

## THE PROBLEMS AND NEEDS OF CAREGIVERS AFTER CORONARY ARTERY BYPASS GRAFT SURGERY: A LITERATURE REVIEW\*

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### ABSTRACT

Along with the developed technology, hospitalization period following the coronary arterial by-pass graft surgery is shortened and the recovery period of home-stay is extended. This case enhances the needs of those charged with offering care to the patients, also causing them troubles. It is, therefore, of importance to make studies on the determination of problems of home caregivers and seek for the ways to solving them. In this compiled manuscript, the literature on the needs and problems of the caregivers following the coronary arterial by-pass graft surgery was reviewed for the sake of forming a baseline for the progressive research in this field and emphasizing the role of nurses in the training of the caregivers.

35 resources were used to form a database for the subject. Of these 35 resources, 19 were found out to be directly concerned with the needs of the caregivers.

The findings obtained from an analysis of the 19 studies showed that caregivers were troubled by physical, psychological and social problems and therefore they needed support and training in patient care.

**Keywords:** caregiver, coronary artery bypass graft surgery, caregiver needs

### ÖZET

Gelişen teknolojiyle birlikte koroner arter by-pass greft ameliyatı sonrası hastanede yatış süresi kısaltılmakta ve evde geçirilen iyileşme süreci uzamaktadır. Bu durum; hastalara evde bakım verenlerin gereksinimlerini artırmakta ve sorun yaşamalarına neden olmaktadır. Bu nedenle evde bakım verenlerin problemleri ve gereksinimlerini belirleyip problemleri çözmeye yönelik çalışmalar yapmak önem kazanmaktadır. Bu derlemede; koroner arter bypass greft ameliyatı sonrası hastalara bakım verenlerin problemleri ve gereksinimleri ile ilgili literatür incelenerek bu alanda yapılacak araştırmalara taban oluşturmak ve bakım verenlerin eğitiminde hemşireliğin önemini vurgulamak amaçlanmıştır.

Konu ile ilgili 35 kaynak derlemeye veri tabanı oluşturmuştur. 35 kaynak içinde doğrudan bakım verenlerin gereksinimlerine yönelik 19 araştırmaya rastlanmıştır.

19 araştırmanın incelenmesi sonucu elde edilen bulgular; bakım verenlerin fiziksel, psikolojik ve sosyal alanda sorunlar yaşadığını ve hasta bakımında destek ve eğitime gereksinim duyduklarını göstermiştir.

**Anahtar Kelimeler:** Bakımverenler, koroner arter bypass greft ameliyatı, bakımverenlerin gereksinimleri

### INTRODUCTION

In the United States in 2004, more than 400.000 patients had coronary artery bypass graft (CABG) surgery (<http://www.strokeassociation.org/presenter.jhtml?identifier=4674>) Because of the advances in surgical and medical technologies, CABG patients can now be safely discharged as early as 3-to-5

days after surgery, and they are cared for by family members at their home (Bernat 1997, Driscoll 2000, Knoll and Johnson 2000). With earlier discharge and increased restrictions on available home care services, the responsibility of families to provide supportive care is also on the increase.

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With these changes, new stresses appear to fall on family caregivers (Knoll and Johnson 2000, Dunstan and Riddle 1997, Hartford et al. 2002).

Investigators have examined patients' recovery and needs following cardiac surgery (Brennan et al.2001, Simani-Oren 2003, Rantanen et al. 2004). However, the needs of the family caregivers are frequently not addressed.

Hospitalization in the postoperative period of CABG surgery is shorter nowadays than in the past, and is expected to be even shorter in the future. This situation requires new struggles in providing care at home. Family members are sure to need more information and support than they do today (Lukkarinen and Kyngas 2003). The concerns of CABG patients' caregivers have attracted some research interest and most have found a constellation of problems arising from caregiving responsibilities (Rantanen et al. 2004, Lukkarinen and Kyngas 2003, Stolarik et al. 2000, Lenz and Perkins 2000, Der Poel and Greeff 2003).

Despite the presence of international studies on the subject, no such study has been found in Turkey on the needs of family caregivers who care after their patients having a CABG operation. Therefore, the present study is intended to analyze and evaluate the international studies on the needs of caregivers charged with caring after the patients who have CABG operation, thus forming a database for the prospective studies to be carried out in Turkey and to emphasize the role of nursing in the training process of the caregivers.

#### **METHOD**

A literature review was conducted by using publications in journal and electronic data bases (MEDLINE/Pubmed-NLM, MEDLINE-PROQUEST, Blackwell-Synergy, Wiley Periodicals, Science Direct) covering a wide period spanning from 1984 to 2005. The key words of caregiver experiences,

caregiver perceptions, caregiver needs, family caregivers, nursing, cardiac surgery caregiving at home, coronary artery disease, CABG, spouse, everyday life, informal carers, cardiac care, caregiver burden were used to conduct this search. Inclusion criteria for this review included: (a) intervention and descriptive studies involving needs of family caregivers and patients after CABG surgery in the last 21 years; (b) randomized controlled trials or quasi-experimental designs. 51 articles were retrieved. The result of this search was 19 relevant studies as summarized in Table1.

The source of studies was nursing journals including Journal of Advanced Nursing (3) ( Davies 2000, Gortner et al. 1988, Theobald and McMurray 2004), Applied Nursing Research(3) ( Artinian 1993, Kneeshaw et al. 1999, Lenz and Perkins 2000), Nursing Clinics of North American (2) ( Gilliss 1984, Dracup et al. 1984), Heart & Lung (2) (Gillis et al. 1990, Artinian 1991), American Journal of Critical Care (1) ( Artinian 1992), Clinical Nursing Research (1) (Artinian and Duggan 1993), AACN Clinic Issues Critical Care Nurse (1) ( Moore 1994), Home Healthcare Nurse (1) (Buls P 1995), The Journal of Cardiovascular Nursing (1) ( Knoll and Johnson 2000), Progressive Cardiovascular Nursing (1) (Stolarik et al 2000), European Journal of Cardiovascular Nursing (1) ( Lukkarinen and Kyngas 2003), Journal of Clinical Nursing (1) (Rantanen et al 2004) and Journal of Sex & Marital Therapy (1) (Der Poel and Greeff 2003).

Fourteen of the studies had descriptive (Knoll and Johnson 2000,Davies 2000, Rantanen et al. 2004, Lukkarinen and Kyngas 2003, Gilliss 1984, Gortner and et al 1988, Gillis et al.1990, Artinian 1991, Artinian 1992, Artinian 1993, Artinian and Duggan 1993,Moore 1994, Kneeshaw et al. 1999,Stolarik et al. 2000), three had experimental (Buls 1995, Lenz and Perkins 2000, Der Poel and Greeff 2003) and one had quasi-

experimental designs (Dracup et al.1984), while one had two-phase naturalistic inquiry (Theobald and McMurray 2004). Nine of the studies were published in the last 10 years of the review period (Knoll and Johnson 2000,Davies 2000, Rantanen 2004,Lukkarinen and kyngas 2003, Kneeshaw et al.1999, Stolarik et al. 2000,Lenz and perkins 2000, Der Poel and Greeff 2003, Theobald and McMurray 2004). Nine studies focused directly on the family caregiver (Knoll and Johnson 2000, Lukkarinen and Kyngas 2003, Artinian 1991, Artinian 1992, Artinian 1993, Artinian and Duggan 1993,Moore 1994, Kneeshaw et al. 1999,Stolarik et al. 2000) while eleven of the studies focused on the experiences of caregivers (Knoll and Johnson 2000,Lukkarinen and Kyngas 2003, Gortner et al. 1988,Artinian 1991, Artinian 1992, Artinian 1993, Artinian and Duggan 1993,Moore 1994, Kneeshaw et al. 1999,Stolarik et al. 2000,Lenz and Perkins 2000). The rest of the studies addressed to the experiences of caregivers and patients (Davies 2000, Rantanen et al.2004, Gilliss 1984, Dracup et al. 1984, Gillis et al.1990, Buls 1995). The search was restricted to publications in the English language.

#### **FINDINGS AND DISCUSSION**

The findings and discussion obtained from the literature review are presented under two titles: the problems of caregivers and the needs of caregivers.

##### **Caregivers' problems**

Cardiac diseases are today ranked as the most serious and significant health problems of the world. This problem affects and concerns not only the patients but also those who are charged with caring after them. A scrutiny of the studies on the problems and needs of the caregivers who care after the patients having undergone CABG surgery between 1984 and 2004 revealed that there was no important change or

betterment in the problems and needs of the caregivers within this 21-year period.

During the act of caregiving, family caregivers can face such problems as insufficiency of time, problems in giving the required care, anxiety and anger, ability to get into the way of such responsibility of caregiving to their other important roles (job, spouse, friendship), excessive burden, fear of worsening or dying of the patient, feelings of anger, guilt or incompetence, conflicts concerning the familial relationships, a new role in the family, inability to make long-term plans and changes in the quality of the relationship with the patient (Gills et al. 1990, Moore 1994, Buls 1995, Knoll and Johnson 2000, Stolarik et al. 200, Lukkarinen and Kyngas 2003). The study of Lenz and Perkins (2000) on patients having undergone CABG surgery and their caregivers showed that caregivers developed more depressive signs than the patients during the convalescence period, and it was stressed that the caregivers should be prepared for that process and their needs should be met. Buls (1995) reported that patients and family members in experimental group had lower mean scores on post-test State- Trait Anxiety Inventory and Affect Adjective Check List than did the control group.

These studies also made it clear that planned training of the caregivers, especially the spouses, as well as the patients at any given period was of importance. It was determined that while no significant change appeared in the training and information needs during this period, the need for the caregivers' self-care increased due to the psychological, physical and social problems faced by them. In addition, the shortened hospitalization period of the chronic patients made it necessary to deal with the requirements of the ones who care after the patients at home.

Table 1. Summary of Studies with Family Caregivers of CABG patients, 1984 – 2004

Author/Yr	N-method	Aim	Findings
Gillis / 1984	71 couples; a longitudinal-descriptive study	To explore stress in the family during and after hospitalization for CABG surgery	Patients and spouses reported high levels of marital conflict, dissatisfaction and discord during the first 6 months after the surgery. Many indicated that they were unprepared for these experiences.
Dracup / 1984	62 married couples; a longitudinal descriptive study	To examine the responses of both patients and spouses to a cardiac event	This study support the view that role supplementation is an important adjunct to the physical conditioning provided in outpatient cardiac rehabilitation programs.
Gortner / 1988	67 couples; a randomized clinical trial	To enhance individual and family health during recovery from heart surgery	This study employed nursing interventions based on self-efficacy and family stress theory during the hospitalization period and for 3 months thereafter. During the post-surgical 3 months, the only statistically significant differences between the experimental group members and controls were on the perceived self-efficacy for lifting and tolerating emotional distress.
Gillis / 1990	67 patient-spouse pairs (experimental n=32; control n=35)	To describe and improve process family functioning after cardiac surgery	Family health was appraised by using the Family APGAR, the Locke-Wallace Marital Adjustment Scale, and the Family Inventory of Resources for Management.
Artinian / 1991	T1 86 women and T2 67 women; a descriptive study	To describe stress process variables in spouses of patients having CABG surgery during hospitalization (T1) and 6 weeks after discharge (T2)	No significant main effects of treatment on any measure. All subjects reported a significant decrease in family functioning in 3 months. Women reported an average number of family life changes and high levels of social support at T1 and T2.
Artinian / 1992	49 women; a descriptive study	To describe spouses' life stressors, supports perceptions of illness severity, role strain, physical and mental symptoms of stress and marital quality 1 year after the mate's CABG surgery	Social support was moderate and significantly less 1 year after surgery than during the first two components (48 hours and 6 weeks after surgery). Women still perceived their husbands to have some illness severity 1 year after surgery.
Artinian / 1993 a	67 female spouses; a longitudinal descriptive study	To describe spouses' perceptions of readiness for discharge after a partner's CABG surgery	Availability of social support, use of coping strategies, personnel resources and knowing what to expect were the major factors that influenced spouses' perceptions of readiness for discharge.
Artinian / 1993 b	109, a longitudinal and descriptive study	First, to describe spouses' concerns and demands related to their partner's recovery from CABG surgery prior to discharge and in 1, 3 and 6 weeks following discharge; second, to describe how spouses' concerns and demands change from time of hospitalization through 6 weeks after discharge	Manifest content analysis revealed that spouses' concerns and demands changed from week to week.

Continue Table 1

Moore /1994	An intervention study	This study consisted of a secondary analysis of a larger study evaluating the effects of a home-going family information intervention.	Results indicated that spouses experienced more psychological distress than patients in 6 weeks after surgery. Younger spouses reported more anger than older spouses as well as patients.
Buls / 1995	60 clients and their spouses; an experimental study	This study compared the anxiety scores of 30 clients and their spouses who had received home visits from the nurse with 30 clients and spouses who did not receive home visits.	This study compared the anxiety scores of 30 clients and their spouses who had received home visits from the nurse with 30 clients and spouses who did not receive home visits. Results of the study showed that clients and families who received home visits had significantly lower anxiety levels than those who did not receive visits.
Kneeshaw /1999	49; a descriptive study	To identify caregivers' feelings of mutuality and reported preparedness for caregiving at hospital discharge and to examine the relationship between these measures and the recovery outcomes of elderly women after CABG surgery.	The caregivers' Mutuality Scale scores and Preparedness for caregiving scores at discharge indicated positive feelings about the relationship with the elderly women and their preparedness.
Davies /2000	60 patients and 60 caregivers; a descriptive study	To examine the congruence between patients' and relatives' perceptions of recovery following cardiac surgery after discharge.	The results indicated that caregivers assumed a heavy burden once the patient had left hospital and were less satisfied with the timing of discharge than the patients
Knoll / 2000	8; a descriptive study	To increase the nursing knowledge regarding the experiences of being a caregiver of a cardiac surgery patient during the immediate post-discharge period.	Findings revealed that the experience was molded by caregivers' past participation as a caregiver, as well as caregivers' and care recipients' outlook on life, their interpersonal relationship and their expectations.
Lenz / 2000	(pilot)/38, an experimental controlled clinical trial	This study examined the effectiveness of a psycho-educational intervention delivered over 12 weeks to assess the responses of both patients and family caregivers to CABG surgery	Family caregivers reported more depressive symptoms than patients.
Stolarik /2000	124; a descriptive study	To describe the burden of care in families of CABG patients	Providing emotional support, taking over household tasks and monitoring patients' conditions created the greatest burden for the participants.
Lukkarinen/2003	146; a descriptive study	To describe the experiences of persons whose spouses have newly diagnosed coronary disease	The spouses of the patients had a new role in the family. They had to monitor for symptoms, treat symptoms, take care, understand and support.
Der Poel/2003	The experimental group consisted of 48 families in which a	The primary goal was to determine to what extent family functioning and specific aspects of the marital relationship are affected by the surgery. The	Te results indicate that CABG surgery influenced certain aspects of the marital relationship and family life of the patient. Patients in the experimental group this played as significant decline in marital

	<p>marital partner had undergone CABG. The control group consisted of 26 families in which a marital partner had undergone orthopedic surgery.</p>	<p>secondary goal was to determine which coping mechanisms are used by families in the two postoperative months in order to adapt to the new family circumstances. For both groups, the baseline measurement took place between 4 and 7 days after the surgery, whereas the post measurements were done 2 months postoperatively. In this study were used four subscales: marital satisfaction, marital communication, satisfaction with the sexual relationship, and equal roles.</p>	<p>satisfaction, marital communication feelings about the division of marital and family roles and family cohesion adaptability, and their marital partners indicated a significant decline in family cohesion.</p>
Rantanen / 2004	<p>53 patients and 47 others; a descriptive study</p>	<p>To describe social support for CABG surgery patients and their significant others from the social network and nurses during hospitalization.</p>	<p>Significant others felt that they had received more information and guidance on the patient's hospitalization than on home care, as about half of the significant others had not received guidance on wound care or written instructions for home.</p>
Theobald / 2004	<p>30 patients and caregiver; a two-phase naturalistic inquiry</p>	<p>To examine the range of post-discharge issues, concerns and needs of patients and family careers after discharge after CABG surgery.</p>	<p>All participants recommended strengthening discharge planning with more accurate information about what to expect during recovery, to help them anticipate fluctuations in health and wellbeing.</p>

This case emphasizes the significance and necessity that those who are charged with providing care at home to the patients having undergone CABG operation should make use of such professional training programs as cardiac rehabilitation, social support, planned discharge, home visits and spiritual support.

Any health problem of any member of a family will strongly influence the other members and family dynamics, and can cause alterations in the daily running of the house (Chambers and Connor 2001). As a chronic illness, cardiovascular disease requires long-term management, which may be viewed as an unfolding course of actions that changes in response to changes in the status of illness. Since most of the work of managing illness goes on at home, the responsibility for ongoing management rests mainly on the shoulders of afflicted individuals and their families. Attending to the experiences of caregivers is important because the patient's psychological adaptation to major cardiac illness has been linked with family function (Horn et al. 2002).

As it can be seen from the results of the studies mentioned in the findings, the family dynamics are affected by the situation, and the balance in the family is disturbed.

#### **Caregiver Needs**

The literature review of the needs faced by those who care after the patients with CABG operation revealed that the following are among the most serious of their needs: written document on how to care after the patients at home after discharge; guidance on wound care, discharge program containing information on home-care to be delivered before discharge; written instructions for home care, cardiac rehabilitation and social support programs as well as spiritual support needs (Dracup et al.

1984, Artinian 1991, Rantanen et al. 2004, Theobald and McMurray 2004, DerPoel and Greeff 2003).

A study by Jickling and Graydone (1997) investigated the information needs at time of hospital discharge of male and female patients who have undergone coronary artery bypass grafting. The results of their study conclude that the highest areas of information needs included treatment and complications, activities, medications, and enhancing quality of life. In the study of Moore (1994), women were caregivers for spouses and wondered who would take care of them both. Davies (2000) reported that family members providing care at home complained about lack of information regarding the provision of care. In the study of Artinian (1993), it was stated that awareness of the social support, using the coping strategies, and being informed about the events that could happen at home of the care family members are important factors that could positively affect the preparations for discharge. Spouses who reported they (themselves) to be feeling unprepared (37%) believed that they did not have enough information, that they were alone in caring after their husbands or that they were unsure whether they or their husbands could cope with the idea of being at home. Spouses wanted information about how to physically care after their husbands, how to interpret signs and symptoms, how to install necessary changes in daily life and how to cope with the changes imposed by surgery. In their study Dracup et al. (1984) reported that role supplementation is an important adjunct to physical conditioning provided in out-patient cardiac rehabilitation programs. Experimental group spouses had greater decreases in anxiety and increases in self-esteem than did the control group.

As it is seen from the results of the studies mentioned in findings, if the caregivers do not have support during the caregiving, or if the support they have is limited, the significant changes in their way of life can increase the risk of stress, anxiety, loneliness, social isolation and depression. This situation negatively affects the quality of life and capability of coping with problems, as well as their roles of caregiving (Driscoll 2000, Hartford et al. 2002, Artinian 1991, Chambers et al. 2001, Sawatzky and Fowler-Kerry 2003).

#### **SIGNIFICANCE OF NURSING**

Cardiac surgery is a stressor that severely destroys the integrity of the family. In the role of teacher, the critical care nurse can function as a catalyst to facilitate the togetherness of the family (Hill 1989). The nurses could promote adaptive coping in family caregivers by teaching them what to expect and how to teach them what to expect and how to manage common emotional reactions. There is an increased need for family interventions that will be used to address to the specific needs of special populations such as CABG patients' family caregivers. Nurses function in both hospital and home environments; teach as well as provide direct service; and care for patients and family caregivers (Horn et al. 2002). Nurses must be cognizant of the context of caregiving, including previous experiences with caregiving and expectations that are held by caregivers. Nurses also need to consider the ability of potential caregivers to provide the necessary care and the kinds of supports required for this role. Caregivers are themselves at risk of illness and injury, and nurses play an important role in ensuring they are not overburdened. It is clear that tensions may arise in the caregiving situation and nurses can act as important resources to allay such tensions (Knoll and Johnson 2000).

Education may assist family caregivers in expanding their coping options when stressful experience is encountered by providing them with more knowledge concerning their situation. Education service starts in the hospital before the discharge, and continues during the caregiving at home. Therefore, such services must be given by the critical care nurse, the clinic nurse within the hospital and by the public health nurse at home after discharge.

Today's cardiovascular nursing care takes account of not only the individual but also the family, work and leisure, from both health and medical care perspective along the complete care chain (Editorial 2003).

In another study that examined (Theobald and McMurray 2004) the range of post-discharge issues, concerns and needs of family caregivers, it was found that all participants recommended strengthening discharge planning with more accurate information about what to expect during recovery, in such a way as to help them anticipate fluctuations in health and well-being.

In Saunders' (2003) report, caregivers have reported that they feel they are being ignored at an alarming level and they are made to feel like an outsider due to the health care providers' attitudes.

Home visit is the optimal place to devise a creative plan for teaching and reinforcement. The majority of the home visits entail evaluating the family caregivers' knowledge deficit and providing the education needed to follow the instructions. If nurse creates an individualized care plan, based on what the family caregivers want and need to know, family caregivers will better understand instructions and be able to apply them to their own lifestyles. This can only result in more efficient and effective outcomes and the increased caregivers' satisfaction.



Buls (1995) found that 2 visits by a registered nurse during the first week after hospital discharge resulted in significantly lower anxiety scores in patients and family members when compared with those of the control subjects. Results of the study indicate the value of home visits to the patient with a coronary artery bypass graft and to family by the nurse as a method of decreasing anxiety and preventing costly rehospitalization (Buls 1995).

To be able to support the bypass surgery patient, significant others should receive the support and counseling needed from nurses, as it is known that a patient's illness is likely to induce changes in the well-being of the significant others (Astedt-Kurki et al. 1999).

With earlier discharge and increasing restrictions on available homecare services, the responsibility of families to provide supportive care is on the increase. In a study by Hartford et al. (2002), it was found that telephone support by the experienced nurses is a viable option to extend support. A more sustained decrease in anxiety in the partner treatment group was found both on the 2nd day and 4th week.

Evangelista et al. (2002) found that the emotional well-being of caregivers is associated with the emotional well-being of heart failure (HF) patients and it suggests the need to focus on supporting caregivers and providing them with the strategies they need to support their loved ones with HF.

In a study by Gillis (1984), it was indicated that patients and spouses were unprepared for experiences. As a result of the findings, a program of nursing care that focuses on the family during and after cardiac surgery has been proposed. The model program consists of preparation for surgery, preparation for discharge and continuous contact with the family after discharge, at least through

the first follow-up appointment in the post-surgical 6th week (Gillis 1984).

Caregivers require advocates, and nurses are well equipped to take on this role. Training of the caregivers according to patients' and their needs is extremely important both for improving the quality of life of the patient having undergone cardiac surgery and the quality of their own life.

### CONCLUSION

This review has explored the experiences of the caregivers at home care following cardiac surgery and their importance in nursing. The literature that has been reviewed acknowledges that providing care at home to the patients having undergone cardiac surgery is perceived as a problem in terms of physical, psychological and social aspects, and that caregivers are in need of regard, support and education.

As a result of the literature review, it has been found out that those who provide care to the patients having undergone CABG surgery experience physical, psychological and social problems and that education and rehabilitation services play an important role in the solution of these problems. Nurses should not only serve the caregivers through their educative role but also motivate them to receive rehabilitation services through their supervisory role.

It appears in the literature review that the caregivers of the patients having CABG surgery experience physical, psychological and social problems, and education and rehabilitation play an important role in the solution of these problems. There has appeared no change, however, in the needs and problems of those who care after the patients having CABG surgery. Accordingly, it is recommendable that descriptive and experimental studies should be made in Turkish population to determine the needs and problems of the relatives of the patients having CABG surgery and that

training programs should be prepared with the collaboration of clinical and public health nurses towards the service

to be offered to the caregivers in training and supervisory fields.

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