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## Articles

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# A study to assess fatigue among patients with cardiac disease

**Pramilaa R.**

**Abstract**

A descriptive study was conducted to assess fatigue among cardiac patients at K.S.Hedge Medical College hospital, Mangalore. All the patients attended cardiac OPD with cardiac disease were selected using convenience sampling technique and sample size comprised of 55 patients. A standardized tool, Multidimensional fatigue inventory- 20 was used to collect the self reports. The findings revealed that 96.4% of the respondents reported that they experience fatigue with cardiac disease. And 61.8 % of respondents had self reported that they experience more of general fatigue than other aspects. The fatigue scores were computed with various cardiac diseases to explore association and it was found general fatigue, physical fatigue and reduced motivation aspects were significantly associated with cardiac diseases at P< .05 level of significance whereas mental fatigue and reduced activity showed no significant association. There was no association between the fatigue scores and demographic variables as well.

**Key words**: Fatigue; Multidimensional fatigue inventory- 20; cardiac disease.

## Introduction

Cardiovascular diseases (CVD) are the world's largest killers, claiming 17.1 million lives a year. According to the recent estimates cases of CVD may increase from 2.9 crore in 2000 to as many as 6.4 crore in 2015. Deaths from CVD will also become more than double. Most of this increase will occur on account of coronary heart disease such as acute myocardial infarction, angina, congestive heart failure and inflammatory heart disease [1].

Data also suggest that although the prevalence rates of CVD in rural populations will remain lower than that of urban populations, they will continue to increase, reaching around 13.5% of the rural population in the age group of 60 -69 years by 2015. The prevalence rates among younger adults aged 40 years and above is also likely to increase. Also, prevalence rates among women will keep pace with those men across all age groups [2] .

Cardiovascular disease strikes Indians early and kills many in their productive mid life years. Deaths due to CVD in the age group of 35 to 64 years resulted in 9.2 million potentially productive years of life being lost in 2000 and are expected to rise to a loss of 17.9 million in 2030 [3].

Fatigue is a frequent compliant during CVD and can sometimes constitute the first clinical manifestation of this disease. It is responsible for deterioration of the quality of life and prognosis [4]. Reports of fatigue preceding cardiac events have recently been confirmed by large prospective studies [5].

Fatigue is one of the most prevalent symptoms in patients with systolic heart failure [6,7]. The prevalence of fatigue in heart failure ranges from 50% to 96% [6,8] and fatigue in this population is associated with poor quality of life [6,8,9], restricted physical activity [10] and worsening heart failure prognosis [11]. A study was conducted to examine the role of clinical and psychological characteristics as predictors of fatigue in congestive heart failure.The results of this study identified exertion fatigue and general fatigue as different manifestations of fatigue. And the findings showed that fatigue was related to both clinical and psychological characteristics. Also the study suggested that use of this knowledge may lead to a better understanding and treatment of the clinical

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manifestations of fatigue in congestive heart failure [10].

A study was conducted to describe the fatigue experience and its relationship to hemoglobin concentration and its effect on quality of life. It was found 33% patients were anemic and the perception of fatigue differed significantly between patients with congestive heart failure and healthy individuals. And anemic patients reported significantly more fatigue compared to non- anemic patients. The study suggested that subjective experience of fatigue in patients with congestive heart failure is associated with low hemoglobin concentration and reduced functional status [12] .

Yet, another study was carried out to assess the importance of self- reported severity of symptoms as predictors of outcomes in congestive heart failure. The results of this study revealed worse scores of breathlessness, orthopnea and fatigue were all significantly related to increased mortality and development of worsening heart failure. And fatigue remained a significant predictor for developing worsening heart failure [11].

In the light of aforementioned studies and with the personal experience of the investigator, it is evident that fatigue is a significant symptom among patients with heart disease. The investigator has taken up this study to explore the extent of fatigue among patients with heart disease such as ischemic heart disease, heart failure, cardiomyopathy, infections of the heart and so on. This proposed study is focused further to describe multidimensions of fatigue such as general fatigue, physical fatigue, mental fatigue, reduced activity and reduced motivation.

**Statement of the problem:**

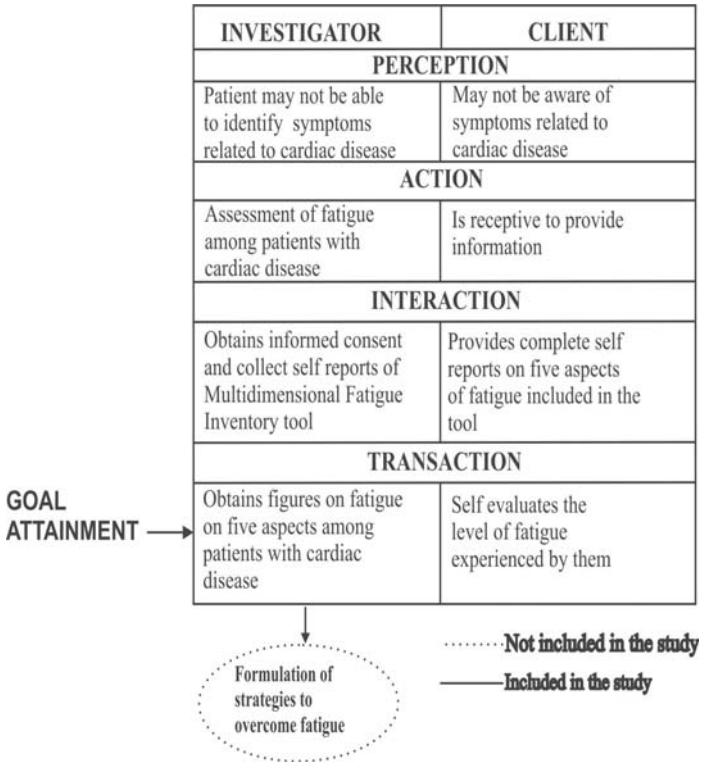
A study to assess fatigue among patients with cardiac disease attending cardiac OPD at KSHEMA, Mangalore

**Objectives of the study:**

1. Assess the scores of fatigue among patients with cardiac disease.
2. Find out association with scores of fatigue and various cardiac diseases.
3. Explore the association with the scores of fatigue and selected demographic variables.

Is based on modified Imogene King's Goal attainment model. The goal of the study is to assess the level of fatigue among various cardiac diseases.

**Fig 1. Schematic representation of conceptual framework based on modified Imogene King's Goal Attainment Theory (1981)**



The concepts of perception, action, interaction and transaction were selected and shown in Figure 1.

## Materials and methods

The schematic representation of the research methodology is shown in figure 2.

*Research methodology*

The research design adopted for the study is descriptive exploratory survey.

*Research setting*

The setting for the study is cardiac OPD at K.S.Hedge Medical College Hospital, Mangalore.

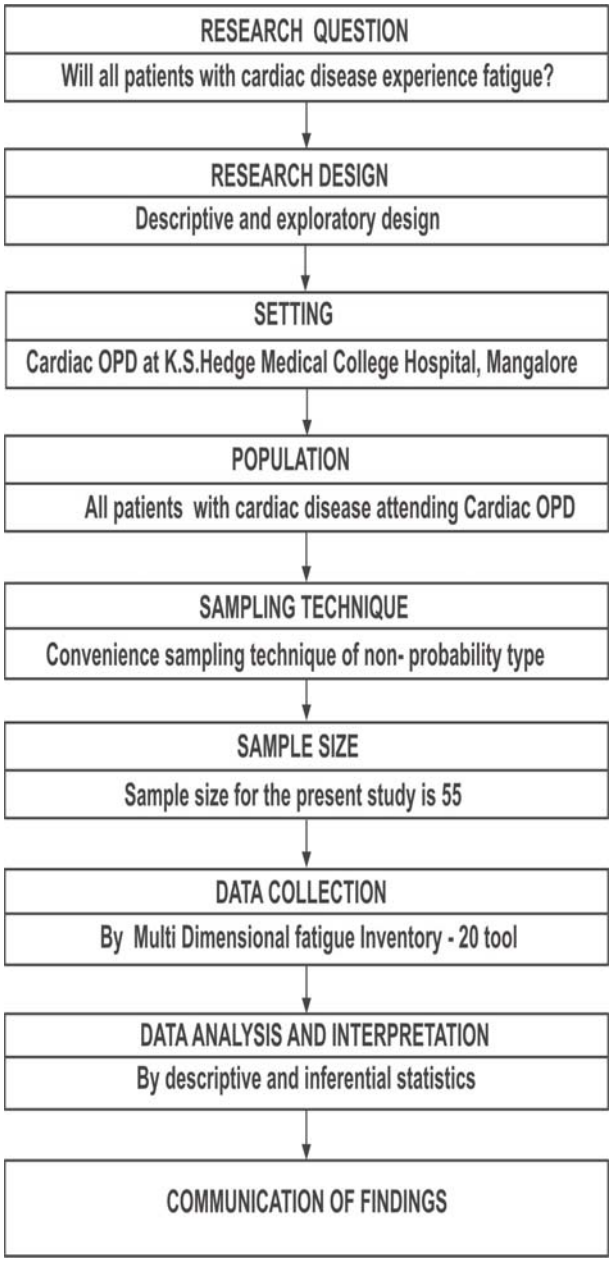
*Population*

*Target population*: All patients diagnosed to have cardiac disease.

*Accessible population*

Patients diagnosed with cardiac disease attending cardiac OPD, at K.S.Hedge Medical College Hospital, Mangalore.

**Fig 2. Schematic representation of the research methodology**



*Sampling technique*

The sampling technique adopted for this study is convenience sampling of non- probability type.

*Sample size*

The sample size for the study is 55.

*Sampling criteria*

*Inclusion criteria*

• Patients with the diagnosis of any cardiac disease, both male and females

• Patients who can read English, Kannada or Malayalam

• Patients who are willing to participate in this study

• Patients who are available during data collection period

*Exclusion criteria:*

• Patients who are not oriented

• Patients who are blind

**Tools for data collection**

Section- A: Consists of demographic data

Section - B: Comprises of Multidimensional Fatigue Inventory- 20, a standardized instrument to assess fatigue.

*Method of data collection*

Permission was obtained from the authorities of the hospital and the respondents meeting the inclusion criteria were selected using convenience sampling method. The tool was distributed to them and collected after the completion of the self reports. The duration of data collection was two weeks. The respondents were very cooperative.

*Data analysis and interpretation*

The demographic characteristics of the respondents are shown in table 1

The frequency of fatigue among respondents relating to five aspects of fatigue inventory is depicted in table 2.

Table 3 reveals the association of the scores of fatigue aspect wise with cardiac diseases. Except mental fatigue and reduced activity it shows statistically significant at P<.05 level with aspects of general fatigue, physical fatigue and reduced motivation.

An association with aspects of fatigue scores and selected demographic variables were computed and it was found except occupation there is no significant association.

**Discussion**

The discussion is followed corresponding with the objectives of the study. The first objective of the study was to assess the scores of fatigue among cardiac patients. The findings of the study revealed that 96.4% of the respondents reported that they experience fatigue with cardiac disease. It was further explored with each aspect of fatigue. The majority 61.8 % of respondents had self reported that they experience more of general fatigue than other aspects. With regard to general fatigue the percentage of respondents self reported as true and very true of experience of fatigue were 61.8 and 21.6; physical fatigue were 56.4 and 34.5; mental fatigue were 40 and 9.1; reduced activity 56.4 and 21.8; and reduced motivation 49.1 and 3.6 respectively. Several studies have given the similar findings that fatigue is common in patients among cardiac diseases. The aim of the study was to examine the effect of ischemic heart disease stage on fatigue and depressive symptoms at 12-month follow-up. Increased levels of fatigue and/or depression have been found in coronary heart disease, post-myocardial infarction, and congestive heart failure patients [13]. And a qualitative study done among women with chronic heart failure also brought out themes related to fatigue as 'living with the loss of physical energy' and 'striving for independence while being aware of deteriorating health' [14].

The second objective of the study was to find out association between the fatigue scores and cardiac diseases. An attempt was done to associate between each aspects of fatigue and cardiac diseases. It was found general fatigue, physical fatigue and reduced motivation aspects were significantly associated with cardiac diseases at P< .05 level of significance whereas mental fatigue and reduced activity showed no significant association. The findings of the present

**Table 1. Percentage distribution of respondents by selected demographic variables N = 55**

| Variables | | Category | Frequency | Percent |
|---|---|---|---|---|
| Age Group | | Below 40 Years | 6 | 10.9 |
| | | 40 - 50 Years | 6 | 10.9 |
| | | 50 - 60 Years | 12 | 21.8 |
| | | 60 - 70 Years | 17 | 30.9 |
| | | Above 70 Years | 14 | 25.5 |
| Gender | | Male | 43 | 78.2 |
| | | Female | 12 | 21.8 |
| Educational Qualification | | No Formal Education | 15 | 27.3 |
| | | Primary | 13 | 23.6 |
| | | Secondary | 13 | 23.6 |
| | | High School | 3 | 5.5 |
| | | Pre Degree | 7 | 12.7 |
| | | Graduate | 4 | 7.3 |
| Marital Status | | Married | 52 | 94.5 |
| | | Unmarried | 3 | 5.5 |
| No of Children | | No Children | 4 | 7.3 |
| | | 2 | 15 | 27.3 |
| | | 3 | 18 | 32.7 |
| | | More than 3 | 18 | 32.7 |
| Occupation | | Unemployed / Retired | 23 | 41.8 |
| | | Government | 1 | 1.8 |
| | | Private | 9 | 16.4 |
| | | Business / Self Employed | 8 | 14.5 |
| | | Agriculture | 5 | 9.1 |
| | | Housewife | 9 | 16.4 |
| Family Income | | Below 5000 | 18 | 32.7 |
| | | 5000 - 9999 | 26 | 47.3 |
| | | 10000 or More | 11 | 20.0 |
| Area of Residence | | Rural | 47 | 85.5 |
| | | Urban | 8 | 14.5 |
| Type of Family | | Joint | 45 | 81.8 |
| | | Nuclear | 10 | 18.2 |
| Risk factors &frequency | Smoking | Regular | 19 | 34.5 |
| | | Occasional | 02 | 3.6 |
| | | Never | 34 | 61.8 |
| | Alcohol | Regular | 15 | 27.3 |
| | | Occasional | 4 | 7.3 |
| | | Never | 36 | 65.4 |
| | Tobacco | Regular | 0 | 0 |
| | | Occasional | 2 | 3.6 |
| | | Never | 53 | 96.34 |
| Co morbid conditions | Hypertension | Yes | 37 | 67.23 |
| | | No | 18 | 32.77 |
| | Diabetes Mellitus | Yes | 22 | 40.0 |
| | | No | 33 | 60.0 |
| | Hyperlipidemia | Yes | 2 | 3.6 |
| | | No | 53 | 96.4 |
| | Renal in sufficiency | Yes | 0 | 0 |
| | | No | 55 | 100 |
| | Anemia | Yes | 3 | 5.5 |
| | | No | 52 | 94.5 |
| Symptom of dyspnea | | Yes | 45 | 81.8 |
| | | No | 10 | 18.2 |
| Regular exercise | | Yes | 8 | 14.5 |
| | | No | 47 | 85.5 |
| Balanced Nutrition | | Yes | 34 | 61.8 |
| | | No | 21 | 38.2 |
| Regular sleep | | Yes | 16 | 29.1 |
| | | No | 39 | 70.9 |
| Symptom of fatigue | | Yes | 53 | 96.4 |
| | | No | 2 | 3.6 |
| Duration of fatigue | | 6 months - 1year | 8 | 14.5 |
| | | 1 -3 years | 26 | 47.3 |
| | | 3 -6 years | 13 | 23.6 |
| | | > 6 years | 8 | 14.5 |
| On beta blockers | | Yes | 47 | 85.5 |
| | | No | 8 | 14.5 |
| Diagnosis | | Ischemic Heart Disease | 45 | 81.8 |
| | | Cardiomyopathy | 1 | 1.8 |
| | | Rheumatic heart disease With mitral stenosis | 4 | 7.3 |
| | | Mitral valve prolapse, mitral regurgitation | 1 | 1.8 |
| | | Mitral stenosis | 2 | 3.6 |
| | | Atrial fibrillation | 1 | 1.8 |
| | | Congestive heart failure | 1 | 1.8 |

study are consistent with a study done on impact of fatigue in every day life among older people with chronic heart failure. The assessment of fatigue was done using multidimensional fatigue inventory and results showed patients self reported higher levels of general fatigue, physical fatigue and reduced motivation [15].

The third objective was to associate fatigue scores with selected demographic variables. It was found except occupation there was no significant association between them.

**Table 2. Percentage distribution of respondents by aspects of Fatigue**

| Variables | Scores | Frequency | Percentage |
|---|---|---|---|
| General Fatigue | 2 | 1 | 1.8 |
| | 3 | 7 | 12.7 |
| | 4 | 34 | 61.8 |
| | 5 | 13 | 23.6 |
| Physical Fatigue | 3 | 5 | 9.1 |
| | 4 | 31 | 56.4 |
| | 5 | 19 | 34.5 |
| Mental Fatigue | 2 | 5 | 9.1 |
| | 3 | 23 | 41.8 |
| | 4 | 22 | 40.0 |
| | 5 | 5 | 9.1 |
| Reduced Activity | 3 | 12 | 21.8 |
| | 4 | 31 | 56.4 |
| | 5 | 12 | 21.8 |
| Reduced Motivation | 2 | 2 | 3.6 |
| | 3 | 24 | 43.6 |
| | 4 | 27 | 49.1 |
| | 5 | 2 | 3.6 |

## Nursing implications

• The findings of the present reveal that assessing level of fatigue and identifying the aspect of fatigue helps nurse to design interventions so as to help patients to adopt energy conserving techniques.

• The study contributes to the understanding of fatigue.

• The present study motivates to develop and evaluate interventions that may reduce fatigue.

## Conclusion

Fatigue has a negative impact in meeting activities of daily living from physical level rather than mental level. It is suggested that patients should be made aware of these symptoms once the patient is diagnosed to have cardiac disease. Besides instilling awareness the strategies to conserve energy and activities to be avoided should be elaborated in detail as a secondary prevention measure.

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**Table 3. Association between Fatigue and various cardiac diseases**

| Variables | Scores | Cardiac diseases | | | | | | | Chi - square |
|---|---|---|---|---|---|---|---|---|---|
| | | Atrial fibrillation | Cardiomyopathy | CCF | IHD | MS | MVP / MR | RHD | |
| General Fatigue | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 64.76 S |
| | 3 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | |
| | 4 | 1 | 0 | 0 | 28 | 2 | 0 | 3 | |
| | 5 | 0 | 0 | 1 | 11 | 0 | 1 | 0 | |
| Physical Fatigue | 3 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 26.16 S |
| | 4 | 0 | 0 | 0 | 28 | 1 | 0 | 2 | |
| | 5 | 1 | 0 | 1 | 15 | 1 | 1 | 0 | |
| Mental Fatigue | 2 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 24.23 NS |
| | 3 | 0 | 0 | 0 | 19 | 1 | 1 | 2 | |
| | 4 | 1 | 0 | 0 | 18 | 1 | 0 | 2 | |
| | 5 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | |
| Reduced Activity | 3 | 0 | 1 | 0 | 9 | 1 | 0 | 1 | 14.85 NS |
| | 4 | 0 | 0 | 0 | 28 | 0 | 1 | 2 | |
| | 5 | 1 | 0 | 1 | 8 | 1 | 0 | 1 | |
| Reduced Motivation | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 61.09 S |
| | 3 | 0 | 0 | 0 | 19 | 1 | 0 | 4 | |
| | 4 | 1 | 0 | 0 | 24 | 1 | 1 | 0 | |
| | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | |

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# Effect of Foot Massage on Selected Side-Effects of Cancer Chemotherapy in Hospitalized Adult Patients

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**Anupama Achom**

**Abstract**

In the recent years, there has been an increased acceptance of the use of Complementary Alternative Medicine (CAM) in the health care system. Massage is one of the CAM which is thought to work by improving circulation which reduces pain caused by the accumulation of irritants such as lactic acid and inflammatory substances, it also relaxes the person thus raising the pain threshold. Interest in the therapeutic use of touch through massage has grown with several writers advocating the use of massage in daily nursing practice to promote comfort and demonstrate caring. The objectives of the study were i) assess the pre-intervention data of selected side-effects associated with cancer chemotherapy in both experimental and control groups ii) determine the selected side-effects associated with cancer chemotherapy after intervention by comparing the scores of experimental and control groups.

*Hypothesis of the study:* There is a significant difference in the mean nausea and pain scores after foot massage between experimental and control groups. *Methodology:* The study adopted a quasi experimental design. Foot massage was chosen as intervention. Data was collected from cancer patients receiving chemotherapy medications and suffering from pain and nausea. *Results:* The results of the study revealed pre-intervention data of the mean pain scores of the control group was 5 and experimental group was 6.35 and nausea scores of the control group was 4.7 and experimental group was 7.1. The after-intervention data of the mean of pain in control group was 3.4 and experimental group was 1.35 and nausea scores in control group were 3.7 and experimental group was 1.65. Comparison of the mean difference of pain and nausea between the two groups shows that experimental group was significantly higher than the control group.

**Keywords:** Foot massage; Pain, Nausea, Heart rate.

## Introduction

It is a known fact that nausea and vomiting is one of the most common side effects of chemotherapy treatment. Pain results from the cancer disease itself and chemotherapy treatment is also one of the common situations encountered by the health team. Effective control remains one of the most important issues in the field of nursing. Nursing is an art of applying scientific principles in a humanitarian way to the care of people experiencing potentially maladaptive stress. Nurses assist people to satisfy the basic human needs whether they are sick or well. According to Virginia Henderson, each person has a basic need to be free from pain and discomfort.

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Nurses can use non pharmacological measures such as foot massage which provides relaxation, diminishes isolation through physical contact, improves circulation of blood and lymph, decreases anxiety and relieves pain. The researcher during her pre pilot observation for exploration of researcher problem in the oncology department found that the nursing staffs were aware that patients were having nausea, vomiting and pain because of chemotherapy treatment. They neither assessed the intensity of the patient's pain and nausea nor carried out any nursing interventions than the routine activities. As a part of massage therapy, a foot massage can be employed in reducing cancer chemotherapy side effects. Hence, the researcher felt a need to find the effect of foot massage on selected side effects of cancer chemotherapy in a selected hospital.

## Objectives of the study

1. Assess the pre intervention data of selected side-effects associated with cancer chemotherapy in both experimental and control groups.

2. Determine the selected side-effects associated with cancer chemotherapy after intervention in both experimental and control groups.

3. Compare the difference of selected side-effects associated with cancer chemotherapy in both experimental and control groups.

## Materials and methods

*Research approach*

The study used quantitative research approach.

*Research Design*

Quasi experimental which belongs to experimental study.

*Setting of the study*

The study was conducted in Deenanath Mangeshkar Hospital (DMH), Pune which is a multispeciality hospital having 450 bedded.

*Variables under study*

The major variables included were: dependent variables (pain, nausea and relaxation) and independent variables (foot massage).

*Population*

The population comprised adult male and female cancer patients receiving chemotherapy medications admitted in DMH during the period of study.

*Sample*

Sample consisted of forty cancer patients receiving chemotherapy drugs.

### Sampling criteria

*Inclusion criteria*

a. Cancer patient admitted in a selected hospital.

b. Patient receiving chemotherapy medications.

c. Patient suffering from pain and nausea because of chemotherapy.

d. Age group between 30 -70 years.

e. Patient who understand Marathi, Hindi or English.

f. Patient who are willing to participate in study.

*Exclusion criteria*

Contraindications of foot massage

a. Coagulation disorders, complicated by bruising and internal hemorrhage.

b. Low platelet count.

c. Medications: coumadin, acetylsalicyclic acid, heparin.

d. Metastasis to bone, complicated by fracture.

e. Open wound / radiation dermatitis, complicated by pain and infection.

*Sampling technique*

The sampling technique used in this study was non probability purposive method of sampling.

*Tools and technique*

The data for the present study were collected by the following tools:

1. Demographic profile: Consists of 11 items which include the information of personal nature, diseases related, medicines related (prescribed chemotherapy, antiemetics, analgesics) and complications related to the contraindications of foot massage.

2. Structured Interview Questionnaire: Structured Interview Questionnaire consists of items related with pain and nausea before and after foot massage.

3. Visual Analogue Scale: Visual Analogue Scale (0 to 10) was used for the assessment of pain and nausea scores before and after foot massage.

4. Heart Rate Monitoring: Heart Rate Monitoring was used for the assessment of relaxation before and after foot massage.

*Testing of the tool*

The tool prepared for data collection was tested for its content validity, feasibility and reliability.

*Data collection method*

Before the actual data collection, the researcher has completed the following formalities:

Requisition letter for conducting research study and brief details of study were sent to a selected Hospital.

The researcher explained the nature of the study to the Physician and the Staff Nurses working in the Oncology Department. The data gathering process took place in April 2010.The participants were selected using the non probability purposive sampling technique. The researcher explained the brief details of the study to the participants and written informed consent was taken and confidentiality was assured to all the participants to get their co-operation throughout the process of data collection. The study was conducted among forty cancer patient receiving chemotherapy medications. Out of which twenty of each were in experimental and control group. The researcher interviewed with the participants for assessing pain and nausea with the questionnaires and visual analogue scale. Their heart rate was also checked for the assessment of relaxation. Foot massage for 10 minutes was given to the experimental group by the researcher twice a day morning and evening for two consecutive days. After massage, the researcher assessed pain and nausea with the questionnaires and visual analogue scale. Their heart rate was also checked for the assessment of relaxation. The researcher did not face any difficulty in collecting the data from the participants. The data thus collected were compiled for analysis.

## Results

**Table 1. Descriptions of participants according to their demographic variables N = 40**

| Sr. No. | Demographic characteristics | f | % |
|---|---|---|---|
| 1. | **Age (in years)** | | |
| | 30-39 | 5 | 12.50 |
| | 40-49 | 10 | 25.00 |
| | 50-59 | 12 | 30.00 |
| | 60-69 | 10 | 25.00 |
| | Up to 70 | 3 | 7.50 |
| 2. | **Sex** | | |
| | Female | 21 | 52.50 |
| | Male | 19 | 47.50 |
| 3. | **Educational status** | | |
| | Illiterate | 9 | 22.50 |
| | Primary education | 9 | 22.50 |
| | Secondary education | 11 | 27.50 |
| | Graduation | 9 | 22.50 |
| | Post Graduation and above | 2 | 5.00 |
| 4. | **Occupation** | | |
| | Housewife | 17 | 42.50 |
| | Laborer | 1 | 2.50 |
| | Service | 13 | 32.50 |
| | Farmer | 8 | 20.00 |
| | Any other | 1 | 2.50 |
| 5. | **Marital status** | | |
| | Married | 39 | 97.50 |
| | Unmarried | 1 | 2.50 |
| 6. | **Religion** | | |
| | Muslim | 1 | 2.50 |
| | Hindu | 38 | 95.00 |
| | Christian | 1 | 2.50 |

The above Table 1 shows the distribution of participants according to their age, depicts that 12.5 % were in the age group of 30-39, 25 % were in the age group of 40-49, 30 % were in the age group of 50-59 year and 25% were in the age group of 60-69 and only 7.5% were in the age group of 70 years of age. Hence, it is interpreted that most of the participants under study were in the age group of 50-59.

Distribution of participants according to their sex shows that 52.50 % were females and 47.50 % were males.

Distribution of participants according to their educational status shows that 22.50 % are illiterates, 22.50 % have primary education , 27.50 % have secondary education , 22.50 % are graduates and only 5.00% are post graduates and above. Hence, it is interpreted that most of the participants under study were secondary education and a few of them were post graduate and above.

Distribution of participants according to their occupation shows that 42.50 % were housewives, 2.50 % were laborers, 32.50 % were doing services, 20.00 % were farmers and 2.50% were drivers and retired. Hence, it is interpreted that most of the participants under study were housewife and very few were laborers and other services.

Distribution of participants according to their marital status shows that 97.50 % were married and 2.50 % were unmarried. Hence, it is interpreted that almost all the participants under study were married.

Distribution of participants according to their religion shows that 2.50 % were Muslim, 95.00% were Hindu, and 2.50 % were Christian. Hence, it is interpreted that almost all the participants under study were Hindu.

Distribution of participants according to their diagnosis shows that majority of them 15 % were diagnosed as breast cancer, 12.50 % were lung cancer, and others were diagnosed as lymphoma, stomach cancer, colon cancer, rectum cancer, ovary cancer, pancreas cancer, leukemia, tongue cancer, caecum cancer, larynx cancer, etc.

Distribution of participants according to the prescribed chemotherapy medications shows that majority of them 42.5 % received cisplatin, 20% received adriamycin and 5- flurouracil , few received palzen, endoxan, docetaxel, etoposide, trinotel,vincristine, holoxan, empov, bleomycin, cytosine, vinblastine, ifosphomide, effcorlin, mabthera, etc.

Distribution of participants according to the prescribed antiemetics medications shows that majority of them 35 % received perinorm and domstal.

Distribution of participants according to the prescribed analgesic medications shows that majority of them 20 % received tramadol.

Distribution of participants according to the complications which is contraindicated to give foot massage showed that all the participants (100%) did not have any complications like coagulation disorders, low platelet count, metastasis to bone, radiation dermatitis, complications by fracture, open wounded complicated by pain and infection.

**Fig 1. Bar diagram showing mean scores of pain after intervention of both groups**


**Fig 2. Bar diagram showing mean scores of nausea after intervention of both groups**

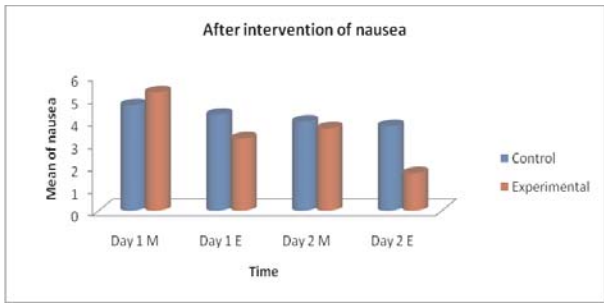
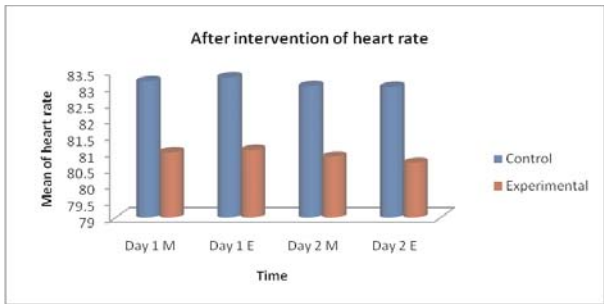



**Fig 3. Bar diagram showing mean scores of heart rate after intervention of both**




The table 2 presents the t values and p value between the experimental and control groups with regard to pain. As p value is less than 0.01, $H_0$ is rejected at 5 % l.o.s. Therefore, $H_1$ is accepted. The t value computed between experimental and control groups t (38) = - 9.0072, p < 0.000 *** indicates that there is a highly significant difference between the experimental and control groups with regard to

**Table 2. t test analysis of comparing the difference of pain after intervention in both experimental and control groups**

N=40

| Variable | H1 | t test | df | table value | p-value | Inference |
|---|---|---|---|---|---|---|
| Pain | μ1<μ2 | -9.0072 | 38 | 1.686 | 0.000*** | Reject H0 (at 5 %l.o.s) |

t (38) = 1.686 p < 0.05

**Table 3. t test analysis of comparing the difference of nausea after intervention in both experimental and control groups**

N=40

| Variable | H1 | t test | df | table value | p-value | Inference |
|---|---|---|---|---|---|---|
| Nausea | μ1<μ2 | -9.055 | 38 | 1.686 | 0.000*** | Reject H0 (at 5 %l.o.s) |

t (38) = 2.024 p > 0.05

pain. The mean scores of pain are represented in fig 1.

Table 3 presents the t values between the experimental and the control groups with regard to nausea. As p value is less than 0.01, $H_0$ is rejected at 5 % l.o.s. Therefore, $H_1$ is accepted. The t value computed between the experimental and control groups , t (38) = - 9.055, p < 0.000 *** indicates that there is a highly significant difference between the experimental and control groups with regard to nausea. The mean scores of nausea are shown in fig 2.

Table 4 presents the t values between the experimental and the control groups with regard to heart rate. As p value of 0.093 is greater than reasonable choice of alpha = 0.05, Ho is fail to reject at 5 % l.o.s. Therefore, Ho is accepted. The t value computed between experimental and control groups t (38) = - 1.723, p > 0.093 n s indicates that there is no significant difference between the experimental and the control groups with regard to heart rate. The mean scores of heart rate displayed in fig 3.

Thus, the analysis indicates that null hypotheses $H_O$ could be rejected with respect to pain and nausea. Hence, it is concluded that there is a highly significant difference in the mean pain and nausea scores after intervention between experimental and control groups.

*Questionnaires to the experiences of selected side effects before and after intervention*

Experiences of pain before intervention in both groups depicts that 17.5 % have pain during the chemotherapy treatment, 45% have pain soon after the chemotherapy treatment and 37.5% have pain throughout the day. Hence, it is interpreted that most of the participants under study have pain soon after the chemotherapy treatment and a few of them have pain during chemotherapy treatment.

Among the study participants 55 % of them have aching pain, 15% aching and pricking pain, 2.5% burning pain, 5% burning and aching pain, 17.5% pricking pain, 2.5% sharp pain and 2.5% aching, pricking and burning type of pain. Hence, it is interpreted that most of the participants under study have aching type of pain and a few of them have burning, pricking and sharp type of pain.

In the experimental group, 80 % of the participants have reduce pain after foot massage, 20 % of the participants have relief pain after foot massage and nobody have increase pain after foot massage. 75% of the participants said that this intervention is effective about 50-75 % and 25 % of the participants said that this intervention is effective about 76 % and above.

Experiences of nausea before intervention in both groups depicts that 12.5% have nausea during the chemotherapy treatment, 80 % have nausea soon after the chemotherapy treatment and 7.5% have nausea at any time of the day. Hence, it is interpreted that most of the participants under study have nausea soon after the chemotherapy treatment, a few of them have nausea during chemotherapy treatment and very few of them have nausea at any time of the day.

In the experimental group, 80 % of the participants have reduced nausea after foot massage, 20 % of the participants have relief nausea after foot massage and nobody has increased nausea after foot massage. 70% of the participants said that this intervention is

**Table 4. t test analysis of comparing the difference of heart rate after intervention in both experimental and control groups**

N=40

| Variable | H1 | t test | df | table value | p-value | Inference |
|---|---|---|---|---|---|---|
| Heart rate | μ1#μ2 | -1.723 | 38 | 2.024 | 0.093ns | Accept H0 (at 5 %l.o.s) |

t (38) = 2.024 p > 0.05

effective about 50-75 % and 30 % of the participants said that this intervention is effective about 76 % and above.

Therefore from the present research study, the comparison of the mean pain and nausea scores of the experimental group with control group shows a highly significant difference statistically at 100 % level of confidence. It can be interpreted from the above findings that the intervention brought out the highly significant mean differences in the experimental group. In other words, foot massage helps to reduce pain and nausea. With the above findings, the null hypotheses $H_O$, stating that there is no significant difference in the mean nausea and pain scores after foot massage between experimental and control groups, is rejected. The alternative hypotheses $H_1$, proposing that there is a significant difference in the mean nausea and pain scores after foot massage between experimental and control groups, is accepted.

## Discussion

The findings of the present study are consistent with that of Grealish L, Lomasney A, Whiteman B, who reported the findings of an empirical study on the use of foot massage as a nursing intervention in patients hospitalized with cancer. In a sample of 87 subjects, a 10 minute foot massage (5 minutes per foot) was administered. The pretest mean pain score for control session was 21.3 $\pm$ 20.2 mm.The control session post test mean pain score was 20.4 $\pm$ 19.8 mm representing a mean difference of 0.874 mm (t = 0.867). The pretest mean pain score for massage session one was 25.1$\pm$ 21.7 mm which was decreased to 15.3 $\pm$ 19.0 mm , (t = 5.97) immediately after massage, resulting in a mean difference of 9.8. Similarly, the mean score for massage session two decreased from 27.9 $\pm$ 25.5 mm to 18.5 $\pm$ 19.1 mm , (t = 5.75). Thus the pain levels reported by the subjects decreased significantly during massage treatment and it had a significant immediate on the perception of pain. The use of foot massage as a complementary method is recommended as a relatively simple nursing intervention for patients experiencing nausea or pain related to the cancer experience.

The research studies of Annika Bilhult and others reported that massage lowered nausea in women with breast cancer undergoing chemotherapy. Massage therapy significantly reduced nausea compared with control treatment (p = 0.025).

The above findings support the findings of the present study, which indicates that the foot massage is effective in reducing the side effects of cancer chemotherapy medications i.e., pain and nausea.

Since, there was highly significant difference at the 0.05 level, the null hypotheses $H_O$, were rejected and the alternative hypotheses $H_1$ that was significant reduction in pain reported by experimental groups were accepted.

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# Palliative Care: A Family Care approach

**Vijaya Udumala JMJ**

**Abstract**

Providing adequate supportive services for the families of palliative care patients is a core principle of palliative care. Caring for a patient with terminal illness at home involves a considerable commitment on the part of family caregivers, and attention must be given to the caregiver's needs as well as those of the patient. Enhanced supportive care strategies can ameliorate the challenges facing families of palliative care patients cared for at home. All health professionals need to improve the standard of family-centred palliative care, and more evidence-based approaches are required. There is a growing trend for people with a terminal illness to remain at home, where practicable. Despite the input offered by professional palliative care services, care within the home usually relies primarily on a family member or friend. Indeed, without the support of caregivers, home palliative care would be impossible for many people. This article outlines current issues related to home-based palliative care for enhancing the quality of this care.

**Keywords:** Palliative care, Care giver, Quality of life, Family coping.

## Introduction

The term "Palliative Care" is used to describe the care and support that is provided to people who have a life threatening illness. The World Health Organisation states;

"Palliative care is the active total care of patients whose disease is not responsive to curative treatment. Control of pain, of other symptoms, and of psychological, social and spiritual problems is paramount. The goal of palliative care is achievement of the best quality of life for patients and families" (WHO).

Palliative care means that the client's comfort and dignity become the priority and adequate support is provided to them and others in the family. It has been said that palliative care is about "adding life to years, not years to life".

Palliative care is expected to be holistic and multidisciplinary; it is provided to both the patient and their family. Effective communication between the patient, the family and health care professionals are undertaken for multiple purposes including the sharing of information and concerns, clarifying the goals of care, discussing diagnosis, treatment, and prognosis and developing a plan of care for the patient and family carers

Family palliative care is a philosophy of comfort driven care and support delivered by Family members for those with a life-limiting illness.

The focus on a patient's quality of life has increased greatly during the past twenty years. In the United States today, 55% of hospitals with more than 100 beds offer a palliative-care program, and nearly one-fifth of community hospitals have palliative-care programs. A relatively recent development is the concept of a dedicated health care team that is entirely geared toward palliative treatment: a palliative-care team.

### *How do families cope?*

When the question of palliative care is raised, we may feel confused, overwhelmed and frightened. We may experience many reactions - for example: shock, disbelief, a sense of unreality, numbness, sadness, fear, anxiety, anger, guilt, emptiness, hopelessness, helplessness, and other intense feelings. It is important for us to know that these feelings and thoughts are all experienced by many other families and are not unexpected at such a difficult time. They are natural expressions of the feelings family experiences when

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they cannot protect their dear one from a life-threatening illness.

Many families experience great turmoil as a result of what are major changes. Sometimes families find that their experience of the good days can be affected by the knowledge of their dear one's illness. It can be hard to balance the needs of the patients, and family members. Some patients find it helpful to live one day at a time, to maintain some routine, and also be flexible when making plans.

*The Need for Family Centred Palliative Care*

Palliative care is especially suited to patients with incurable, progressive illnesses and often is centred on the needs of patients and their families at the end of life. Historically, palliative care has been provided most often to cancer patients with in ones family by his family members. Fitzsimons et al (2007) claim that chronic illness is the "modern epidemic" and the major cause of death and disability in the developed world today. Yet despite the establishment of hospices and home care, fifty-three-per cent of patients die in the family. This common scenario world over emphasises the need for quality Family Palliative care approach.

Compassionate care given through Family centred palliative care offers patients the most advanced quality of life care available today. Family-centric care helps to ease the pain, symptoms and stress of chronic or life-limiting illness or injury.Thus, the mission of Family Centred Care is to provide compassionate, quality comfort care that enhances the lives of people with life-limiting illness and their families.

Family Palliative Care provides empathetic care, a complete continuum of care - unlike any other hospice. Family centred approach has the following benefits:

• Family is committed to quality patient care, continuous caregiver's support and education.

• Family is able to provide hospice care in homes, through skilled nursing and assisted living facilities.

• Family can be empowered to offer innovative programs such as massage and pet therapy, expressive art and music and the quality of life program.

• There is possibility of collaboration of family members with the palliative care physicians/nurses/ other care givers with in the area of residence when necessary.

*Home based Palliative care*

Many families wish to care for their patients at home because they feel secure there and are better able to control their daily routine. It also increases the opportunity for the siblings, friends and family of the patients to assist with their care. Families may find the support of a palliative care service helpful when they are at home. Palliative care providers have a range of services on offer for families including nursing, counselling, bereavement support, and in some cases complementary therapies such as music therapy and massage.

*Role of the Family in Palliative care*

Palliative care should be available wherever patients are – at home, in hospitals, in hospices, etc. In developing countries, most patients die at home, and the family plays an important role in palliative care. If the patient agrees, and if appropriate, the patient's family should be involved and empowered in joint decision-making, should be constantly kept informed of medical decisions, including changes in carers and treatment, and should be trained in best practices of palliative care. The patient's family and other carers can be taught to give home-based care.

*Role of Friends and significant others*

Most patients feel that the greatest help they receive is the care and support given to them by their friends and others important to them. One of the best things patients can do at this difficult time is their willingness to accept the help and support offered by those closest to them. Friends should be invited to support patients in any way they can, even if they don't know what to say or do. Patients may need their practical help such as in preparing meals, feeding them or taking care of their children.

*Role of Heath care Team*

The health care professionals who may be involved in patients' care include doctors, nurses, social workers, occupational and physiotherapists, educational officers and chaplains. To ensure that patients are not overwhelmed with offers of assistance

it is important that a member of the team take on the role of coordinator. Some families find it helpful to keep a note of all the people involved and their contact numbers, as well as questions they may wish to ask. Family meetings can also be organised for all the staff involved in patient care as well as key family members. These meetings can be an information session to prepare the family for things that might happen during the palliative phase of their patient's illness. Alternatively, families are encouraged to make times with individual staff members as needed.

*Meetings with Family members*

Family meetings are commonly recommended as a useful way for health care professionals to convey information, discuss goals of care and plan care strategies with patients and family carers. Research has demonstrated that family meetings are one potential method of interaction that may facilitate optimal care planning and support and seem to be commonly used in palliative care. Family meetings provide an ideal avenue to inform, deliberate, clarify and set goals for future care, based on discussions between health professionals and the patient and family.

*Guiding principles for conducting family meetings*

• Family meetings can be a useful way to assist patients and family members to clarify goals of care, consider site of care options, and to share information. Ideally they provide a safe environment where issues and questions can be raised and appropriate strategies agreed upon.

• Strategies to support family carers are a core component of palliative care; hence service providers have a responsibility to *offer* family meetings based on need.

• Service providers should view family meetings as mutually beneficial. They are not only potentially valuable for patients and family carers; they may also provide a resource effective way to explain what the service can and cannot offer.

• Family meetings should not be saved for 'crisis' situations. Instead, a preventative approach is advocated where issues are anticipated before they become major dilemmas. Hence a proactive rather than reactive approach to care is fostered.

• Ideally, family meetings are *offered* routinely on admission, and conducted at a pertinent time thereafter.

• Facilitators of family meetings require appropriate skills in group work, therapeutic communication and palliative care. Hence the multidisciplinary team should determine who conducts the family meeting and presumably this may change depending upon skills, knowledge of the family and resources.

• Suitable resources should be available to patients and family members who attend the meeting in order to complement the verbal information (e.g brochures about services available, carer guidebooks, treatment and drug information, etc).

*Caregiver Training to Family members*
Participation in **"**Caregiver Training" for Family members offers instruction for caregivers:

• To become familiar with physical care and safety of the caregiver and patient

• To review of medications

• To train themselves on medical equipment, including care of patient's bed, oxygen tank, nebulizer, wheelchair, stairs, feeding pumps etc.,

• To develop basic patient skills such as positioning, bathing and feeding.

• To be able to interact on caregiver concerns with doctors, nursing staff, physical therapist and social worker and other experts

• To attain greater personal confidence and skill level in caring for a loved one.

*A 2000 report for the U.S. Department of Health and Human Services finds that residents enrolled in Family Palliative care are*

• Less likely to be hospitalized in the final 30 days of life;

• More likely to be assessed for pain;

• Twice as likely to receive daily treatment for pain;

• More likely to receive pain management in accordance with clinical guidelines;

• Less likely to have physical restraints, receive parenteral/intravenous feeding, receive medications by means of injection or have feeding tubes in place.

• Benefit more from complementary services, like expressive music; provide meaningful interaction and stimulation than those in long-term care settings.
• Support for family carers is a core function of palliative care.

## Conclusion

A dedicated team of family members provide comprehensive care that enhances the patient's quality of life by providing skilled nursing care, symptom management, education, support and help with personal care, such as bathing, feeding and dressing. Home based palliative care gives patients and caregivers the opportunity to choose what is best, without disrupting continuity of care.

The Palliative Home Care Program helps patients carry on with daily life in spite of their illness and improves their ability to tolerate medical treatments. Overall, Family palliative care approach helps patients make the most of life and offers patients the best possible quality of life during their illness.

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# An approach to evaluation and management of Syncope

**Pramilaa R.**

**Abstract**

Syncope is a symptom which is often taken for granted and less attention is given resulting in great delay seeking medical assistance. The intensity of this symptom and treatment depends on the type of syncope and its origin. The classification of syncope goes with the causes of syncope and they are i) neutrally mediated syncope, ii) orthostatic syncope, iii) cardiac syncope, and iv) cerebrovascular syncope. This article focuses on the approach to its evaluation as well. Management of syncope is in accord to its classification is encompassed. Besides, pharmacological management, non- pharmacological measures which could be emphasized by the nursing community is elaborated.

**Key words:** Syncope, neutrally mediated syncope, orthostatic syncope, cardiac syncope, cerebrovascular syncope.

## Introduction

Syncope is often considered with several more vague symptoms that are manifestations of many clinical conditions [1]. Syncope is a transient loss of consciousness precipitated by cerebral hypoperfusion, which is associated with the absence of postural tone and usually followed by a complete recovery within a few minutes [2,3]. A potentially lethal cause should be suspected in elderly. While less common, even younger individual with syncope can be at risk of death. Establishing the diagnosis of syncope is important so that specific treatment can be instituted to prevent future recurrences and eliminate the underlying predisposing disease [4].

Syncope is a common medical problem and accounts for approximately 3% of emergency room visits and 1-6% of hospital admissions. The prevalence of syncope increases with age of 75. In long term care institutions, the annual incidence is approximately 6% [5]. True syncope is an abrupt but transient loss of consciousness associated with absence of postural tone followed by rapid, usually complete, recovery without the need for intervention to stop the episode. A prodrome may be present. While alarming, this symptom is non-specific. It is generally triggered by a process that results in abrupt, transient 5–20 seconds interruption of cerebral blood flow, specifically to the reticular activating system [1].

Patients' reactions to syncope can vary from complete lack of recognition and concern, to fear and difficulty returning to previous level of activities with complete disability. Even if syncope is benign, it can have a major impact on quality of life and may change lifestyle dramatically, independent of physicians' concerns and recommendations. The degree of functional impairment from syncope can match that of other chronic diseases, including rheumatoid arthritis, chronic back pain, or chronic obstructive lung disease [1].

## Classification and Etiology of Syncope [6]

1. Neurally mediated (reflex) syncope

- Vasovagal syncope
- Carotid sinus syncope
- Situational syncope

2. Orthostatic syncope

- Autonomic failure
- Drug-induced orthostatic hypotension

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• Volume depletion

3. Cardiac arrhythmia–related syncope

• Sinus node dysfunction (bradycardia/tachycardia syndrome)

• Atrioventricular conduction system disease

• Paroxysmal supraventricular and ventricular tachycardias

• Wolff -Parkinson-White´´´ syndrome

• Inherited syndromes (Long QT syndrome, Brugada syndrome)

• Drug-induced proarrhythmias

4. Structural heart disease–related syncope

• Obstructive cardiac valvular disease

• Cardiomyopathy

• Atrial myxoma

• Coronary artery disease

5. Cerebrovascular syncope

• Vascular steal syndromes

• Vertebrobasilar artery disease

• Carotid artery disease

Evaluation of syncope [1]

The initial evaluation of a patient presenting a transient loss of consciousness consists of careful history, physical examination including orthostatic blood pressure measurements and standard ECG. Initial evaluation recommended in the guidelines on syncope of the European Society Cardiology is to all: history, physical examination and standard 12 lead ECG.In selected cases (when appropriate): Echocardiography, in hospital telemetric monitoring and neurological evaluation or blood tests.

**Diagnostic tests to determine causes of syncope**[7]

The head up tilt test records blood pressure and heart rate on a minute-by-minute or beat-to-beat while the table is tilted in a head-up position at different levels. This test may reveal abnormal cardiovascular reflexes that produce syncope in some patients.

**Important historical features for temporary loss of consciousness are given in the table below**

| Questions about | Parameters |
|---|---|
| Circumstances just prior to attack | Which position did the patient assume: supine, sitting or standing?<br>Whether patient's activity was related to rest, change in posture, during or after exercise, during or immediately after urination, defecation, cough or swallowing?<br>Predisposing factors: crowded or warm places, prolonged standing, post prandial period and of precipitating events such as fear, intense pain or neck movements |
| Onset of attack | Nausea, vomiting, abdominal discomfort, feeling of cold, sweating, aura, pain, in neck or shoulders, blurred vision , dizziness. |
| Attack | Way of falling, skin colour: pallor, cyanosis or flushing, duration of loss of consciousness, breathing pattern, movements: tonic, clonic or minimal myoclonus and their duration, onset of movement in relation to fall, tongue biting |
| End of attack | Nausea, vomiting, sweating, feeling of cold, confusion, muscle aches, skin colour, injury, chest pain, palpitations, urinary or fecal incontinence |
| Background | Family history of sudden death, congenital arrhythmogenic heart disease or fainting<br>Previous cardiac disease<br>Neurological history such as Parkinsonism, epilepsy,<br>Metabolic disorders<br>Medication such as antianginal, antihypertensive, antidepressant, diuretics<br>In case of recurrent syncope- information on recurrence such as the time from the first syncopal episode and on the number of spells. |

*Blood volume determination*

An intravenous line is inserted into a vein and a small amount of radioactive substance is injected. The blood volume test is used to evaluate if the amount of blood is appropriate for gender, height and weight.

*Hemodynamic testing*

Three sets of images are taken after a radioactive material has been administered through intravenously. The purpose of hemodynamic testing is to evaluate the intravascular pressure and blood flow that occur when the heart muscle contracts and pumps blood throughout the body.

*Autonomic reflex testing*

A series of different tests are done to monitor blood pressure, blood flow, heart rate, skin temperature and sweating in response to certain stimuli. Taking these

measurements can help determine if autonomic nervous system is functioning normally or if nerve damage has occurred.

## Management of syncope

*Vasovagal syncope*

This can be usually prevented by removing or avoiding precipitants, by lying down or by placing the head between the knees during presyncopal period. Fludrocortisone a sodium retaining steroid reduces the vasodepressor response and relieves the symptoms of vasodepressor carotid sinus syndrome [8].

*Neurogenic syncope*

Treatment of underlying seizure disorder should control further seizures. Standard anticonvulsants may be used to control seizures [9].

Cardiac syncope

Drug therapy for bradyarrthymias and tachyarrthymias and surgery may be indicated for structural or ischemic conditions. The second form of treatment is ablation which is infrequently an option for ventricular tachycardia. The third and most effective treatment for both ventricular tachycardia and ventricular fibrillation is insertion of an implantable defibrillator. A demand pacemaker is indicated when heart block or severe bradycardia has been proven responsible for the syncope [10, 11].

*Vascular syncope*

Subclavian vascular studies are indicated if subclavian steal is suspected. If test results reveal a stenotic lesion of 75% or greater in the carotid system, surgery should be contemplated. If the posterior circulation is involved aspirin or anticoagulants may be necessary. Surgery is indicated for symptomatic proximal subclavian artery occlusion [12].

Metabolic syncope

Hypoglycemia should be treated immediately with 50% dextrose in water intravenously; the underline caused must then be determined and treated reasons for underlying hypoxia and hyperventilation should be investigated as appropriated and treatment should be instituted [13].

*Non pharmacological interventions*

The cornerstone of the non-pharmacological management of patients with reflex syncope is education and reassurance regarding the benign nature of the condition. Patients should be instructed to avoid potential triggers. An informative and instructive talk with the patient about the benign nature and prognosis is the first step in the treatment of patients with vasovagal syncope. Conditions triggering vasovagal reflexes should be avoided such as a hot environment, humid atmosphere, prolonged standing, and reduced water intake. A reduction or cessation of vasoactive substances may be necessary .Aggressively counsel the patient to stop smoking and refer to the physician for medications to support nicotine withdrawal and a smoking withdrawal program. There is a 45% smaller hyperemic vascular response in smokers than non smokers [14]. Discontinuation of hypotensive drug treatment for concomitant conditions is an important first line measure for the prevention of syncope recurrences in many subjects, especially in older patients. Substitution of salt and intake of isotonic drinks expands the circulating blood volume and may improve venous return [15].

Patients should be motivated to identify prodromals of syncope. Lying or sitting down when initial symptoms appear may avert or attenuate syncope or traumatic falls. Furthermore counterpressure maneuvers such as hand-grip and leg crossing may inhibit vasovagal syncope by increasing the venous return . Leg crossing combined with tensing of muscles at the onset of prodromal symptoms can delay or even prevent vasovagal syncope [16]. A more complex and time-consuming concept is that of tilt training: orthostatic training was found to significantly improve symptoms in adolescents with neurocardiogenic syncope. Twice-a-day training sessions of 40 min tilt positioning at home by standing against a wall significantly reduced the incidence of recurrence [17].

## Conclusion

The manifestations of syncope are common and present a challenging diagnostic exercise since the causes range from the trivial to the serious. Nurse

practitioners require a good understanding of the complex mechanisms of syncope and should follow an organized approach in evaluating this common clinical condition. It is essential that precision in diagnosis aids in rendering timely management and prevent further complications.

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