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Pramilaa R.

An average adult has about five to six liters of blood (70 ml/kg). Paramount is the continuous flow of oxygenated blood. This flow is central to metabolism, the production of energy and other materials necessary for life. One molecule of glucose is oxidized in the cells' mitochondria to produce 36 adenosine triphosphate (ATP) molecules. The Aerobic metabolism are by products of more water and carbon dioxide. About 2/5th of the body fluids come from aerobic metabolism from what is oxidized rather than what is taken in. And carbon dioxide is readily breathed off at about 20 times the rate that oxygen diffuses into the blood stream. When energy demand surpasses the supply of vital energy precursors such as oxygen, cells are left with the efficient anaerobic energy production. Anaerobic metabolism yields only two ATP. Also, the production of lactic acid can alter the acid

base balance and hamper several vital intercellular chemical reactions [1,2].

Cardiac output is one of the most important parameters for cardiac function monitoring, providing an estimate of whole body perfusion oxygen delivery and allowing for an understanding of the causes of high blood pressure. Derangements in the circulation are a common feature in sepsis, trauma, major surgery and other critical illnesses. Detailed evaluation of the circulation is essential for such patients. The use of cardiac output monitoring technology is an increasingly important aspect of evaluating patients in operation theaters and intensive care units. The bedside nurse should be knowledgeable about the components that influence cardiac output, because these factors determine not only the initial therapy, but also evaluation of therapy [3].

Parameters that affect cardiac output [1,2]

<i>Parameters that increase cardiac output</i>	<i>Parameters that reduce cardiac output</i>
Heart rate between 50 – 150 beats/ minute Atrial click Adequate filling time Frank Starling law- more myocardial stretch Increased preload Low after load	Heart rate less than 50 or more than 150 beats/ minute Lack of atrial click Inadequate filling time Frank Starling law- less myocardial stretch Decreased preload High after load

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Technologies of Neasuring Cardiac Output

Accurate clinical assessment of the circulatory status is particularLY desirable in critically ill patients in the Intensive Care Unit and patients undergoing cardiac, thoracic or vascular interventions. Since the patient's hemodynamic status may change rapidly, continuous monitoring of cardiac output can provide information,

thereby allowing rapid adjustment of therapy. The methods of measuring cardiac output are given below:

Fick method

This method is based on the principle described by Adolfo Fick in 1870. According to this principle, the total uptake or release of a substance by an organ is the product of the blood flow through the organ and the arteriovenous concentration difference of the substance. Cardiac output can be calculated via oxygen consumption by lungs divided by the difference of arteriovenous oxygen.

Thermodilution method

This method uses a special thermistor-tipped catheter inserted from a central vein into the pulmonary artery. Cold solution of 5% dextrose or normal saline is injected into the right atrium from a proximal catheter port. This solution causes a decrease in blood temperature, which is measured by a thermistor placed in the pulmonary catheter. The decrease in temperature is inversely proportional to the dilution of the injectate. Cardiac output can be derived by the modified Stewart-Hamilton conservation of heat equation.

Oesophageal Doppler

A Doppler probe is inserted into the distal oesophagus and is directed to measure the blood flow in the descending aorta at about 35-40 cm from the incisors. The monitor calculates cardiac output using descending aorta diameter, which is either obtained from an age-related nomogram or measured directly. The system is small and relatively portable but requires an electrical power source. Cardiac output data is best used as a trend to guide the effectiveness of interventions such as fluid challenges.

Transoesophageal echocardiography

A specialized oesophageal probe is inserted into the oesophagus, providing real-time, high-resolution ultrasound images. Both qualitative and quantitative values for cardiac output are available using a two-dimensional cross-sectional area measurement, a Doppler flow measurement at that point, and the heart rate. A large amount of hemodynamic information is available beyond, cardiac output.

Lithium dilution monitoring

This technique combines the techniques of lithium dilution and pulse contour analysis. A small dose of lithium is injected into a peripheral vein and an ion selective electrode is attached to a peripheral arterial line. The area under the curve in a plot of lithium concentration against time allows accurate calculation of cardiac output. A figure of stroke volume variation is produced which is an indicator of volume responsiveness to fluid therapy.

Thermodilution pulse contour monitoring

This technique uses arterial pulse contour analysis to measure cardiac output. The system is calibrated using intermittent cold transpulmonary thermodilution, where cold fluid is injected through a central venous catheter and traverses the pulmonary circulation. The curve of blood thermodilution is measured in a systemic artery in addition to cardiac output. The arterial line can be simultaneously used for blood pressure monitoring and for blood sampling. The system is relatively easy to set up and calibrate.

Pulse contour cardiac output

This technique calls for the insertion of an arterial line and hence is considered a minimally invasive procedure. A long arterial catheter is placed in the femoral, axillary, or brachial artery and is connected to a pulse contour device. With

this catheter, a continuous pulse waveform contour analysis is obtained.

Partial carbon dioxide rebreathing

Cardiac output can be estimated using Fick principle with carbon dioxide as the marker gas. A new monitor called NICO is based on the application of the Fick principle to carbon dioxide in order to estimate cardiac output non invasively. The monitor consists of a carbon dioxide sensor, a disposable airflow sensor and a pulse oximeter.

Thoracic electrical bioimpedance

This technique employs four electrodes. Two pairs are applied to the neck base on opposite sides and two pairs are placed at the level of the xiphoid junction. Each pair of electrodes comprises transmitting and sensing electrodes. With these electrodes low level of electricity conducted by the body fluid is transmitted. Additional two set of electrodes is used to monitor a single ECG signal. Changes in impedance correlate with stroke volume. Cardiac output is calculated by multiplying the heart rate and stroke volume [4,5].

Indications for Cardiac Output Monitoring

- Assessment of cardiovascular function
- Perioperative monitoring of surgical patients with major system dysfunction
- Shock of all types
- Assessment of pulmonary status
- Assessment of fluid status
- Therapeutic indications such as aspiration of air emboli, cardiac pacing etc.
- Diagnostic indications such as aspiration of arterial blood, pulmonary hypertension etc [6].

Nursing Strategies

Insertion sites

Pulmonary artery catheter or Swan-Ganz Catheter (SGC) is inserted into a major vein such as the right internal jugular vein, the right and left subclavian veins, and the femoral veins.

Preprocedure care

- Explain the procedure to the patient
- Assemble all equipments such as SGC, introducer kit, supplies to create a sterile field, gown, mask, and gloves, betadine, pressure bag, 500 ml normal saline or heparin premix, two disposable pressure monitoring kits with transducer, continuous cardiac output monitor with cables and medication line.
- Observe principles of asepsis in setting up all monitoring lines
- Check SGC package for the expiry date. Connect SGC cable to monitor and attach to transducer and ensure zero transducer
- Place monitor in wedge / insertion mode turn on, and set continuous cardiac monitor

Care during procedure

- Position patient for insertion. Flat position for femoral site and Trendelenburg position for subclavian or jugular site
- Assist with creating a sterile field
- Connect IV line to medication port
- Connect cardiac output cable
- Remove 1.5ml syringe and connect it to the syringe port
- Zero catheter while still in package
- Inflate air into balloon to insure balloon integrity prior to insertion
- After insertion of the tube by the physician waveform should be monitored
- Once the physician inserts the catheter, the registered nurse inflates the balloon

Post procedure care

- Make sure the SGC cap is in lock position so that the catheter will not migrate
- Secure catheter to patient with tape
- Apply occlusive dressing
- Set high and low alarms on monitors as appropriate for patient
- Ensure that the physician has disposed of all sharp equipments
- Check if chest X-ray was ordered

Documentation

- Immediately after insertion of SGC, parameters such as vital signs, pulmonary artery pressures, and cardiac output should be documented
- SGC insertion site and the length of advancement of catheter in centimeters should be specified
- Amount of air required to inflate balloon to obtain values should be mentioned
- Verification of placement of SGC by X-ray should be added
- Patient's tolerance to the procedure and medications given during the procedure should be documented as well [7-10].⁰

CONCLUSION

Cardiac output monitoring provides an excellent area for nursing research. Observing the changes in cardiac output while moving a patient in order to prevent bedsores and measuring cardiac output at various phases of hospitalization constitutes an area to be dealt with

ideally by nurses. Moreover, nurses should study cardiac output during the first few hours of post-operative follow up for patients in Intensive Care Units. Cardiac output monitoring by nurses in the first post-operative twenty four hours in patients having undergone bypass surgery is an interesting premise for nursing research.

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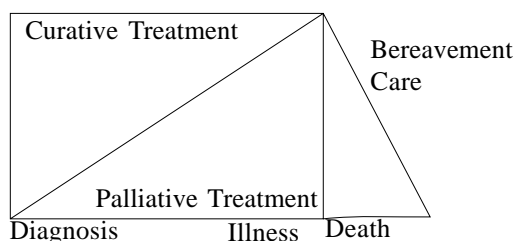
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Vijaya Udumala JMJ

Palliative care aims to improve the quality of life of patients and their families facing problems associated with life-threatening illness. Palliative care is not only end-of-life care, but also includes management of all distressing symptoms, including pain. The patient's future needs should be considered at the time he or she is diagnosed with advanced cancer, so that problems can be anticipated and prevented or managed.

Fig. Continuum of Cancer Care



Palliative care can be provided by people in the family, community, health centers, and hospitals.

Palliative care is an essential element of cancer management

- The goal of palliative care is to avoid unnecessary suffering and improve the quality of life of patient with advanced cancer as well as their families, by way of emotional support, symptom control, end-of-life care and bereavement care. It addresses the physical, psychosocial, and spiritual needs of patients and their families.
- Palliative care should begin as soon as cancer is diagnosed, so that needs can be anticipated,

and preventive and treatment measures planned and put into effect.

- Palliative care can help people with advanced disease to have dignity and peace during their difficult and final phases of life.
- Freedom from pain can be considered as a human right, yet pain control remains vastly underutilized. The mechanisms for its implementation need to be strengthened.
- Using a broad combination of medical and non-medical methods, pain can be effectively controlled in 90% of the cases.
- Patients and their caregivers need training, ongoing support, and supplies for palliative care, including symptom management at home.

Why is palliative care necessary?

Even with the best preventive and screening programmes, some people are diagnosed with advanced disease or may develop such disease, and need clinical and emotional support and pain control. In many low-resource countries, people are not aware of screening programmes and many are diagnosed as having cervical cancer only when they develop symptoms, usually in late stages of the disease. In addition, facilities for the treatment of cancer may not exist or may not be accessible to many; as a result, some patients with relatively early cancers may not receive the most effective treatment. In these settings, palliative care is particularly important, as many of these patients will need relief from pain and other distressing symptoms. Adequate resources have to be made available to care for those who cannot be cured, particularly in rural areas having

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few health services, where many patients die at home in difficult conditions.

Patients with other chronic severe diseases, such as AIDS, also need special care, and efforts should be made to create a team of health providers at all levels of the health care system with knowledge and skills in palliative care. If appropriate, patients' families should be enrolled into palliative care teams.

Principles of palliative care

Palliative care

- Provides relief from pain and other distressing symptoms; affirms life and regards dying as a normal process; is intended neither to hasten nor to postpone death
- Integrates the clinical, psychological, and spiritual aspects of care; gives the patient and the family as much control and decision-making power as they desire and are able to accept
- Offers a support system to help patients live as actively as possible until death; offers a support system to help the family cope during the patient's illness and with their own bereavement
- Uses a team approach; enhances quality of life and may also positively influence the course of illness
- Is applicable early in the course of illness in conjunction with other therapies that are intended to prolong life, such as surgery and radiotherapy.

Essential components of palliative care

Prevention and management of symptoms

This may include palliative radiation to reduce the size of the tumour as well as treatment for signs and symptoms, nutritional problems, bedsores, fever, and contractures.

Families should be taught how to prevent problems, where possible, as well as how to

support the patient with daily activities, such as bathing, going to the toilet, and moving around.

Pain relief

Effective pain control can be achieved in 90% of cases, using the medical management, together with ancillary non-medical methods.

Psychosocial and spiritual support

This is an important component of palliative care and requires trained providers with good communication skills.

Involving the family

The health worker can ensure that the patient and the family understand the nature and prognosis of the disease as well as the recommended treatment.

The palliative care worker must also be able to help the patient take decisions about the care. The patient and the family should have a sense of being in control with full support from the health care team whose task is to provide appropriate information, advice, and to support informed decisions.

Palliative care requires systematic and continuous application of the five steps (*five 'A's*), described below. Like other aspects of cancer care, this approach requires teamwork and adequate resources.

1) Assess: Assess the patient's status and identify the treatment assess the patient's and carers' knowledge, concerns, and skills related to the illness and the treatment.

2) Advise: Explain how to prevent and manage symptoms, and teach the requisite skills, few at a time, by demonstration and observed practice.

3) Agree: After giving information and imparting teaching skills, make sure that the

The five 'A's of palliative care: Assess, Advise, Agree, Assist, and Arrange

Demographic data	Frequency	Percentage
1. Age		
1.1 31-40	04	06.67
1.2 41-50	12	20.00
1.3 51-60	36	60.00
1.4 61 and above	08	13.33
2. Education		
2.1 Illiterate	30	50.00
2.2 Primacy school	14	23.33
2.3 High School	12	20.00
2.4 Intermediate /SSC	04	06.67
2.5 Degree and above	-	-
3. Occupation		
3.1 Employed	24	40
3.2 Unemployed	-	-
3.3 House wife	36	60
4. Family monthly income		
4.1 Rs 2001 - 3000	28	46.67
4.2 Rs 3001 - 4000	14	23.33
4.3 Rs 4001 - 5000	10	16.67
4.4 Rs 5001 and above	08	13.33
5. Socio-economic status		
5.1 Low	52	86.67
5.2 Middle	08	13.33
5.3 High	-	-
6. Area of Residence		
6.1 Urban	45	75
6.2 Rural	15	25

patient knows what to do and agrees to do it. Empower the patient to stay in charge. Support patient self-management and family care.

4) Assist: Make sure the patient and the family has enough supplies to cope with difficult situations give the required care. Give written instructions as a reminder of what has to be done, with pictures, if needed, for those who cannot read.

5) Arrange: Schedule a time for the next visit. Make sure the patient, the family, and other carers know where to go if they have questions or concerns.

Make sure the family knows when and whom to call for help

The 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 in such setting 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. Clinical care should be provided by health workers trained to use recommended medicines within the national legal framework. Providers of palliative or home-based care should have constant backup from first-level health workers (physician, clinical officer, or nurse) who should be available for consultation or referral when needed.

Accessing local resources for care at home

When a patient is no longer able to work or care for his / her family, meager resources may become further stretched. Money for food, supplies, and medicines is sometimes available through local, regional, or national non-governmental organizations, faith-based organizations, women's groups, and community-based organizations. A palliative care or home-

based care (HBC) programme should have links with these organizations, where possible, and provide referrals for patients and their families.

Managing common symptoms of advanced cancer

Patients with advanced cancer can suffer a constellation of physical, psychological, and emotional problems. Pain is almost always a part of the constellation and its relief should always be a part of palliative care.

Pain management

Pain relief for cancer patients

- Is vastly underutilized and, as a result, many patients suffer needlessly
- Is achievable and inexpensive
- Needs cooperation and a two-way communication between homecarers and clinical providers at all levels of the health care system
- Home-carers are closest to the patient's needs, while clinical providers offer support and medications

Major barriers to effective pain relief

- Lack of awareness on the part of health care providers and the general public that pain relief is achievable and inexpensive
- Lack of availability of pain medications due to restrictive regulatory policies.
- Even when controlled pain medications (opiates and oral morphine) are available, in principle, providers, including physicians, may be restricted by national drug control policies from prescribing or dispensing them
- Providers' unrealistic fears of promoting drug dependence in patients, and of contravening drug enforcement laws

National rules and regulations must be followed. They should be carefully checked to see whether they allow pain relief to be

administered by non-medical personnel under the supervision of doctors or nurses. If not, medical and non-medical personnel need to join forces to advocate patients' right to freedom from pain.

In the context of palliative care in national cancer control programmes, restrictive drug regulations need to be modified to allow access to pain control. Although changing policy and law is not the role of the care team, providers should advocate and demand policy change to remove barriers to access and to allow pain relief measures including opioids.

Recommendation

Cancer control programmes should ensure that opioid, non-opioid, and adjuvant analgesics, particularly morphine for oral administration, are available.

WHO's analgesic ladder

WHO has developed an effective and relatively inexpensive method for relieving cancer pain in about 90% of patients. This method is called the *WHO ladder for cancer pain relief*. It can be summarized as follows:

- **By mouth:** Whenever possible, analgesics should be given orally in order to permit wide applicability of this method
- **By the clock:** Analgesics should be given at fixed time intervals. The next dose should be given before the effect of the previous one has fully worn off, to ensure continuous pain relief
- **By the ladder:** The first step is to give a non-opioid, typically paracetamol. If this does not relieve the pain, opioids for mild-to-moderate pain, such as codeine, should be given
- **The next step** is to give opioids for severe pain, such as morphine. Additional drugs, called

adjuvants, can be used in certain circumstances; for example, psychotropic drugs may be given to calm fear and anxiety

For the individual, There is no standard dose for opioid drugs. The right dose is the dose that relieves the patient's pain.

Two rules for opiate dosage

There is no standard dose for opioid drugs; the right dose is the dose that relieves pain.

There is no ceiling dose for opioid drugs; the dose will gradually need to be increased as the patient become tolerant to the pain-relieving effects.

Non-medical methods to assist in pain control

A number of methods appropriate to local customs and culture, can be very important in helping the patient cope with pain. These methods may be used in addition to effective modern medicines, and must never lose their place and importance.

Non-medical methods

- Emotional support: the care and support of family and friends is most important in relieving discomfort during severe illness;
- Touch: stroking, massaging, rocking, and vibration
- Distractions: radio, music, helping the patient to imagine a calm scene or a happy event in their life
- Prayer and meditation according to the patient's practice
- Traditional practices, if not harmful, can be very beneficial
- The Attitude of the health care provider is also important: Listen with empathy.
- Try to understand their reactions to her illness (the different stages of grief)

- Refer to a spiritual counsellor or pastoral caregiver, according to the patient's religion and wishes.
- Avoid imposing your own views.
- Empower the family to continue to provide care.

Non-medical pain management interventions such as emotional support, physical methods (touching and massaging), distraction, prayer, meditation and other non-harmful local traditional methods should be provided only with the explicit understanding and approval of the patient and the family.

Organization of palliative care services

In resource-poor settings, palliative care is most often provided by untrained community health workers.

To be effective, these workers require:

- Training in clinical and psychological palliative care. This can be given in 1–3 weeks for those with basic medical skills
- Supportive supervision from hospice nurses or others trained in the management of psychosocial and medical problems in severely ill patients
- Essential medicines and other supplies needed for effective palliative care, provided according to a national essential drug list. The primary health care facility can arrange for regular supplies for home-based care providers and their patients
- A secure place to store medicines and a separate tracking system for pain medications, if this is required by the drug regulatory authority
- Open communication with the formal health system and access to more skilled providers for consultation and referral of patients, when needed

Team approach to palliative care

Providers at all levels of care, from specialists to home-care providers, should work together

to ensure the best quality of life and outcome for patients with advanced cervical cancer. In tertiary care settings, the team might include an oncologist, a radiotherapist, a radiotherapy technician, a psychologist or counsellor, a nutritionist, a physiotherapist, an oncology nurse, a pharmacist, a social worker, and a palliative care nurse. In resource-poor settings, it is unlikely that such a highly specialized team can function down to the level of the community where the patient lives. Strategies need to be devised for individual community providers responsible for the patient's continuing care, to allow them to link the patient and the family with the staff at the health centre and district and central hospitals.

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Vijaya Udumala JMJ

INTRODUCTION

According to the National Cancer Registry Programme (NCRP, 2009) of India, the number one cancer that continues to kill women in India is cancer of the cervix. This can be verified if one visits any one of our regional cancer centres in the country. This is a cancer that has been practically wiped out in the West, while India continues to contribute as much as 18% to the total global figure of 100,000 cases diagnosed each year.

The important primary preventive factors that have led to a reduction in the incidence of cancer of the cervix in the West have been access to clean water and, therefore, better personal hygiene, as well as late marriage and planned childbearing. The secondary preventive factors have been regular checkups after a woman becomes sexually active. Experts tell us that it takes almost ten years for abnormal changes in the cells of the cervix to reach a stage of full-blown cancer, and if interrupted in time then all it takes is simple and inexpensive interventions to stop these changes from progressing further and becoming malignant and life threatening.

It is to our eternal shame that in India, despite our much touted cancer control programme, majority of women with cervical cancer come at a stage when their cancers are no longer curable. Why is this so? The sad truth is that it is a cancer that, by and the large, affects the poor and

illiterate. It is women in living in rural areas and in urban slums who are at the greatest risk. Until their living conditions are improved and they are provided access to better health facilities, including regular checkups, they will continue to die of this cancer. Education and provision of minimal infrastructural facilities like clean water for a decent living in the rural and slum areas would go a long way in saving the lives of our disadvantaged women folk. (NCRP, 2010).

Need for the Study

In India, cervical cancer accounts for an estimated 24% of India's cancer cases among women, and, additionally, 74,000 Indian women die annually from this disease. Cervical cancer is the most common disorder among middle-aged women, accounting for increased mortality rate in Indian women due to lack of awareness on prevention and lack of opportunity for early diagnosis and treatment. The National Cancer Control Program emphasizes the importance of early detection and treatment, but the country has no organized screening program, and many Indian women lack information about the disease and access to prevention and treatment facilities. Therefore, to control the disease, a clear understanding of factors contributing to development of cervical cancer is necessary. In this situation, the level of awareness of the population regarding the risk factors, symptoms of the disease, and the importance of early treatment are important for control and even prevention of the disease. Hence, the present study on the prevalence of risk factors of cancer of the cervix among married women of Guntur district was conducted.

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Statement of the Problem

An exploratory study to assess the prevalence of risk factors and knowledge of cervical cancer among married women of Guntur District in Andhra Pradesh

Objectives of the Study

1. To assess the presence of risk factors of cervical cancer among married women.
2. To assess the knowledge of women regarding early diagnosis, treatment and prevention of cervical cancer.
3. To find the association between women's knowledge on cervical cancer and selected risk factors.
4. To prepare a booklet and distribute to those who have deficient knowledge regarding cervical cancer.

Hypothesis

The study aimed to test the hypothesis: Here is a significant association between knowledge of women on cervical cancer and selected risk factors at 0.05 level of significance.

Conceptual Framework

The conceptual frame work used for this study was Modified Health Belief Model developed by Rosenstock and Becker.

Research Methodology

An exploratory survey design was been used in the study. The population comprised of married women between the age group of 30-60 years in Guntur district of Andhra Pradesh. A sample of 60 women from Sangadigunta urban slum area in Guntur city was selected using purposive sampling technique. The data was collected from 1st May, 2010 to 30th June 2010.

Development and Description of the Tool

The tools used in this study were demographic profile (6 items), risk factors for cervical cancer

(10 items) with 'Yes' and 'No' alternative responses.

The knowledge questionnaire consisted of 20 items with two alternative responses, i.e. 'True' and 'False'. The total score of knowledge questionnaire was 20 and a score below 10 was considered 'unfavorable knowledge', a score from 11 to 15 was considered as moderately favorable knowledge, while a score above 16 was considered as 'favorable knowledge'.

Validity and Reliability of the Tool

Content validity of the tool was established by experts from nursing and medical field. Reliability was calculated by split half method and the 'r' value was 0.9. The findings of the pilot study revealed the feasibility of the study.

Data Collection Procedure

Informed consent of the sample was obtained and confidentiality of responses was assured. The researcher interviewed the sample and the average time taken for each client was about 15-20 minutes. After interview, a pamphlet "Understanding Cancer Cervix" consisting of the etiological factors, clinical manifestations, early diagnosis, treatment, and prevention was explained and distributed to a small group of three to five subjects. The average time for explaining the pamphlet was about 20 minutes and 10 minutes for further interaction.

Research Findings

The data was analysed according to the objectives of the study using descriptive and inferential statistics.

Section I: Description of data on percentage distribution of the sample by their demographic variables.

Section II: Description of data on percentage distribution of the risk factors for cervical cancer

Section III: Description of data on knowledge of the sample on cervical cancer.

Section IV: Description of data on association between knowledge and selected cervical cancer risk factors.

Section I: The demographic data of the samples is described in terms of their age, education, occupation, monthly income and socio-economic status in Table 1.

The demographic profile reflects the general background of the sample. Demographic variables also indicate the physical environment of the sample which may have an influence on risk factors and on the knowledge of the sample

about cervical cancer. Hence, an attempt was made to study these variables.

Table 1 shows the data on the percentage distribution of women by their age, education, occupation, family monthly income, socio-economic status, and area of residence.

Majority of the sample, i.e. 60% was in the age group between 51-60 years, and only 6.67% were in the age group between 31-40 years.

With regard to the level of literacy, 50% were illiterate while only 6.67% studied upto Intermediate. This reveals that low literacy rate is associated with high incidence of cervical cancer.

The data on occupation revealed that 60% were housewives and 40% employed as daily

Table 1. Frequency and percentage distribution of the sample by Age, Education, Occupation, Monthly income, Socio-economic status and Area of residence

N=60		
Demographic data	Frequency	Percentage
1. Age		
1.1 31-40	04	06.67
1.2 41-50	12	20.00
1.3 51-60	36	60.00
1.4 61 and above	08	13.33
2. Education		
2.1 Illiterate	30	50.00
2.2 Primacy school	14	23.33
2.3 High School	12	20.00
2.4 Intermediate /SSC	04	06.67
2.5 Degree and above	-	-
3. Occupation		
3.1 Employed	24	40
3.2 Unemployed	-	-
3.3 House wife	36	60
4. Family monthly income		
4.1 Rs 2001 - 3000	28	46.67
4.2 Rs 3001 - 4000	14	23.33
4.3 Rs 4001 - 5000	10	16.67
4.4 Rs 5001 and above	08	13.33
5. Socio-economic status		
5.1 Low	52	86.67
5.2 Middle	08	13.33
5.3 High	-	-
6. Area of Residence		
6.1 Urban	45	75
6.2 Rural	15	25

labourers. There were none unemployed in the sample.

Regarding the sample's family monthly income, majority of the sample (46.67%) had a family income between Rs. 2001-3000 and a small percent of 13.33% had an income above 5001 per month. This corresponds to the samples' low socio-economic status (86.67%).

Regarding the sample's area of residence, majority, i.e. 75% were living in urban slum area, while only 25% of the control group of the 35.6% were living in rural area.

Section II: Data on percentage distribution of the risk factors for cervical cancer.

Many studies reveal a high prevalence of important risk factors associated with cervical cancer i.e. age at menarche, age of marriage, age of first childbirth, parity, genital hygiene and reproductive tract infections. Therefore the following risk factors were considered important in this study.

Table 2 indicates the data on risk factors of cervical cancer. The major risk factors found were early marriage (83.33 %), early childbirth, and long duration of married life. Majority of the sample i.e. 75%, reported history of genital infections, 73.33% reported poor genital hygiene 20% per cent had multiparity, while 25% had multiple sexual partners. Hariharan et al (2011) observed similar risk factors being responsible for cervical cancer among women.

Section III: Description of Data on Knowledge of women about cervical cancer

The women's knowledge scores on cervical cancer is described in this section in terms of frequency and percentage distribution, mean, median and standard deviation.

Knowledge refers to the correct response to knowledge items on cervical cancer as measured by the knowledge questionnaire. Knowledge is expressed by the respondents in scores, which are described as levels. The levels are classified as inadequate knowledge for score < 50%, moderately adequate knowledge for score between 51-75%, and adequate knowledge for score of > 76%.

Table 3 denotes the level of knowledge of the sample. Majority of the sample i.e. 83.33% had inadequate knowledge, a small number had moderate knowledge (16.67%) on cervical cancer, while none had adequate knowledge on cervical cancer.

Jajamohanraj and Vanjeenathammal (2008) assessed the knowledge of women on early detection and prevention of cervical cancer, and found that 68% of the women had inadequate knowledge.

Table 4 shows a mean score of 8.2, a median score of 9 and the most commonly occurring score of 9. The mean, median and mode scores suggest the inadequate knowledge of the sample on cervical cancer. Standard deviation 2.65 suggests that there is very little difference among

Table 2. Frequency and percentage distribution of risk factors for cervical cancer among the sample

N=60

S. No	Risk Factors	Frequency	Percentage
1.	Early Menarche	12	20.00
2.	Early Marriage	50	83.33
3.	Early Child birth	50	83.33
4.	Long duration of marital life	50	83.33
5.	Multi parity	12	20.00
6.	Multiple sexual partners	15	25.00
7.	History of genital infections	45	75.00
8.	History of abortions	08	13.33
9.	Poor genital hygiene	44	73.33
10.	History of Tobacco / pawn / smoking	14	23.33

Table 3. Frequency and percentage distribution of level of knowledge of the sample on cervical cancer

N=60

S. No	Level of Knowledge	Scores	
		Frequency	Percentage
1	Inadequate (< 50%)	50	83.33
2	Moderately adequate (51 – 75%)	10	16.67
3	Adequate (> 76%)	-	-

the knowledge scores of the women regarding cervical cancer.

Section IV: Description of data on association between knowledge and selected risk factors of cervical cancer

The Chi-square value between selected risk factor - early menarche (15.4), early marriage (20.96), early childbirth (11.04), long married life (29.1), multiple sexual partners (11.4) - and knowledge scores of the sample was found to be statistically significant at 0.05 level. Hence, the null hypothesis (Ho) was rejected and research hypothesis was accepted.

The Chi-square value between the history of genital infection (12.4), multiparity (29.1), poor genital hygiene (12.4), history of tobacco / pan (10.34) and knowledge of the sample was found to be statistically significant at 0.05 level. Hence, the null hypothesis (Ho) was rejected and research hypothesis was accepted.

DISCUSSION

Several studies reveal that there is a definite association of some risk factors like early marriage, high parity, unsatisfactory genital hygiene, reproductive tract infections etc. with

cervical cancer. The risk factors of early marriage, early childbirth, and long duration of married life (83.33%) were predominant in the present study and the association between the women's knowledge of these risk factors and cervical development was found to be significant. Dutta (2009) in her study found that the estimated relative risk for developing cervical cancer among women getting married before 17 years of age was found to be high (7.9) as compared to women who were married after the age of 17 years.

Mohanty et al(2001) in their study observed that there was a decline of cervical cancer as the age of first marriage / first pregnancy advanced to 20-24 years. Similarly, a significant association was found between early marriage and cervical cancer by several authors. Early marriage indicates an early exposure to sexual activities and early pregnancy which are well known etiological factors for cervical cancer. These factors result in longer duration of married life, with greater opportunities for sexual activities and increased chances of becoming pregnant, all being associated with the disease.

The study revealed that 30 (50%) of the total sample gave birth to their first child before they were 18 years of age. Mohanty et al in their study found that the mean age of first pregnancy was as low as 18.13 years. There was a decline in the

Table 4. Mean, Median, Mode and standard deviation of knowledge score on Cancer Cervix

N=60

Mean	Median	Mode	Standard deviation
8.2	9	9	2.65

Range of scores: 5-14

cancer occurrence as the age at first pregnancy advanced to 20-24 years. Similarly, Dutta observed in her study the relative risk of acquiring the disease was six times more in cases of women who had first parity before 18 years of age ($p < 0.0001$) as compared to those who had first parity after the age of 18 years. Lower age at first parity was found to be significantly associated with subsequent development of cervical cancer. This may be attributed to early sexual activity, hormonal changes during pregnancy or may be due to cervical trauma during delivery at a relatively younger age.

In the present study, one third of the study population had multiparity. Dutta found a significant association between increased parity and occurrence of cervical neoplasia ($p < 0.05$). Again, Mohanty et al in their study observed that 93% of all cervical cancer patients had more than three children. Similarly, Nawalkha (1987) noticed a significant association between parity three and above and occurrence of cervical cancer. Thus, multiparity is a well-known risk factor for cervical cancer focussing just not on the frequency of coitus but also on the assault on the cervix during childbirth.

In the present study, 44 (73.33%) of the total number of women reported poor genital hygiene. In a study by Dutta, 46.1% of the women with cervical cancer had poor standard of genital hygiene. Significant association between poor genital hygiene and cervical cancer was also evident in Roy Chowdhury's study.

CONCLUSION

India contributes about 18 to 24% of the global figure of the cases of cervical cancer every year. This study reveals that women residing in urban slums have very poor knowledge of risk factors, early diagnosis and prevention of cervical cancer.

Since, increased awareness and early diagnosis prove to be effective life savers of cervical cancer, nursing professionals together with their counterparts must organise awareness education and screening programmes among vulnerable groups of women regarding the importance of prevention and early diagnosis of cervical cancer.

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