clin Exp Res 2012; 24(6): 718-21.

Cohen S. Psychosocial models of the role of social support in the etiology of physical disease. Health Psychol 1988; 7(3): 269-97.

Luttk M, Jaarsma T, Moser D, et al. The importance and impact of social support on outcomes in patients with heart failure: an overview of the literature. J Cardiovasc Nurs 2005; 20(3): 162-9.

Kristofferzon ML, Löfmark R, Carlsson M. Coping, social support and quality of life over time after myocardial infarction. J Adv Nurs 2005; 52(2): 113-24.

Dunbar SB, Clark PC, Quinn C, et al. Family influences on heart failure self-care and outcomes. J Cardiovasc Nurs 2008; 23(3): 258-65.

Green P, Newman JD, Shaffer JA, et al. Relations of patients living without a partner or spouse to being physically active after acute coronary syndromes (from the PULSE acelerometry substudy). Am J Cardiol 2013; 111(9): 1264-9.

Tay L, Tan K, Diener E, et al. Social relations, health behaviors, and health outcomes: A survey and synthesis. Appl Psychol Health Well Being 2013; 5(1): 28-78.

Buck HG, Harkness K, Wion R, et al. Caregivers' contributions to heart failure self-care: a systematic review. Eur J Cardiovasc Nurs 2015; 14(1): 79-89.

Graven LJ, Grant JS. Social support and self-care behaviors in individuals with heart failure: An integrative review. Int J Nurs Stud 2011; 48(11): 320-33.

Stewart M, Davidson K, Meade D, et al. Group support for couples coping with a cardiac condition. J Adv Nurs 2001; 33(2): 190-9.

Coyne JC, Rohrbaugh MJ, Shoham V, et al. Prognostic importance of marital quality for survival of congestive heart failure. Am J Cardiol 2001; 88(5): 526-9.

Rosland A-M, Heisler M, Choi H-J, et al. Family influences on self-management among functionally independent adults with diabetes or heart failure: do family members hinder as much as they help? Chronic Illn 2010; 6(1): 22-33.

Hupecey JE, Fenstermacher K, kitko L, et al. Achieving medical stability: Wives' experiences with heart failure. Clin Nurs Res 2010; 19(3): 211-29.

Eriksson M, Asplund K, Svendlund M. Couples' thoughts about and expectations of their future life after the patient's hospital discharge following acute myocardial infarction. J Clin Nurs 2010; 19(23-24): 3485-93.

Bahrani M, Etemadifar S, Shahriari M, et al. Caregiver burden among iranian heart failure family caregivers: A descriptive, exploratory, qualitative study. Iran J Nurs Midwifery Res 2014; 19(1): 56-63.

Hall P, Sanford JT, Demi AS. Patterns of decision making by wives of patients with life threatening cardiac disease. J Fam Nurs 2008; 14(3): 347-62.

Wingham J, Frost J, Britten N, et al; REACH-HF research investigators. Needs of caregivers in heart failure management: A qualitative study. Chronic Illn 2015; 11(4):304-19.

Martensson J, Dracup K, Fridlund B. Decisive situations influencing spouses' support of patients with heart failure: a critical incident technique analysis. Heart Lung 2001; 30(5): 341-50.

Molloy GJ, Johnston DW, Witham MD. Family caregiving and congestive heart failure. Review and analysis. Eur J Heart Fail 2005; 7(4): 592-603.

Chung ML, Moser DK, Lenne TA, et al. The effects of depressive symptoms and anxiety on quality of life in patients with heart failure and their spouses: Testing dyadic dynamics using Actor-Partner Interdependence Model. J Psychosom Res 2009; 67(1): 29-35.

Uchino BN. Social support and health: a review of physiological processes potentially underlying links to disease outcomes. J Behav Med 2006; 29(4): 377-87.

Ruberman W, Weinblatt E, Goldberg JD, Chaudhary BS. Psychosocial influences on mortality after myocardial infarction. N Engl J Med 1984; 319(9): 552-9.

Frasure-Smith N, Lespérance F, Gravel G, et al. Social support, depression, and mortality during the first year after myocardial infarction. Circulation 2000; 101(16): 1919-24.

Lane D, Carroll D, Lip G. Psychology in coronary care. Q J Med 1999; 92(8): 425-31.

Kärner AM, Dahlgren MA, Bergdahl B. Rehabilitation after coronary artery bypass surgery: spouses' views of support. J Adv Nurs 2004; 46(2): 204-11.

Piette JD, Gregor MA, Share D, et al. Improving heart failure self-management support by actively engaging out-of-home caregivers: Results of a feasibility study. Congest Heart Fail 2008; 14(1): 12-8.

Glassad S, Timm H, Vittrup R. Support efforts for caregivers of chronically ill persons. Clin Nurs Res 2010; 19(3): 233-65.

Hartmann M, Bäzzer E, Wild B, et al. Effects of interventions involving the family in the treatment of adult patients with chronic physical diseases: a meta-analysis. Psychother Psychosom 2010; 79(3): 136-48.

Martire LM, Schulz R, Helgeson VS, et al. Review and meta-analysis of couple-oriented interventions for chronic illness. Ann Behav Med 2010; 40(3): 325-42.

Hogan BE, Linden W, Najarian B. Social support interventions: Do they work? Clin Psychol Rev 2002; 22(3): 381-400.

Martire LM, Lustig AP, Schulz R, et al. Is it beneficial to involve a family member? A meta-analysis of psychosocial interventions for chronic illness. Health Psychol 2004; 23(6): 599-611.

Remien RH, Stirratt MJ, Dolezal C, et al. Couple-focused support to improve HIV medication adherence: a randomized controlled trial. AIDS 2005; 19(8): 807-14.

Bassom DH, Perttula LS, Kirby JS, et al. Couple-based interventions for medical problems. Behav Ther 2012; 43(1): 61-76.

DiMatteo MR. Social support and patient adherence to medical treatment: a meta-analysis. Health Psychol 2004; 23(2): 207-18.

Shet T, Braun L, Dumas A, et al. The Partners for Life Program: A couples approach to cardiac risk reduction. Fam Process 2014; 53(1): 131-49.

Happ MB, Naylor MD, Roe-Prior P. Factors contributing to hospitalization of elderly patients with heart failure. J Cardiovasc Nurs 1997; 11(4): 75-84.

Sayers SL, Riegel B, Pawlowski S, et al. Social support and self-care of patients with heart failure. Ann Behav Med 2008; 35(1): 70-9.

Hong TB, Franks MM, Gonzalez R, et al. A dyadic investigation of exercise support between cardiac patients and their spouses. Health Psychol 2005; 24(4): 430-4.
and psychosocial support to patients with heart failure and their partners. J Card Fail 2012; 18(5): 359-66.

[76] Löfvenmark C, Saboonchi F, Edner M, et al. Evaluation of an educational programme for family members of patients living with heart failure: a randomised controlled trial. J Clin Nurs 2013; 22(1-2): 115-26.

[77] Shahriari M, Ahmadi M, Babaee S, et al. Effects of a family support program on self-care behaviors in patients with congestive heart failure. Iran J Nurs Midwifery Res 2013; 18(2): 152-7.

[78] Dunbar SB, Clark PC, Reilly CM, et al. A trial of family partnership and education interventions in heart failure. J Card Fail 2013; 19(12): 829-41.

[79] Stamp KD, Dunbar SB, Clark PC, et al. Family partner intervention influences self-care confidence and treatment self-regulation in patients with heart failure. Eur J Cardiovasc Nurs 2015 [Epub ahead of print].

[80] Stewart M, Davidson K, Meade D, et al. Group support for couples coping with a cardiac condition. J Adv Nurs 2001; 33(2): 190-9.

[81] Liljeroos M, Ågren S, Jaarsma T, et al. Perceived caring needs in patient-partner dyads affected by heart failure: a qualitative study. J Clin Nurs 2014; 23(19-20): 2928-38.

[82] MacIntosh H, Johnson S, Lee A. Hanging onto a Heartbeat: Emotionally Focused Therapy for Couples Dealing with the Trauma of Coronary Heart Disease. In: Molinari E, Compare A, Parati G, Eds. Clinical psychology and heart disease. Italy: Springer 2006; pp. 391-412.
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