Master of Science in Public Health

Effect of Social Support on Resilience among Breast Cancer Patients in Rawalpindi and Islamabad

By

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This dissertation is the result of an independent investigation. Where my work is indebted to others, I have made acknowledgments.

I declare that this work has not been accepted in substance for any other degree, nor is it currently being submitted in candidature for any other degree

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Dedicated to all those who have been a constant source of support and Encouragement for me in my research work

I couldn't be able to accomplish this task without your support.....

ABSTRACT

Background: Social support has been played a very important role in cancer patients' life. It has great impact over the resilience of the patients. It helps patient to reduce stress, discomfort or psychological issues during journey of cancer.

Objectives: Current study was conducted to assess the effect of social support in resilience among breast cancer patients in public and private hospitals or clinics in Rawalpindi and Islamabad. It also aimed to find out effect of socio demographics factors on resilience.

Methodology: A cross-sectional study was carried out at public and private hospitals in Rawalpindi and Islamabad, Pakistan. A total of 180 respondents, from these hospitals were selected through non-probability consecutive sampling for the purpose of the study. Berlin social support scale and Connor Davidson Resilience scale were used to assess social support and resilience respectively. Independent sample t-test and one way ANOVA was applied to check the association of resilience with socio-demographic factors and correlation and regression were used to check the effect of social support on resilience. For both test p-value <0.001 was considered significant

.

Results: Out of total 180 respondents, majority respondents were 25 -50 (n=229, 57.3%) and were graduated (n=142, 78.9%). Sixty nine percent respondents were employed. Most of the participants were married (n=142, 78.9%). It was found that mean social support score (43±7.4) and mean resilience score (58±, 10.9). Analysis showed that major determinant for resilience was social support and was predicted positive impact on resilience (R^2= 0.42, p value< 0.001)

Conclusion: This study demonstrated that mostly patients had moderate social support and moderate resilience. There was no correlation between socio demographics variables and resilience but social support and resilience are positively correlated.

Keywords: Assessment, Association, Berlin social support scale, Breast cancer, Connor Davidson Resilience scale, Hospitals, Patients, Psychological issues.

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LIST OF ABBREVIATIONS

WHO	World Health Organization
ACS	American Cancer Society
BSSS	Berlin Social Support Scale
CDRSC	Connor Davidson Resilience Scale
BC	Breast Cancer
HER	Human Epidermal Growth Factor Receptor
BCS	Breast conserving Surgery
BRCA	Breast Cancer Gene
SD	Standard Deviation
ANOVA	Analysis of Variance
IRB	Institutional Review Board

CHAPTER I: INTRODUCTION

Cancer is a condition which is characterized by abnormal growth of cell in a body and these cells affects the whole body. According to the American cancer society in 2022, 1,918,030 new cases of cancer were reported and around 609,360 persons were succumbed to death in US. In developing countries population who is at higher risk of breast cancer is women and they are more prone to physical and mental disorder and emotional stress. (Al-Azri and Al-Moundhri, 2009 and Hack and Degner, 2004)

In 2015, a survey reported 17.5 million cases of cancer and 8.7 million people were faced death due to cancer. The second biggest cause of mortality in whole world is cancer. In England a cancer survival report showed survival rate among women who had been diagnosed with breast cancer was around 5 years after diagnosis in 2009. The lost disability adjusted life years (DALYS) are much higher in worldwide than any other cancer in women. According to EUROSTAT, breast cancer is subjected to high public health problem due to its high prevalence in European countries. In Asia, breast cancer becomes the second leading cause of death and responsible for 30% diagnosis of all types of Breast cancer worldwide. In Asian countries, Pakistan has highest rate of breast cancer cases which is around 22.9% held responsible for higher burden among all cancers according to Pink Ribbon Oncologist in 2022. Breast cancer is highly common in Pakistan in Asia especially young ladies who are highly diagnosed with advance stage and prolong prognosis (Sahil and Alam, 2007)

In Pakistan, most of population of all age groups is suffering from breast cancer, colon, anus, rectum or leukemia etc. The Pink Ribbon Pakistan mobile mammography unit is working to decrease the number through public awareness and by providing free mammography examination to the poor classes. Some cases were unreported and undiagnosed due to lack of accessibility and availability which is the main reason why exact figures cannot be identified.

The consequences of breast cancer are highly miserable that women could find extreme difficulty to face them. Developing countries has less rate i.e., 2.2% as compare to developed countries which is quite high i.e., 6.2%. If breast cancer is detected at early stage, it can be treated easily and survival rate could be higher and chances of survival increases more than 5 years. Survival only depends on the age of diagnosis, severity of stage or the means of treatment. Younger women can

survive more than women who are diagnosed with delay (American journal of breast cancer 2009). The current trend of breast cancer incidence in Pakistan has imposed a higher public health concern. Chances of breast cancer among young females aged 30-34 years may increases from 70.7 to 130.6% in 2020 and 2025 respectively.

The epidemiology of breast cancer in Pakistan is difficult to demonstrate due to bad tumor registry system. Psychological impact of breast cancer may cause anxiety, depression, panic attacks, and feeling of loneliness, suicidal thoughts, fear of death or fear of rejection by society among women. Breast cancer not only affects a victim of this disease but every person in that environment may undergo a stressful situation.

Social support either it is instrumental, emotional or informational acts like a hope for them. Motivating them or pushing them towards resilience brings a positive consequence in their life. It helps them to face the challenges comes in their lives due to cancer. It was reported that women who are alone or not having much social circle having a twice chances of dying as compare to patients with good social circle (Kroenke, 2018). Better social support with proper treatment may help in alleviating the unpleasant consequences of breast cancer. Social support plays a key role in controlling cancer in Iranian breast cancer women (Faghani, 2008)

Resilience in any person is to be defined as healthy functioning even knowing the fact that the person is suffering from pain but act as a healthy individual in all types of environments. According to literature patients who are experience or receiving social support from their family, friends, parents, spouse or relatives etc. are more resilient and positive about their health. Cancer patients with less social network having more chances of relapse than women with high social network (Crookes et.al, 2012).

1.1. Rationale

The rationale of this study is to assess the effect of social support on resilience among breast cancer patients and how social support is correlated to resilience. In Pakistan, there is no proper work has been done with this aspect and only some studies have been conducted regarding role of social support in cancer patients so there is need to identify how social support impact the resilience and also measure the resilience level among breast cancer women.

1.2. Research Question

1. What is the resilience level among breast cancer patients?
2. What is the impact of social support on resilience among breast cancer patients?

1.3. Aim

Aim of this study is to assess the effect of social support on resilience among breast cancer patients in public and private hospitals and Breast cancer clinics of Rawalpindi and Islamabad.

1.4. Objectives

1. To assess the resilience level among breast cancer patients.
2. To determine the effect of social support on resilience among breast cancer patients
3. To find out the association of demographic characteristics with resilience

1.5. Operational Definition

1.5.1. Breast cancer

It is a disease characterized by the abnormal growth of cells of breast. The kind of breast cancer depends on which cells in the breast turn into cancer.

1.5.2. Social Support

Social support refers to the quality of supportive interactions that a person has with other individuals and can play an important role in well-being. (Schwarzer & Leppin, 1991).

1.5.3. Resilience

It refers to the ability to cope with difficult, stressful and traumatic situations while maintaining or restoring normal functioning. Resilience has sustainable coping power (Yoo and Pasick, 2004)

CHAPTER.II LITERATURE REVIEW

2. Cancer

Cancer is the disease in which no proper etiology has been identified yet. It is marked by abnormal growth of cell or irregular cell division of cells in body. Our body is composed of cells which can divide and helps the body to do proper function or to grow properly. Sometimes cell grow rapidly due to some abnormality that leads to cancer or sometimes cancer may cause the cell to divide at gradual pace that we cannot diagnose the problem easily.

Diagnosis of cancer impacts every aspect of human life (Sarenmalm, 2013). It was mentioned that cancer is one of the biggest problems of this world in this era (Siegel and Jemal.2015). After the latest techniques of diagnosis and more advanced treatment patients are suffering from dreadful experiences during medical procedure of cancer (Bayly and Lloyd-Williams, 2016). Due to chronic nature of cancer families of patients or patients themselves experience an unpleasant situation (Labrell, 2019). If the cancer is diagnosed at early stage, it can be cured or treatable and one third of cancers is prevented (Noreen, 2015)

Immune system of humans is acting like a shield against diseases even for cancer that's why cancer is still not occurring with frequency as any communicable disease occurs (Paul Ehrlich, 2020). It also affects the emotional, psychological, physical or social well- being of person. Researches stated that it is caused by alteration in genes. Cancer has very less positivity (Burnet and Thomas, 2008). Patients may face different symptoms such as lack of sleep, fatigue, stress, restlessness and bad quality of life which reduces the life expectancy of patients if these problems are not considered serious (Taylor, 2003)

2.1. Types of Cancer on the Basis of Organs

Here are the few common types of cancer related to organs which are frequent globally.

2.1.1. Prostate Cancer

Prostate is a gland which is part of male reproductive part that produces seminal fluid. When this gland is affected by cancerous cells then male reproductive system is not functioning properly which leads to prostate cancer.

2.1.2. Lung Cancer

Human body requires oxygen for survival which is done by breathing. It is aided by the lungs that are most important organ of body.

2.2. Breast Cancer

The most prevailing cancer in both developed and developing countries is breast cancer in this era. It may occur in both genders but women are more prone to it due to structure of their body. Mortality rate among women due to this cancer is very high. Like other cancers, breast cancer has its own side effects and consequences. Due to genetic predisposition the occurrence of breast cancer among women is more than 20% (Durando, 2013).

2.2.1. How It Spreads?

It is a cancer caused by change in function or uncontrolled division of cell in breast tissue which leads to develop cancerous cell in breast sometimes growth of cell is rapid or sometimes growth is very slow. Breast is an organ present around ribs or chest muscles. It is present on both sides left or right with their own ducts, gland, tissue etc. It affects the epithelial tissues of glands which produces milk i.e., lobules, the tissues of ducts which are responsible for transfer of milk from lobules to nipples.

2.3. Types of Breast Cancer

There are many types of breast cancer on the basis of its nature or the parts present in the breast to be affected by cancerous cells.

2.3.1. Lobular and Ductul Carcinoma

When the cells of epithelial tissues become cancerous in breast, we call it carcinoma. These tumors usually found in lining of organs or tissues in whole body. When these tumors spread to gland, lobules or ducts of breast, they are known as adenocarcinoma.

2.3.2. Ductal Carcinoma in Situ

It is initial stage of breast cancer in milk ducts but it does not spread to other parts of breast. It is noninvasive in nature also known as intra-ductal carcinoma. Usually, this state does not characterize by any symptoms except breast nipple discharge and having low risk to become invasive.

2.3.3. Invasive Breast Cancer

This type of breast cancer has the ability to spread to other tissues of breast. It is not localized tumor. It is very common in nature and also known as invasive ductal carcinoma. This type accounts for 70-80% of breast cancers. It starts in milk ducts and spread to other surrounding tissues. Lymph vessels or lymph nodes are responsible for its metastases.

2.4. Special type of breast cancer

Invasive breast cancer sometimes presents special characters with respect to their growth, clinical manifestations or symptoms. Tubular breast carcinoma has similar survival rate as compare to normal people (Rakha, 2010).

2.4.1. Inflammatory breast cancer

In this cancer, lymph vessels present in breast are blocked by cancer cell which makes the breast to be inflamed that is why it is called inflammatory breast cancer. It is very dangerous sort of breast cancer but rare in nature. It makes up 1-5% of breast cancers. Appearance of breast is changed from normal to swollen and reddish in this state.

2.4.2 Triple-negative Cancer

Triple negative cancer is characterized by the lack of progesterone or estrogen hormone receptor for cancer cells which makes this cancer difficult to treat and worse in nature. In this state; cells do not make the enough quantity of protein known as Human epidermal growth factor (HER). This protein is highly produced in other type of breast cancer.

2.5. Stages of breast cancer

Usually, cancers are categorized into different stages on the basis of severity, etiology, pattern or nature of lumps present. Staging can be done according to the TNM system or 0 to IV grading system.

2.5.1 Staging system

Staging system is quite similar to TNM System but generally patients want to know the exact stage of their cancer which cannot be explained by TNM system to them so stage groups for breast cancer is the convenient method to understand the prognosis of patients for everyone. Before starting the treatment, it should be necessary to clinically diagnose the stage and then select proper surgical procedure. Stage groups for breast cancer are divided into 4 groups with 0 to IV numbering. Stage 0 is marked when cancer is in ducts or noninvasive in nature as represented by T0, N0 or M0 in which survival rate is 100% while stage I is small but localized. similarly, stag II indicates cancer has spread to axillary parts and survival rate is 93% during according to the ACS and stage III shows cancer has been spread to chest areas or nearby organs of breast and bigger in size and in this stage survival rate during 5 years is 72%. Stage IV describes the metastases how much cancer has been spread to distant organs. In stage 4, 22% is the survival rate which is low as

compare to other stages according to the ACS in 2016.Prognosis is directly related to stage of cancer. Lower stage cancer patient has good prognosis as compare to patients with higher stage who has very poor prognosis.

2.6. Causes of Breast Cancer

Breast cancer occurs due to changes in the cell present in milk ducts, glands, areola or lobules but it happens due to maturation of genes in DNA of cells. Some internal or external factors may damage the DNA. Higher level of estrogen in women may also be the reason of breast cancer. Defected genes or inherited cancer genes e.g., BRAC1 OR BRAC2 genes presence in body. Due to presence of oncogenes, human epidermal receptors (HERS) are highly produced Lifestyle, alcohol consumption, hormonal imbalance or diabetes may also be reason of breast cancer in women. Prolonged experience of smoking increases the chance of developing mammary gland cancer (Hashemi in 2014). During research in Australia women who get BRAC1 and BRAC2 in mutated gene form from parents, the risk of developing is 40% after age of 70 and 6% before age of 40 in them (Hopper et al., 1999).

2.7. Risk Factors

Sometimes people having the oncogenes in their body but due to their strong immune system they are suppressed but whenever favorable conditions or stimulus is taken by body it produces the effects in the form of cancer. Many women are at higher risk of developing breast cancer as compare to other women. Women with cancer family history, high breast density, and excessive use of contraceptive, hormonal imbalance, irregular menstrual cycle, obesity, sedentary lifestyle or hormonal replacement therapies are at higher risk of breast cancer. Women are more prone to this cancer as compare to males but do develop breast cancer in them. Women with age greater than 55 are also at risk.

2.8. Sign and Symptoms

Common symptoms are decrease in weight, fatigue, headache, swelling or fever etc. The most important warning signs for breast cancer are lump in breast or Armpit, excessive discharge from nipple, pain in breast, swelling in breast area, patchy or dry skin on the skin of breast, change in the shape of breast or nipple like nipple is inverted or changes in the size of breast. According to the cancer research in UK 2014 and American cancer society 2016 the major symptoms are redness

and blisters formation on the nipples. Mostly women with these symptoms are suspicious about having breast cancer which is required further investigation according to the doctors.

2.9. Diagnosis of breast cancer

Diagnostic procedures for cancer are usually very expensive that's why most of the people avoid these tests or does not include them in their routine screening. Early detection is really important to reduce and prevent deaths from breast cancer. If the cancer is detected early, it means size of tumor is small so it can easily be treated otherwise late detection leads to irreplaceable loss.

2.9.1. Screening

This method is used to detect the cancer in those people who don't have any symptoms .it is used to detect something suspicious in body. It is initial method where doctor informs patient about the need of further procedure or not. It is used for early detection before the symptoms appear. Lumps or any cluster or dark spots are detected by screening. It usually detects tumors that cannot spread to whole body or localized. cancer society.

2.9.2. Mammography

Mammography is a type of screening used to detect breast cancer. It is source of reducing mortality due to breast cancer. It is more beneficial for women with age greater than 60 or less beneficial for women with age less than 40s. Contrast enhanced mammography (CEM) is advanced form of mammography. It is very common worldwide. False-positive or false-negative results increases. Regular screening mammogram reduced the chance of developing advanced cancer in which prognosis is very poor (Løberg et al, 2015)

2.9.3. Ultrasound

It is technique used to detect any solid masses in body or any abnormality in the body. Ultrasound uses sound waves with high frequency to detect any changes in the organ by forming images. When dense breasts are present and cannot be detected by mammography reliably. Computer aided diagnose systems are the advanced form of ultrasound in which micro bubble are injected to concerned site to detect abnormalities accurately.

2.9.4 Magnetic Resonance Imaging (MRI)

MRI for breast is used to detect the detailed image of the breast by using high magnet waves. Highly recommended for high-risk population and multi lesions can be detected by this technique.

It is very expensive and not available in every hospital. Ductal carcinoma, invasive breast cancer or lobular carcinomas with 83-100% sensitivity is detected.

2.9.5. Biopsy

Biopsy is the most acceptable technique is used to detect the breast cancer more accurately in which a small needle guided with X ray is injected in the body to extract the tissue from respective organs which is further sent to laboratory for detection either tissue sample is having cancerous cells or not. Others scan like CT scan or PET are also used to detect further accurate shape, size, position or lumps. It is done to further investigate that tumor is dangerous or not (Cardoso, 2012).

2.10. Treatment

There are many surgical procedures which are available and helpful in increasing survival rate of patients.

2.10.1. Surgery

Surgical interventions are the most common treatment for localized tumors. In early ages, radical mastectomy was used to treat breast cancer patients. The breast conservative surgery and also mentioned that a result produced by mastectomy is equivalent to lumpectomy and radiation (Fischer, 2015 and Veronesi, 2018).

2.10.2. Breast conserving surgery

Now a days it is standard treatment for breast cancer with low grade stage along with the combination of radiation therapy. It is highly recommended for grade I and II due to its improved outcomes. In 2005 Milan in International consensus conference describes the BCS that along with health tissue breast issue can completely be removed by lumpectomy due to patient compliance and after that radiation therapy is recommended Drawback of this approach it makes higher risk of recurrences. It is preferable for young age patients and small tumors.

2.11. Medical oncology

Medical oncology includes chemotherapy, radiation, endocrine therapy or adjuvant therapies.

2.11.1. Chemotherapy

In chemotherapy, target cells or cancerous cells are killed by the medicine like antibiotic or anticancer drugs. These drugs can be given through intravenous or through mouth. It is mostly used along with other treatments like hormonal or radiation therapy. It is preferred to reduce the

symptoms and decrease the cancer cells in body and to improve the health of patients. Quality of life of breast cancer can be improved by the chemotherapy.

2.11.2. Radiation Therapy

In radiation therapy, x rays are used to kill the target cells. Cancer cells are more prone to high energy x rays. It is less painful therapy as compare to other therapies. Effect of radioactive rays has been removed after the treatment. Radiation therapy has two types internal and external radiation. In internal radiation, radioactive device has been placed in breast after surgery for short period of time while in external radiation therapy.

2.11.3. Hormone Therapy

This therapy works on endocrine system of body. Breast cancer cells are sensitive to some receptors which enhances their production this therapy is for them. It stops the growth of tumor cells which are sensitive to hormone and hormone receptor by stopping the ability of body to produce hormones involved in breast cancer. It is recommended for human epidermal growth positive breast cancer. The main hormone which is targeted in this therapy is estrogen. It can be used with other therapies in early breast cancer or metastatic cancer

2.12. Social Support

Social support is defined as is the care or affection provided you by your friends, family, parents or relatives. There is a direct correlation between social support and well-being (Tan and Karabulutlu, 2005). Some people need emotional support when they are going through tough or some need functional support etc.

Social support provided by family members is related with resilience and emotional stress in women with cervical cancer (Meyerowitz, 2009). One of the studies concluded that support from spouses in men after prostate surgery is considered as best means to reduce anxiety. Emotional support is the care given to a person by words and gestures. Instrumental support is a functional support to do daily task is provided by someone while specific information in the form of suggestions or advice is known as informational support. women experience multiple situations, stress, trauma, change in body shape, relationship problem, fear of death or rejection, anxiety or depression and many other problems. All these challenges are difficult to face by anyone without social support. After dearly diagnosis of cancer around 14-38% patients faced mental disorders (Okamura and Yamwaki, 2005). Cancer patients faced lack of hope, dependency, misery, lack of

happiness and stress about coming life (Arora, Finney Rutten, Gustafson, Moser and Hawkins in 2007).

Family is considered as secondary survivor because when someone in the family is diagnosed with cancer they are badly affected. Their responsibility in the form love, care or finance may increase and seeing loved one in pain is really pathetic situation. Individuals with less severe symptoms can be managed by care, providing financial aid and by managing disease which is known as psychosocial management services (Hales, Zimmermann, & Rodin,2008). Usually, quality of life of these patients can be better improved by social support provided by closed ones (Pehlivan, Ovayolu, Sevinc and Camci in 2012).

Specifically, ontological treatments can alter patient's self-concept as they experience consequences of treatment e.g., alopecia, change in body shape or removal of breast (Clemmey and Nicassio, 1997). Change in emotions and behaviors affect the decision power of breast cancer patients (Giffard, 2013)

Patients inducement can be suppressed by the peers group (Sheikh Pourkhani, 2018 and Pardede, 2021) while sexual disturbances and body shape changes is managed by the support of partner (Manne, 2005) and his coworker (Yu and Sherman, 2015). Self-confidence as a person not as a patient can be restored by patient compliance to treatment (Schulman-Green, 2016). Autonomous patients are used to be more participating in decision taking regarding the adaption of coping approaches explained by (Sebri, 2020). Social support is also related to the survival of breast cancer patients. Higher social support higher will be the survival rate. One of the studies had been done in San Francisco between 1994 and 1997 in which women with 50 years or below with breast cancer was taken to assess the relationship between social and support and survival of patients. Result of this study showed that women who were receiving high social support from family and friends had improved survival rates so the role of social network in cancer patient's life is very important in order to boost up self-esteem, their confidence and increase social support helps them to improve decision taking issues and problem resolving power. When women with a disease provide informational support to other patients it will help them to overcame their disease (Taylor and Lobel, 1989).

Researchers have found that social support received from family and relatives helps in reducing stress and good for emotional wellbeing while the support provide by the women with same disease helps in increasing the overall knowledge about breast cancer and also reduces negative thinking

and also helps to take right decision about options of treatment but only quantity of social support is not enough but quality matters too so the right quantity and improved quality of social support plays important role in breast cancer women in order to combat the adverse life event after diagnosis of breast cancer and it also helps to increase the resilience of patients which positively related to availability of social support. One study was done in Chinese breast cancer patient in which three categories are formed like low social support group, middle social support group and high social support group and relate the social support types to demographic characteristics of patient and conclusion of this was patients with low instrumental, informational and emotional support were more distressed as compare with high social support.

2.13. Resilience

Breast cancer badly affects the wellbeing of the women. Wellbeing is combination of two parts i.e., cognitive and affective. The consequences emerged from breast cancer diagnosis and its treatment disturbs many important aspects of life like social interactions, body shape, relationships and wok to do ability etc. in short mental, physical and social wellbeing of women is badly influenced (Guit and other colleagues, 2016). Many women can adapt the ability to hinder and accept the life crises due to personal experience of disease which develop higher resilience power in them (Garcia and Maroto Fernandez, 2015). Resilience is a dynamic process which is affected by emotional intelligence between protective factors and social or personal risks (Deshields in 2000). A study had been conducted on mediating role of the resilience for improved wellbeing in breast cancer patients in 2021 in which the researcher took 109 breast cancer women from different clinics and hospital. The result of this study showed resilience has great impact over the general health of breast cancer women through affective wellbeing. Women with high self-compassion and good social support showed fewer symptoms like stress, low self-esteem or bizarre behavior (Raque-Bogdan, 2011)

Studies have been shown that diagnosis of cancer and events happen during treatment acts as an opportunity for the patients to improve their personal, mental and emotional wellbeing that could lead to more resilience in them. It is based on different characteristics like social, demographic variables and personal attributes like social support, adaptation styles like coping approaches and relation with medical care, psychological and social consequences like quality of life. Biological factors, personal factors, social factors contribute to the resilience in breast cancer patients and to the coping style of women. It is better to use those strategies which improves the resilience that

can be done by improving those factors which are contributing to resilience. One of the studies has been done in India, in which a researcher wanted to assess the impact of hope and social support on resilience in cancer patients AND115 cancer patients were part of the study. In this study, researcher tested the hypothesis related to significant effect of social support on resilience. At the end of the study, hypothesis had been proved correct that higher the social support higher will be the resilience (Ustavsson-Lilius, Julkunen and Hietanen, 2007). Breast cancer women who spend more time with family and friends, participate in social gatherings and collaborate with social groups are more resilient (Hosseinei, 2016). Resilience was correlated with quality of life and social support (Schumacher, 2014).

2.14. Conceptual framework

Based on the previous literature, a conceptual framework of the present study was developed to highlight the relationship between resilience and social support among breast cancer patients.

Demographic variables e.g., age, weight, income, education, family history, type of treatment etc.

Resilience i.e., psychological defense or coping style leads to improved quality of life

Social support e.g., emotional support, instrumental support and informational support

Figure.1. Conceptual Framework

CHAPTER.III. METHODOLOGY

3.1. Study design

A quantitative research approach using cross sectional study design was used for the current study.

3.2 Study setting

The study was conducted in twin cities of Rawalpindi and Islamabad. Rawalpindi is located in Punjab province of Pakistan while Islamabad is the capital of Pakistan. Rawalpindi is the fourth largest city of Pakistan after Karachi, Lahore and Faisalabad. Islamabad and its neighbor Rawalpindi form the Islamabad-Rawalpindi metropolitan area, which forms combined area of Rawalpindi and Islamabad of 1,165.5 km square with total population of 4,834,547 (2017).

3.3. Study duration

Study duration was six months. It was carried out from September 2022 to March 2023 in twin cities, Rawalpindi and Islamabad.

3.4. Study population

Data were collected from breast cancer patients of public and private hospitals of Rawalpindi and Islamabad during past three months. Patients were there for follow up or treatment. The aim of investigating the women was to collect the required information regarding social support and resilience.

3.5. Eligibility criteria for the study population

3.5.1 Inclusion criteria

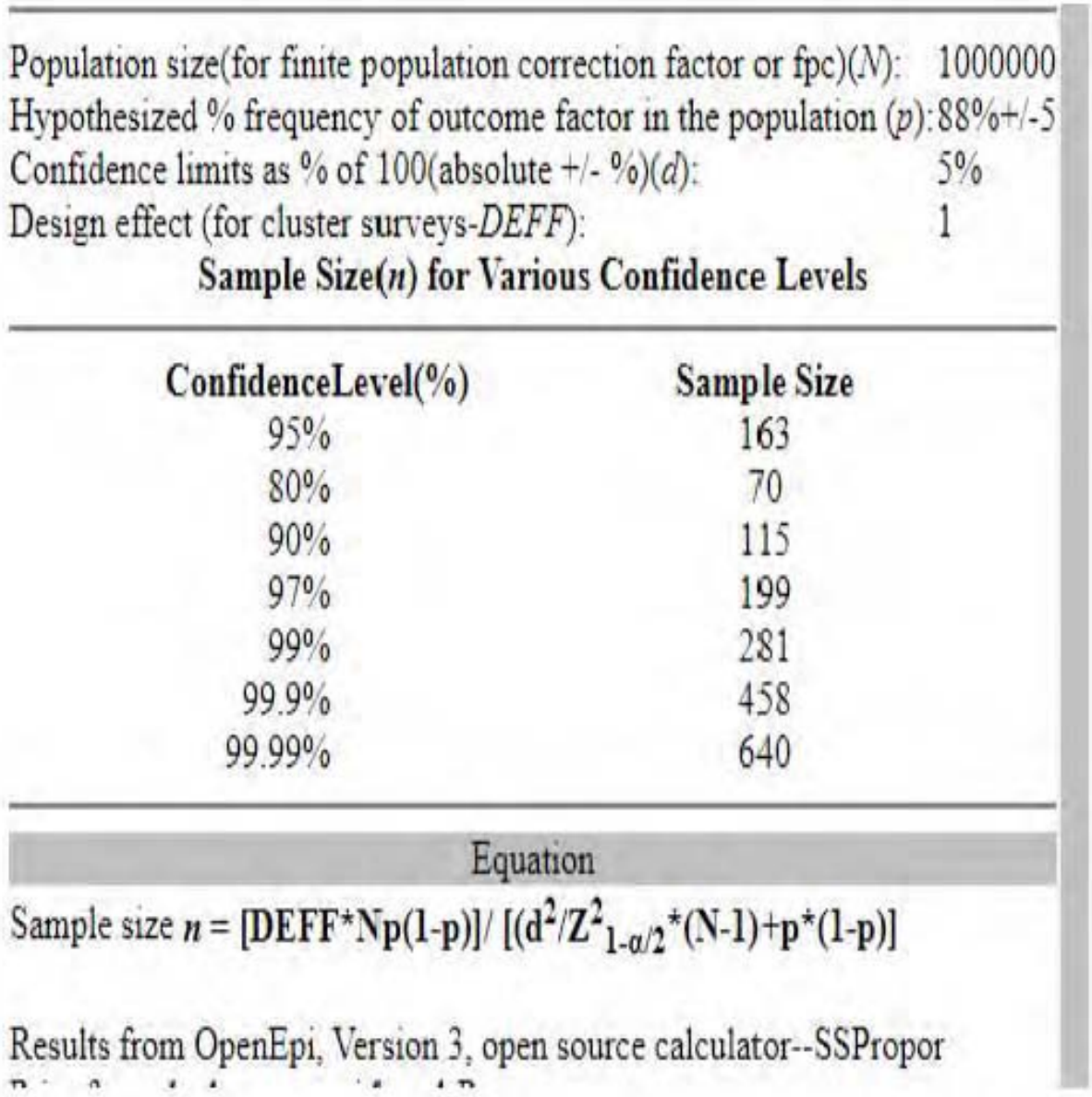
- Women above 18 years
- Undergoing treatment for 6 months
- Stages I, II, III

3.5.2. Exclusion criteria

- Pregnant women
- Not willing to fill questionnaire
- Patients with benign breast disease

3.6. Sample size

Sample size was calculated through OpenEpi version 3 by using 88% prevalence and margin of error as 5%. We get sample size 163 and by adding 10% non-response it was 180 (Deeksha Sharma**,** Chandigarh from July 2018 to December 2019).



Population size(for finite population correction factor or fpc)(*N*): 1000000
Hypothesized % frequency of outcome factor in the population (*p*): 88%+/-5
Confidence limits as % of 100(absolute +/- %)(*d*): 5%
Design effect (for cluster surveys-*DEFF*): 1

Sample Size(*n*) for Various Confidence Levels

ConfidenceLevel(%)	Sample Size
95%	163
80%	70
90%	115
97%	199
99%	281
99.9%	458
99.99%	640

Equation

Sample size $n = [DEFF*Np(1-p)]/ [(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)]$

Results from OpenEpi, Version 3, open source calculator--SSPropor

Figure.2. Sample Size for Frequency in a Population

3.7 Sampling strategy

Consecutive sampling was used. All the public and private hospitals of Rawalpindi and Islamabad were enlisted. Then hospitals and clinics having the oncology department were selected.

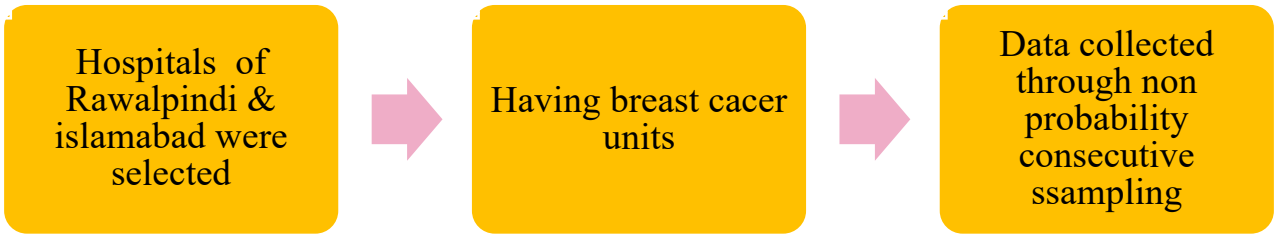


Figure 3. Non-Probability consecutive Sampling

3.8. Data Collection Tool

Data collection tool is in the form of questionnaire which is comprised of three sections. First socio-demographic data, second part is consisting of Berlin social support scale (BSSS) (Ralf Schwarzer & Ute Schulz 2013) to measure the social support level and third part is Connor Davidson resilience scale (Kathryn M. Conner and Jonathan R.T. Davidson 2003) to measure the resilience level.

3.9. Scales for Data Collection

3.9.1 Berlin Social Support Scale (BSSS)

This scale is used to measure the various types and functions of social support among cancer patients but now it can be used in healthy individuals. BSSS is divided into emotional, instrumental and informational support. Originally it has 6 subscales comprising of perceived social support, received social support, need for support, support seeking, provided support and protective

buffering support but later on it was modified. I have used 16 questions with 4-item Likert scale (strongly disagree to strongly agree) from perceived social support and received social support according to the requirements and to avoid duplication. It was analyzed by coding 1 to 4. Higher number means high level of social support and finally it was computed. Its Cronbach's alpha was 0.74.

3.9.2 Connor Davidson Resilience Scale (CDRSC)

This scale is used to measure resilience or how well one is equipped to bounce back after stressful events, tragedy, or trauma. It had 25 questions with 5 items Likert scale (not true at all to true all time). It was coded by 0 to 4. Higher number means higher resilience and finally it was computed. Its Cronbach's alpha was 0.77.

3.10. Data Collection

Data was collected by using self-administered questionnaire which was typed in English and Urdu both. An orientation with participants was carried out where it was possible to help filling in questionnaire. The questionnaire has both open ended and closed ended questions.

3.11 Study Variables

3.11.1. Dependent Variables

- Resilience

3.11.2. Independent Variables

- Socio-demographic characteristics and social support

3.12. Data collection procedure

Ethical approval was obtained from AL- Shifa School of Public Health; a formal letter was used to get permission from higher authorities of different hospital to collect data from their patients. Letter included all the information relevant to this study e.g., research title, name of institute, purpose of the research, protocols and confidentiality of the information with anonymity of respondents. Once the permission was granted, personal visit was made to the different hospitals in order to collect data from the patients. Not every patient who was approached agreed to participate in study. Self-administrations were carried out.

3.13 Pilot Testing

The questionnaire was pretested on 15 respondents at the study site to assess its feasibility, acceptability and validity. The respondents gave the feedback that questionnaire was quite lengthy therefore repetitive questions were adjusted accordingly. All questions were responded by the patients. Minor amendments were made to text and questions.

3.14. Face Validity

The questionnaire was made and reviewed from public health workers, supervisor, and cancer patients and peer review was taken to gain the valuable feedback.

3.15. Content Validity

The questionnaire was discussed with supervisor to receive constructive criticism.

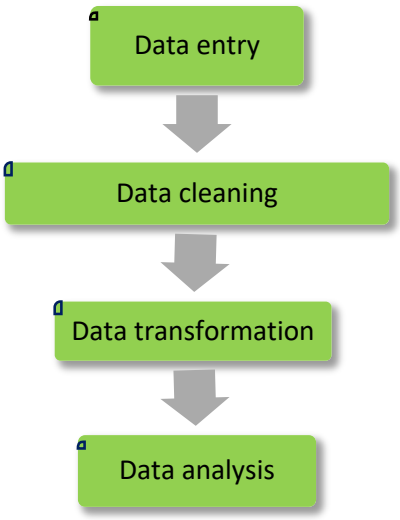
3.16. Data Management

A codebook was developed for the questionnaire to be a reference for analysis and also a record of codes of the open-ended questions. Data was entered and recorded in SPSS version 26 statistical software package according to the serial number at the end of each day. Spot checking method and double entry method was used to clean the data. Finally, all collected data entered twice and merged in one file to check for any error.

3.17. Data Analysis Procedure

All the data collected from participant was analyzed by using statistical package for social Sciences (SPSS) version 26. Data of qualitative demographic variables such as weight, age, Occupation etc. were entered in the SPSS by using codes that was assigned to each category. The questionnaire used for the study was quantitative, providing the score after computing the Scale and apply test on this computed result of both scales.

Descriptive statistics were generated for socio-demographic characteristics, reasons for outcome Variable. Data were summarized in the form of frequencies and percentages and presented in table form, Bar chart and Pie**.** Inferential analysis was done with independent t test, one-way ANOVA, correlation and regression for all tests, p-value <0.05 was considered significant.



Descriptive analysis Inferential Analysis

Frequencies and percentages **Independent t test, one way ANOVA, correlation and regression**

Figure.4. Data Analysis Plan

3.18. Ethical Consideration

IRB approval was taken from the ethical committee of Al Shifa School of public health after synopsis presentation. Informed consent form was attached in annexure that was signed from every participant before data collection. The information collected from the participants was

Only be used for the purpose of research. All the information and data were kept strictly confidential. There was no risk in this research. This study was highlighting the effect of social support on resilience. Implications of this study for providing therapeutic clinical services and fostering the healthy psychological development among breast cancer women were discussed. Permission letter was taken from the hospital authorities to access the data from patients.

CHAPTER.IV RESULTS

4. Descriptive Results

A total of 180 patients were interviewed and the response rate was 99%. All participants were women between ages of 25- 76 years and all of them were at different levels of treatment during past six months or more in public and private hospitals or clinics.

4.1. Demographic Characteristics of Study Participants

Participants were breast cancer females in this study. More than half of the participants were between age of 25-50 (n=106, 58.9%) and some of them were between 51- 100 (n= 46.74, 41.1%) as shown in figure 5. Mostly weights were above 60kg (n=72, 40.0 %) and 51-60 (n=69, 38.3%) and rest were lied in 40-50(n=39, 21.7%). Most of the women were married (n=142, 78.9%) and few were unmarried (n= 27, 13.4%). All demographic variables are shown in table 1 and figure 6,7 and 8.

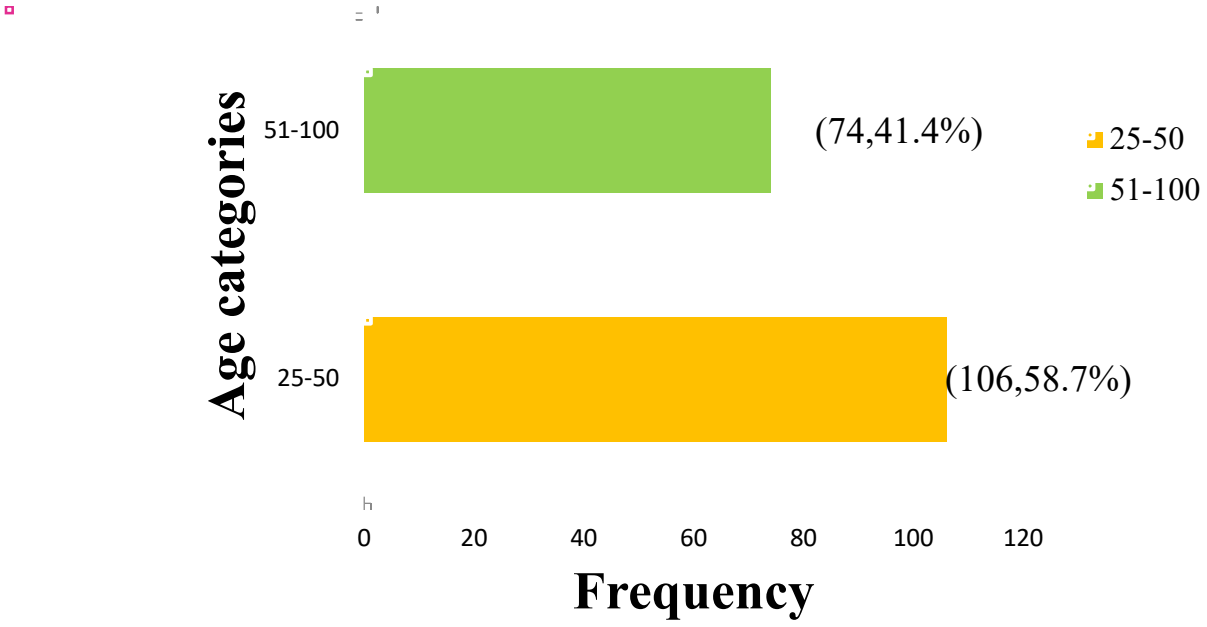


Figure.5 Percentage and frequency of age of respondents

Total of 180 respondents Half of respondent's age were in 25-50 (n=106, 58.9%) and remaining respondent's age were in range of 51-100 (n=74,41.1%)

Table.1 Demographic Description

Categories	N (%)
Weight 40-50kg 51-60kg >60kg	 39(21.7) 69(38.8) 72(40.0)
Married Unmarried	142(78.9) 27(15.5)
Graduation Undergraduate	98(54.4) 82(45.6)
Employed Unemployed	52(28.9) 128(69.1)
Income 10-50k 51-100k >100k	 94(46.8) 66(32.8) 41(20.4)
Tenant Owner	106(58.9) 74(41.1)
Urban area Rural area	79(43.9) 101(56.1)
Nuclear Joint	103(57.9) 75(42.1)
Duration 6 months 1year >1year	 46(25.6) 82(45.6) 52(28.9)
Surgery/chemotherapy Chemotherapy/radiation combined	39(21.7) 93(51.7) 48(26.7)

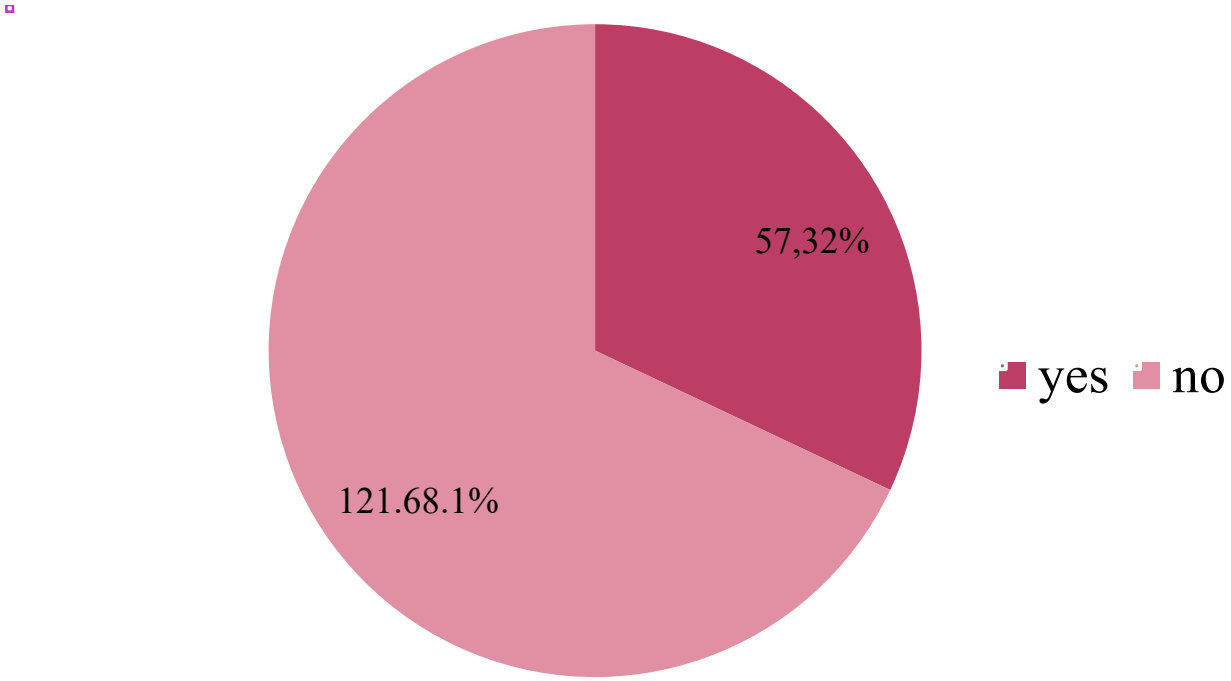


Figure 6. Percentage of frequency of family history of breast cancer

Highest respondents were no family history of breast cancer(n=121,68.1%)

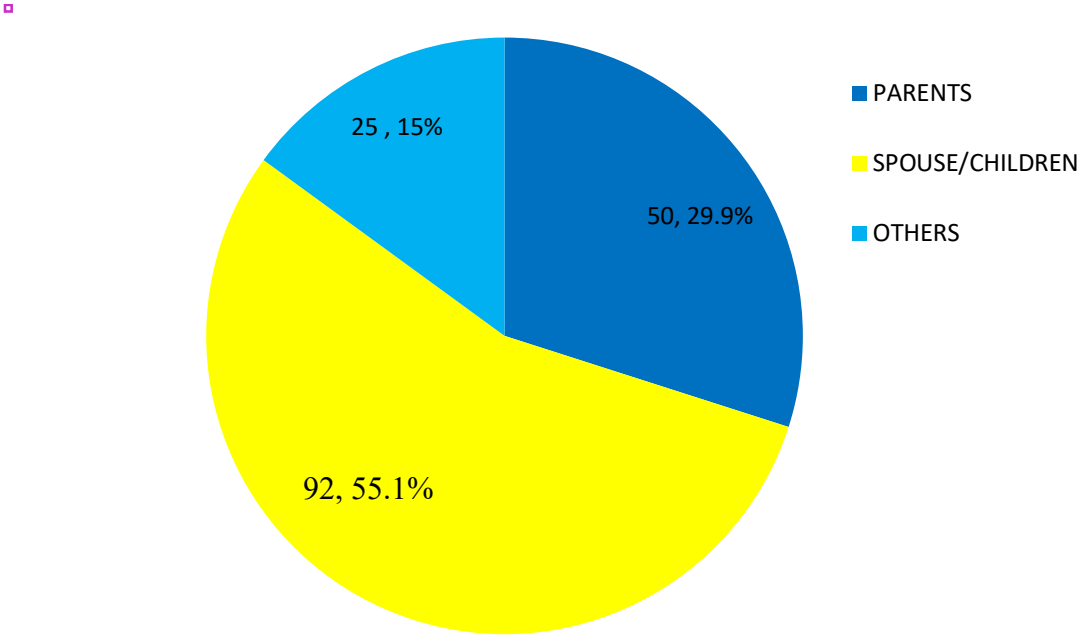


Figure.7. Percentage and frequency of source of social support of respondents

Half of the participants were getting social support from spouse/children (n=92, 55.1%) and some were getting from parents (n=50, 29.9%).

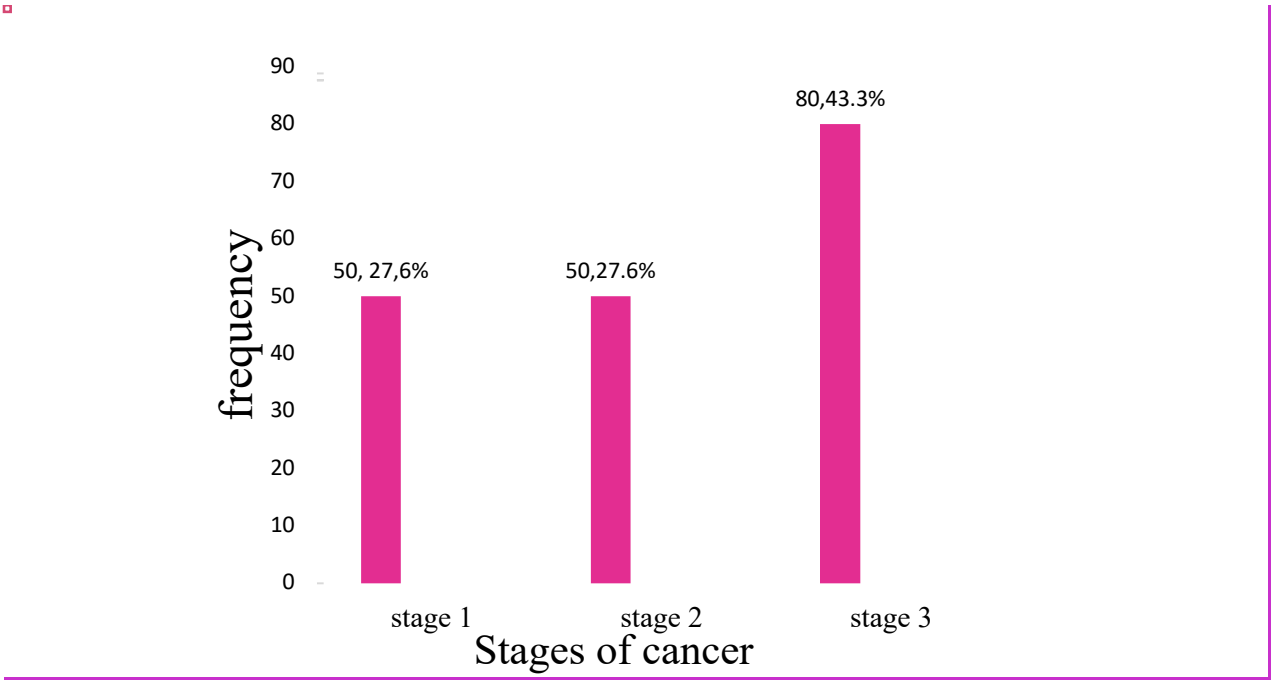


Figure.8 Percentage of cancer stages of respondents

Mostly patients were suffering from stage 3 cancer (n=78,43.3%)

4.2. Social Support Measured by Berlin Scale among Respondents

Total 180 questionnaires were distributed among breast cancer patients in different hospitals and response rate was 100%. There was total 16 items in social support part of the questionnaire, measured on the 4 option Likert scale with options from strongly disagree to strongly agree (1-4). The total score of social support had a range of 26-64 and computed mean and standard deviation (43 ± 7.4) are mentioned in table 2. Higher scores indicate higher social support. Around half of the participants were somewhat agreed that they had people who likes them (n=82, 45.6%) and thirty (16.5%) were strongly agreed with the statement. Rest of the descriptive of Berlin scale of social support is mentioned in the figure 9 and figure 10.

Table.2. Mean and Standard deviation of social support

Independent variables	Mean ± SD	Minimum value	Maximum value
Social support	43± 7.4	26	64

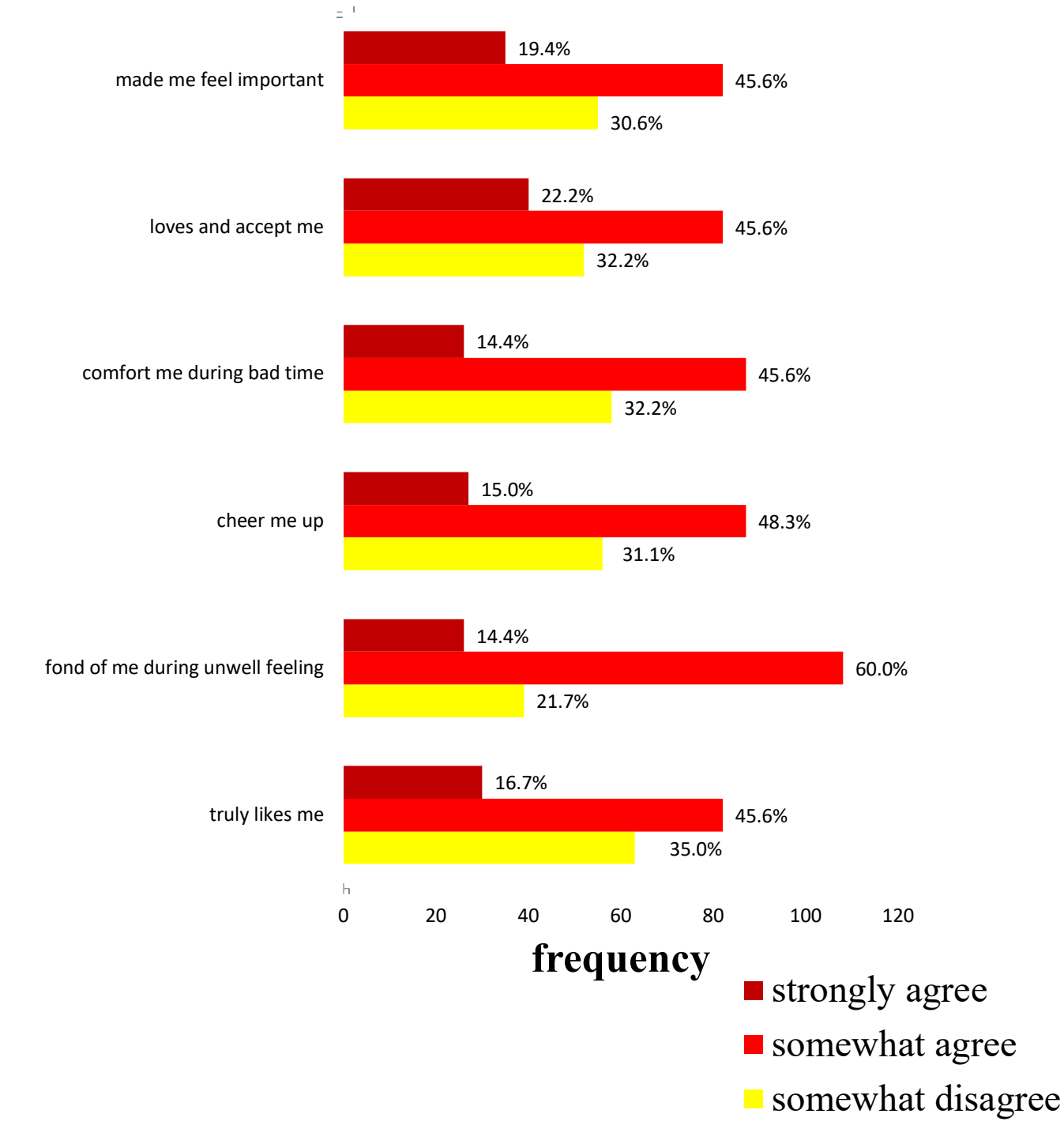


Figure.9 Percentage and frequency of Berlin social support scale

According to this bar chart most of the respondents were reported somewhat agree towards Berlin social support scale

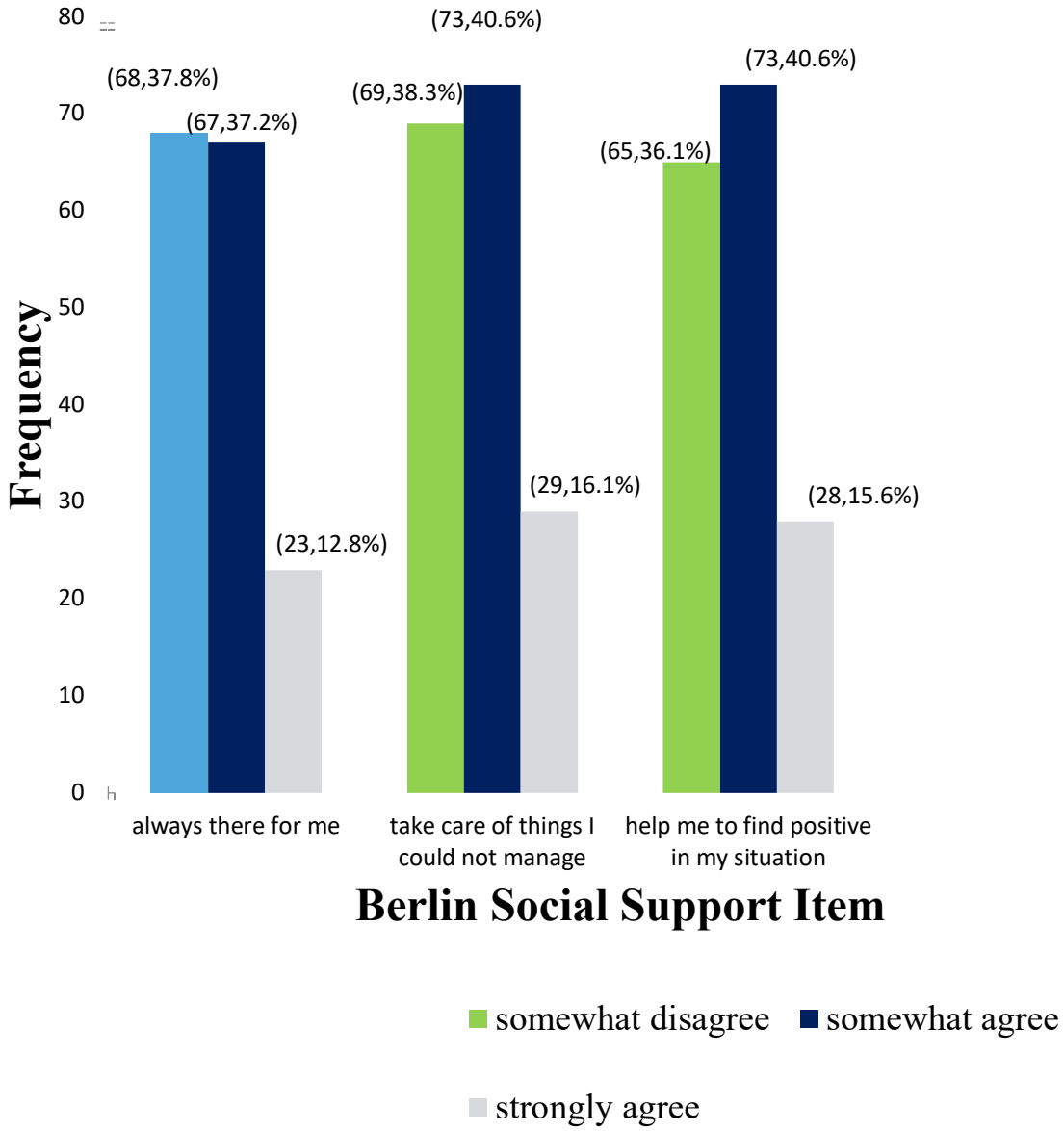


Figure.10 Percentage and frequency of Berlin social support scale

According to this bar chart most of the respondents were reported somewhat agree towards Berlin social support scale

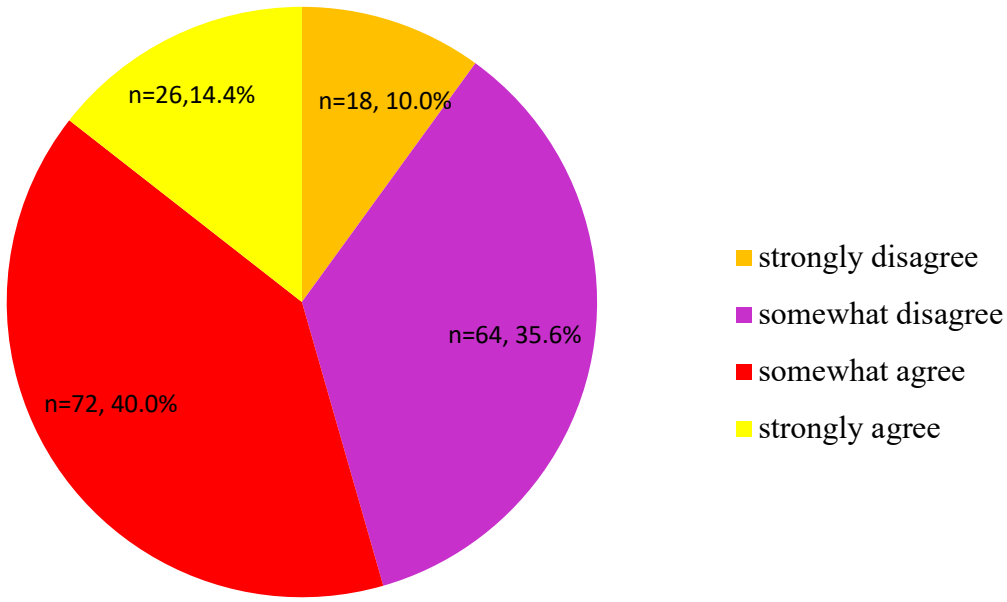


Figure.11. Percentage and frequency of Berlin scale of social support item

This figure shows the about (n=72, 40%) participants were somewhat agree that they had person who suggested activities to distract them.

Connor Davidson Resilience Scale findings

There were total of 25 items in the resilience part of the questionnaire, measure on the 5-option Likert scale from not true at all to true all the time (0 to 4). The total resilience scale had a range of 31 to 96 and computed mean and standard deviation of resilience (58± 10.9) are mentioned in table 3. High scores mean higher resilience. Results of resilience scale indicates that patients (n=80, 44.4%) reported that sometimes it is true that they are able to adapt to change when it occurs and participants (n=65, 36.1 %) were often true. Patients (n=79, 43.9%) mentioned that it is sometimes true that they have secure relationship and only two (1.1%) were marked not true at all. Other details are mentioned in table.4.

Table.3. Mean and Standard deviation of Resilience

Dependent variables	Mean ± SD	Minimum value	Maximum value
Resilience	58 ±10.9	31	96

Table.4 Description of Connor Davidson Resilience Scale

STATEMENTS	Not true at all N (%)	Rarely true N (%)	Sometimes true N (%)	Often true N (%)	True all the time. N (%)
I am able to adapt when changes occur.	1(0.6)	20(11.1)	80(44.4)	65(36.1)	14(7.8)
I have one close and secure relationship	2(1.1)	7(3.9)	79(43.9)	64(35.6)	28(15.6)
I can deal with whatever comes my way	4(2.2)	23(12.8)	75(41.7)	53(29.4)	23(12.4)
Past successes give me confidence.	12(6.7)	20(11.1)	77(42.8)	57(31.7)	14(7.8)
I try to see the humorous side of things when I am faced problems	12(6.7)	20(11.1)	77(42.8)	57(31.7)	14(7.8)
Having to cope with stress can make me stronger	4(2.2)	21(11.7)	73(40.6)	49(27.2)	31(17.2)
I tend to bounce back after illness, injury or other hardships.	1(0.6)	21(11.7)	76(42.2)	57(31.7)	25(13.9)
I believe most things happen for a reason.	4(2.2)	23(12.8)	64(35.6)	60(33.3)	29(16.1)
I make my best effort, no matter what.	7(3.9)	22(12.2)	64(35.6)	56(31.1)	31(17.2)
I believe I can achieve my goals, even if there are obstacles.	5(2.8)	22(12.2)	69(38.8)	59(32.8)	25(13.9)
Even when I am hope less. I don't give up	1(0.6)	27(15.0)	74(41.1)	48(26.7)	30(16.7)
In times of stress, I know where to find help.	7(3.9)	21(11.7)	75(41.7)	53(29.4)	24(13.3)
Under pressure, I stay focused and think clearly.	10(5.6)	23(12.8)	71(39.4)	53(29.4)	23(12.8)
I prefer to take the lead in problem-solving.	10(5.6)	23(12.8)	78(43.3)	49(27.2)	20(11.1)
I am not easily discouraged by failure	6(3.3)	26(14.4)	79(43.9)	52(28.9)	17(9.4)
I think of myself as a strong person when dealing with life's challenges and difficulties	5(2.8)	21(11.7)	72(40.0)	58(32.2)	24(13.3)
I make unpopular or difficult decisions.	4((2.2)	20(11.1)	76(42.2)	57(31.7)	23(12.8)
I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	5(2.8)	22(12.2)	67(37.2)	57(31.7)	29(16.1)
I have to act on a hunch.	3(1.7)	24(13.3)	70(38.9)	62(34.4)	21(11.7)
I have a strong sense of purpose in life.	2(2.2)	16(8.9)	76(42.2)	54(30.0)	30(16.7)
I feel like I am in control.	6(3.3)	19(10.6)	79(43.9)	59(32.8)	17(9.4)
I like challenges.	6(3.3)	33(18.4)	66(36.7)	54(30.5)	21(11.7)
I work to attain goals	5(2.8)	17(9.4)	77(42.8)	61(33.9)	20(11.1)
I take pride in my achievements	3(1.7)	12(6.7)	60(33.3)	68(37.8)	37(20.6)

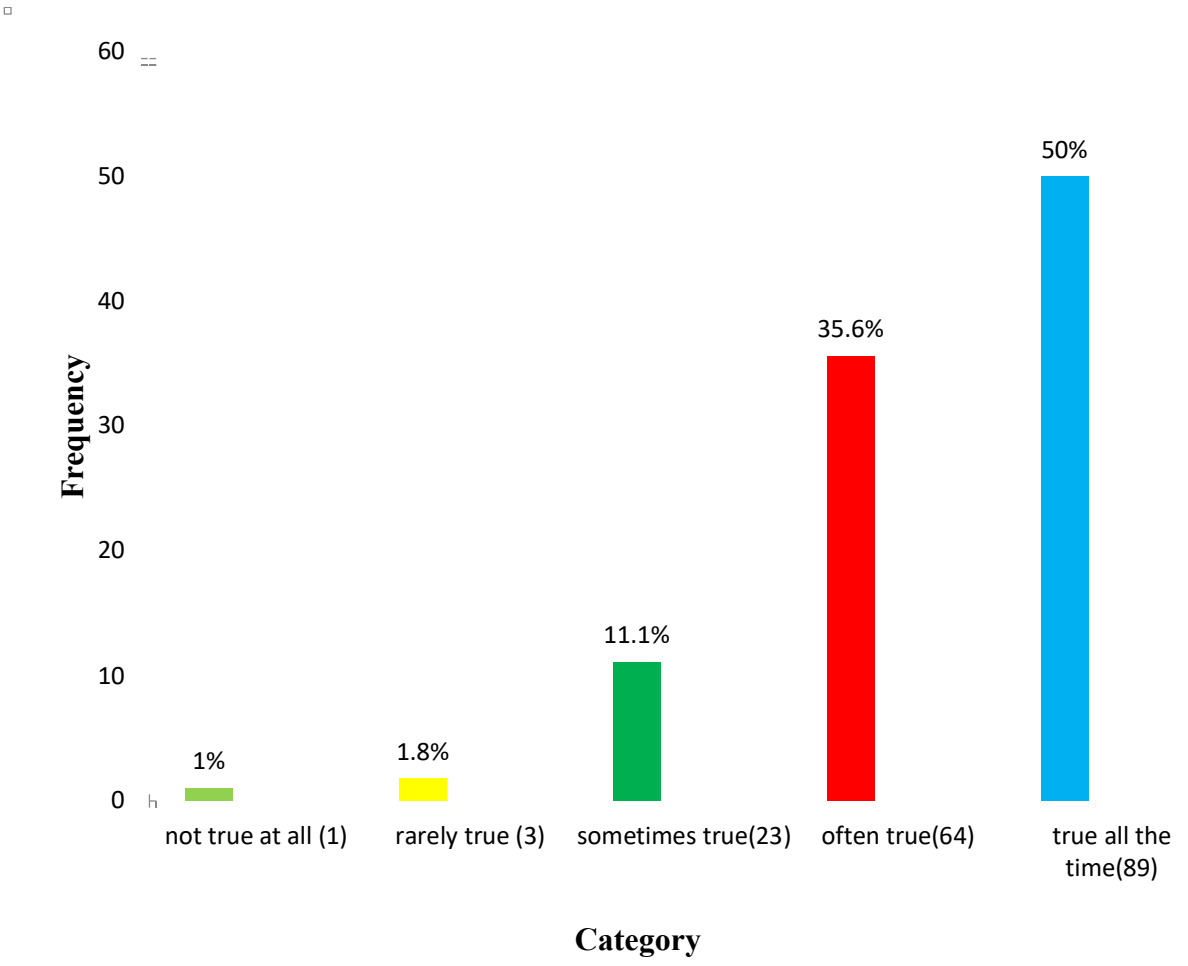


Figure.12 Frequency and percentages of Connor Davidson item (everything happens by God or fate)

Bar chart shows 50% respondents were strongly agreed that everything happens by God while 35.6% reported that they are somewhat agreed and only 1% respondents were strongly disagreed.

4.4. Inferential Results

Independent t test and one way ANOVA were used to find association between socio-demographics and resilience while correlation and linear regression were used to find the association and effect of social support on resilience respectively.

4.4.1 Resilience and Demographic Variables (independent t test)

The result table showed independent sample t-test was conducted to check association of resilience with binary demographics variables. Assumptions were analyzed (normality of outcome variable). Almost all used binary demographic variables were not statistically significant associated with resilience and there was no significant difference among means of categories.

Table.5 Demographic Factors Associated with Resilience

Variables	Mean ± SD	N	t(df)	p-value
Age 25-50 51-100	 58.1(10.6) 59.6(11.4)	 106 74	1.1(178)	0.28
Education Undergraduate Graduate	 58.8(11.1) 58.7(10.9)	 82 98	0.43(178)	0.96
Employment status Unemployed Employed	 58.1(10.5) 60.4(11.8)	 128 52	1.24(178)	0.21
Housing status Tenant Owner	 57.6(9.61) 60.0(12.6)	 106 74	1.22(178)	0.22
Resident of Rural area Urban area	 59.5(11.9) 57.8(9.6)	 101 78	1.06(177)	0.28
Family status Nuclear Joint	 59.0(10.5) 58.7(11.5)	 103 75	0.13(176)	0.89
Family history Yes No	 58.9(10.3) 58.8(11.3)	 57 121	0.55(176)	0.95

Note: Independent t Test

4.4.2 Resilience and Demographic Variables (one-way ANOVA)

Resilience which was measured through Connor Davidson resilience scale (table) showed on- way ANOVA was conducted between resilience and social demographic variables. All used demographic variables were not significantly associated with resilience except source of social support F (179) = 0.34, p-value= 0.02 and there was no difference within category's means of variables which indicated that resilience was not affected by the social demographic variables

Table.6 Demographic Factors Associated with Resilience

Variables	Mean ± SD	N	F (df)	p-value
Weight				
40-50	57.6(6.9)	39		
51-60	56.7(10.6)	69	3.7(179)	0.06
>60	61.4(12.4)	72		
Marital status				
Married	58.9(11.4)	142		
Unmarried	58.1(7.7)	27	0.76(179)	0.92
Other	58.2(11.5)	11		
Monthlyfamily income				
10000-50000	57.2(10.3)	94		
51000-100k	61.0(10.8)	96	2.3(179)	0.10
>100k	58.8(13.1	20		
Duration of treatment				
6 months	61.0(10.4)	56		
1 year	59.7(10.2)	62	1.01(179)	0.66
>1 year	61.7(11.3)	52		
Medical treatment				
Surgery/chemotherapy	57.8(13.4)	39	0.43(179)	0.65
Chemotherapy/radiation	58.6(10.7)	93		
Combined therapies	59.9(9.1)	48		
Source of social support				
Parents	58.9(11.8)	50	0.34(179)	0.02*
Spouse/children	68 1(13.2)	92		
Other	50.2(11.5)	25		
Stages of cancer				
Stage 1	58.9(11.2)	40		
Stage 2	53.5(10.4)	48	1.05(179)	0.06
Stage 3	60.2(11.4)	80		

Note: one-way ANOVA/* significant

4.5. Correlation of social support with Resilience

A Pearson correlation examined the relationship between social support and resilience as shown below in table. The result of correlation analysis revealed that there was a positive correlation between patient's resilience and social support. In this study, there was a significant correlation between resilience of respondents and social support r= 0.65, p value= < 0.001. The direction of relationship is positive and linear and strength is quite strong.

Table.7 Descriptive Statistics and Correlation for Study Variables

VARIABLES	N	Mean	SD	1	2
resilience	180	58.8	10.9	-	0.65*
Social support	180	43.4	7.3	0.65*	-

*p< 0.001

4.6. Regression analysis between social support and resilience

Regression analysis was done between the social support and resilience on SPSS to find the effect of social support on resilience as shown in table 7. In this analysis, resilience was taken as dependent variable while social support was taken as independent variable. All the assumptions were analyzed. The dependent variable resilience was regressed on predicting variable social support to check the effect between them. The R^2 value of 0.42 revealed that predictor variable explained 42% variance in outcome variable with F (1,178) = 129.3, p < 0.001. The findings revealed that social support positively predicted resilience (β=0.65, p<0.001)

Table 8. Regression Coefficients of Social Support on Resilience

Variable	*B*	β	SE
Constant	16.9***		3.7
Social support	0.96***	0.65	0.19
R^2	0.42		

NOTE, N= 180
***P<0.01

CHAPTER.V. DISCUSSION

The current study was carried out to check the effect of social support with resilience and to determine the different factors that are associated with resilience among breast cancer patients. This study was carried out at different public and private hospitals of Rawalpindi and Islamabad. For assessing the social support of the patients, Berlin scale of social support (BSSS) was used while Connor Davidson Resilience scale (CDRSC) was used to measure the resilience level. The results showed that current study population high level of social support (43±7.5) and high level of resilience (58± 10.7).

According the descriptive analysis, mostly respondents were married (142, 78.9%) and graduated (98, 54.4 %.) around half of the respondents were below income of 50k and were tenants. It was found that the mean score of resilience among different age groups were similar (58.1±10.6 and 59.6± 11.4). There was no difference in the mean score of resilience among undergraduate and graduate (58.8± 11.1 and 58.7± 10.9 respectively). Employed respondents had high mean score of resilience as compare to unemployed but significantly associated (60.4± 12.6 and 57.6 ±10.5 respectively). In the present study it was observed that there was no significant difference within means among different categories of social demographic variables except source of social support which is significantly associated with resilience F (179) = 0.34, p-value= 0.02. Overall result indicated that resilience did not affect by demographics variables.

High resilience reported by the women who were employed as compare to unemployed patients. It is found that patient with joint family system and who have orientation to health had good social support level as compared to those who have not. It is concluded that family must have up to date knowledge of disease and should also be involved in treatment process. Patients who get emotional support from their partners have higher score in high resilience

In emotional support, patients were usually reported that they are somewhat agreed with that they could have people who care for them (n=108, 60.0%), show concern when they are not feeling well (n=87, 48.3%), people who made them feel valued and important (n= 82, 45.6%), who assured them for dependency (n=88, 48.9%) and encourage them to not give up (n=78, 43.3%). Similarly, in case of instrumental support they were agreed that could have person who offer them help (n=33, 18.3%), provide support in case of need (n=82, 45.6%) and took care of things that they could not manage on their own (n=73, 40.6%). This study also reported that population have social support in the form of information through people which helped them to stay positive (n=73, 40.6%) and

suggested activities to distract them (n=76, 50.6%). After analyses it was observed that women were feeling positive about their life after being diagnosed with breast cancer and were more resilient to fight back against all odds.

In this study, it was found that social support was significantly associated with resilience Most of the respondents reported high resilience towards social support which indicates that there was a significant correlation between the resilience and social support. The analyses result showed in this study, that patients had usually low informational support with respect to resilience in this study.

To measure the strength and direction of correlation between social support and resilience, correlation and regression were conducted. In this study, correlation ($r=0.65$, $p <0.001$) indicates positive and significant association between the social support and resilience which could further confirmation of previous had been done on resilience and social support. Linear regression was applied after the correlation and results showed that the social support affects the resilience which means if patient's social support increases, resilience also increases ($R^2=0.42$, $p< 0.001$).

In the current study, it was found that demographics variables produce little or no effect on resilience while social support produces positive effect on resilience so by increasing the social support of patients through family, friends, relatives or health professional on the form of care, love, words, information or in tangible form makes the patient more resilient. One of the studies showed that people who are more resilient regarding their disease, their life expected proved to be increased.

This study has found that people who are living in joint family system were scored more resilience level and social support level as compare to nuclear family system. Resilience increases cancer patients' health by helping them to cope better with negative emotions and feelings (Matzka, 2016).According to the regression analysis results, resilience was dominantly affected by perceived and received social support which explains 42.5% of the variance. Our study also showed that social support was strongly associated with resilience, as seen in other populations.

Social relationships such as family and friends are critical protective factors for resilience. Perceived social support helps women effectively cope and adapt to life changes. Previous evidence has shown that a cancer diagnosis is an important stressor triggering physical and psychological distress among affected individuals. It is recommended that medical staff encourage family members and friends to offer more companionship and support, thereby improving

resilience and women's ability to adapt to their state of hardship or affliction. Recently it was revealed that resilience helped reduce health-related worries in women with an increased risk for breast or ovarian cancer

This study found the most significant ones to be emotional and instrumental support. Results also show that family, partner and friends are the most important sources of support when it comes to patients' resilience. However, health professionals as a source of support relates to resilience Very often, families become patients' main sources of support reducing stress and increasing patients' emotional wellbeing .This source of support provides both emotional and physical benefits for patients, which have a positive impact on patients' resilience Cancer survivors often reported the importance of emotional support from their partners for coping with the overall disease process, from the initial diagnosis to the treatment administered and the subsequent consequences .

Informational support is also relevant due to patients needing information to better cope with the disease. The role of health professionals is particularly relevant in this area, as they can also contribute to improve patients' quality of life. In order for informational and emotional support from health professionals to be effective in the increase of patients' quality of life, high communication between patients and health professionals must take place. many patients reported that most of the informational support they receive comes from health professionals other. Patients consider such support essential to improve their knowledge on the disease and learn how to cope with it more adaptively.

The approach of the present study highlights the importance of understating patients' knowledge about social support and how it impacts the resilience. One of the study's relevant contributions is the inclusion of health professionals as support sources for patients. The high value given by patients to this source must not be disregarded, which is sometimes compared to the support received from friends and family. Thus, making it a key source of support in crucial stages of the disease such as the initial diagnosis or during treatment.

5.1. Strengths

The current study has used validated and internationally accepted tools for the assessment of social support level and resilience level. The study was somehow successful in determining the levels social support and resilience among breast cancer women. Another important strength of this study is that it deeply analyzes the effect of social support on resilience among breast cancer women in Rawalpindi and Islamabad.

5.2. Limitations

Despite our sincere efforts few limitations need to be mentioned. The current study was cross-sectional study, which limits the establishment of causality. Recall bias and confounders may be another limitation. These study findings are based on the results from a two city in Pakistan and included only women population and single cancer type, so the findings cannot be traced to larger context. This study was purely quantitative. It would have been suggested that future studies should use mixed method approach to explore the effect of social support on resilience qualitatively as well and this help to provide in-depth information. Another drawback is small sample size. The perception of social support may vary individually depending on the time when the patient needs it and difficult conditions. Collecting data from patients in an environment where they need support such as a hospital environment is the limitation of the study.

5.3. Conclusion

The current population of study on an average showed moderate level of social support and resilience. It was found that women get more support from their partner. Demographics did not produce any effect on resilience except source of social support. The social support was significantly associated with resilience the patients were had all type of social support and were more resilient. The improved quality and quantity of social support makes the patients strong enough. More resilient patients have significantly better quality of life in almost all aspects of life so there is a need to provide all type of social support to them to fulfill their needs and to improve their general health. Cancer patient are usually suffering from stress or depression which act as confounders. Source through which a patient receives social support matters a lot. It produces significant impact on patient's health.

5.4. Recommendations

It is suggested that future studies should include a large age group to find out the effects of social support on resilience of people from different cancer groups. This could help in identifying the subgroups and an in-depth analysis of changes in resilience among different periods of life. Breast cancer patient should take part social activities in order improve health

Qualitative studies should be carried out in future to explore the root causes of low levels of self-esteem among women. Sample size should be larger.

The quality and quantity of social support should be measured by the health care professions and they should teach the patient's attendant about how social support is important for patient in order to improve their resilience.

So, regular psychiatric screening and follow up should be recommended to each and every patient regardless of the clinical profile of the disease. For the improvement of social support; counseling of spouse, family members and friends could be done along with the patient.

Intervention strategies would need to aim at involving cancer patients' relatives and friends in the disease process, considering patients' needs for support. Likewise, interventions to promote support groups are also essential, since they have been observed to be a powerful tool for cancer patients. Such strategies must also aim at improving patients' resilience and optimism so they can better cope with the disease, thus contributing to increase their quality of life.

REFERENCE

Aaronson, N. K., Ahmedzai, S., Bergman, B., Bullinger, M., Cull, A., Duez, N. J., et al. (1993). The European Organization for Research and Treatment of Cancer QLQ-C30: a quality-of-life instrument for use in international clinical trials in oncology. *J. Natl. Cancer Inst.* 85, 365–376.

Al-Azri M, Al-Awisi H, Al-Moundhri M. Coping with a Diagnosis of Breast Cancer-Literature Review and Implications for Developing Countries. *The Breast Journal*. 2009 Nov;15 (6):615-622.

Anderson, R. T., Peres, L. C., Camacho, F., Bandera, E. V., Funkhouser, E., Moorman, P. G., et al. (2019). Individual, social, and societal correlates of health-related quality of life among African American survivors of ovarian cancer: results from the African American Cancer epidemiology study. *J. Womens Heal.* 28, 284–293.

Applebaum, A. J., Stein, E. M., Lord-Bessen, J., Pessin, H., Rosenfeld, B., and Breitbart, W. (2014). Optimism, social support, and mental health outcomes in patients with advanced cancer. *Psychooncology* 23, 299–306.

Arora, N. K., Finney Rutten, L. J., Gustafson, D. H., Moser, R., and Hawkins, R. P. (2007). Perceived helpfulness and impact of social support provided by family, friends, and health care providers to women newly diagnosed with breast cancer. *Psycho oncology* 16, 474–486.

Ashing-Giwa KT, Kagawa-Singer M, Padilla GV, Tejero JS, Hsiao E, Chhabra R, et al. The impact of cervical cancer and dysplasia: a qualitative, multiethnic study. Psycho oncology 2004; 13(10):709-28.

Broeckel JA, Jacobsen PB, Balducci L, Horton J, Lyman GH. Quality of life after adjuvant chemotherapy for breast cancer. Breast Cancer Res Treat 2000; 62(2): 141-50.

Cancer Incidence and Mortality Worldwide (2015) IARC Cancer Base No. 11

Chen S, Liu J, Li Z, Su Y. The process of accepting breast cancer among Chinese women: A grounded theory study. *European Journal of Oncology Nursing*. 2017 06; 28:77-85.

Connor, K. M., and Davidson, J. R. T. (2003). Development of a new resilience scale: the Connor-Davidson resilience scale (CD-RISC). *Depress. Anxiety* 18, 76–82.

Dimillo J., Hall N., Ezer H., Schwarzer R., Körner A. (2017). The Berlin Social Support Scales: Validation of the received support scale in a Canadian sample of patients affected by melanoma. *Journal of Health Psychology*.

Due P, Holstein B, Lund R, Modvig J, Avlund K. Social relations: network, support and relational strain. Soc Sci Med 1999; 48(5): 661-73.

Doran, P., Burden, S., and Shryane, N. (2019). Older people living well beyond cancer: the relationship between emotional support and quality of life. *J. Aging Health* 31, 1850–1871.

Eicher, M., Matzka, M., Dubey, C., and White, K. (2015). Resilience in adult cancer care: an integrative literature review. *Oncol. Nurs. Forum* 42, E3–E16.

Ferlay J, Colombet M, Soerjomataram I, Dyba T, Randi G, Bettio M, et al. Cancer incidence and mortality patterns in Europe: estimates for 40 countries and 25 major cancers in 2018. *Eur J Cancer.* 2018 Nov; 103:356–87.

Fischer, I. C., Cripe, L. D., and Rand, K. L. (2018). Predicting symptoms of anxiety and depression in patients living with advanced cancer: the differential roles of hope and optimism. *Support Care Cancer* 26, 3471–3477.

Hermon C, Beral V. Breast cancer mortality rates are leveling off or beginning to decline in many western countries: analysis of time trends, age-cohort and age-period models of breast cancer mortality in 20 countries. *Br J Cancer.* 1996 Apr; 73((7)):955–60

Hilton BA. Getting back to normal: the family experience during early Stage of breast cancer. Oncol Nurse Forum 1996; 23(4): 605-14.

Hinz, A.,Friedrich, M., Kuhnt, S., Zenger, M., and Schulte, T. (2019). The influence of self-efficacy and resilient coping on cancer patients' quality of life. *Eur. J. Cancer Care* 28: e12952.

Ho P.J., Gernaat S.A.M., Hartman M., Verkooijen H.M. Health-related quality of life in Asian patients with breast cancer: A systematic review. *BMJ Open.* 2018; 8e020512.

Hsieh, Y.-P., Roh, S., and Lee, Y.-S. (2020). Spiritual well-being, social support, and depression among American Indian women cancer survivors: the mediating effect of perceived quality of life. *Fam. Soc. J. Contemp. Soc. Serv.* 101, 83–94.

Jones RA, Taylor AG, Bourguignon C, Steeves R, Fraser G, Lippert M, et al. Family interactions among African American prostate cancer survivors. Fam Community Health 2008; 31(3): 213-20.

Kornblith AB, Herndon JE, Zuckerman E, Viscoli CM, Horwitz RI, Cooper MR, et al. Social support as a buffer to the psychological impact of stressful life events in women with breast cancer.Cancer 2001; 91(2): 443-54.

Larsson J, Sandelin K, Forsberg C. Health-Related Quality of Life and Healthcare Experiences in Breast Cancer Patients in a Study of Swedish Women.Cancer Nursing. 2010 03;33 (2):164-170.

Malvia S, Bagadi SA, Dubey US, Saxena S. Epidemiology of breast cancer in Indian women. Asia-Pacific Journal of Clinical Oncology. 2017 02 09;13(4):289-295.

McCarrier KP, Bushnell D, Martin M, Paczkowski R, David R, et al. (2011) Validation and Psychometric Evaluation of A 5-Item Measure of Perceived Social Support. Health Research Associates, Inc, Seattle, WA USA; 2Eli Lilly and Company, Indianapolis, IN, USA

Meyerowitz BE, Formenti SC, Ell KO, Leedham B. Depression among Latina cervical cancer patients. Journal of Social and Clinical Psychology 2000; 19(3): 352-71.

Moore HCF. An overview of Chemotherapy-related Cognitive Dysfunction, or "Chemobrain". Once Willis Parkin D. Cancer in developing countries: Cancer Surveys. *A Cancer Journal for Clinicians*. 1994;19(20):519-61.

Rossi G, Mu Z, Rademaker AW, Austin LK, Strickland KS, Costa RLB et al. Cell-Free DNA and Circulating Tumor Cells: Comprehensive Liquid Biopsy Analysis in Advanced Breast Cancer. Clin Cancer Res. 2018 Feb 1; 24 (3):560-568.

Sajadian A, RajiLahiji M, Motaharinasab A, Kazemnejad Eklily A, Haghighat S. Breast Cancer Coping Strategies after Diagnosis: A Six-month Follow-up. Multidisciplinary Cancer Investigation. 2017 Nov 10;1(4):12-16.

Shoukry M, Broccard S, Kaplan J, Gabriel E. The Emerging Role of Circulating Tumor DNA in the Management of Breast Cancer.Cancers (Basel).2021; 13 (15):3813. Published 2021 Jul 29.

Solin LJ, Gray R, Baehner FL, et al. A multigene expression assay to predict local recurrence risk for ductal carcinoma in situ of the breast. J Natl Cancer Inst. 2013; 105:701-710.

So WKW, Chow KM, Chan HYL, Choi KC, Wan RWM, et al. (2014) Quality of life and most prevalent unmet needs of Chinese breast cancer survivors at one year after cancer treatment. *Eur J Oncol Nurs* 18: 323e328.

Tan M, Karabulutlu E. Social support and hopelessness in Turkish patients with cancer. Cancer Nurs 2005; 28(3): 236-40.

Weihs KL, Enright TM, Simmens SJ (2008) Close relationships and emotional processing predict decreased mortality in women with breast cancer: preliminary evidence. Psychosomatic medicine 70(1): 117-124

Yu M, Bardia A, Aceto N et al. Ex vivo culture of circulating breast tumor cells for individualized testing of drug susceptibility. Science. 2014 Jul 11; 345(6193): 216–220.

Zimet, GD, Dahlem NW, Zimet SG, Farley GK (1988) The multidimensional scale of perceived social support. Journal of personality assessment 52(1): 30-41

ANNEXURE 1

Informed Consent Form

I Attiya Najeeb Abbasi, student of final semester of MSPH, Alshifa School of Public Health, Alshifa Eye Hospital, Rawalpindi. I am doing research on effect of social support on resilience among breast cancer patients in public and private hospitals of Rawalpindi and Islamabad.

Purpose of the research

The purpose of this research is to assess resilience among Breast cancer women in that area. In addition to determine the association of resilience with socio-demographic and social support among breast cancer patients in Rawalpindi and Islamabad

Participation

I do not anticipate that taking this study will contain any risk or inconvenience to you. Your participation is strictly voluntary and you may withdraw your participation at any time without penalty. I request you to answer the question as honestly as possible it will take no longer than 20 minutes to complete a questionnaire. All information collected will be used only for my research and will be kept highly confidential. Your identity and your responses will not be identifiable; all data will be stored anonymously. As this is solely a student project no incentive will be provided. Once study is completed, I would be happy to share the results with you if you desire. Thank you for agreeing to participate in this study. Your feedback is important.

Consent

I have read and understand the information sheet and agree to take part in the study.

Participant's signature_____ **Date**_____

ANNEXURE II

Data Collection Tool

Questionnaire to Assess Effect of Social Support on Resilience among Breast cancer patients

Age (in years)?	**Weight(kg):** 40-50 51-60 Above 60
Marital status: Married Unmarried Other	**Education status:** Under Graduate Graduate
Employment status: Employed Unemployed	**Monthly Family income:**
Housing status: Tenant Owner	**Resident of:** Rural area Urban area
Family status: Nuclear Joint family	**Did anyone in your family have breast cancer?** Yes no
How long have you been taking the treatment? **6 months** 1 year Greater than 1 year	**Medical treatments** Surgery/Chemotherapy Chemotherapy/Radiation therapy Combined therapies
Who do you get the most social support? **parents** Spouse/children other	**Stage of Breast cancer** Stage 1 Stage 2 Stage 3

Section-B Social Support Assessment:

Below are the statements about assessment of different types of social support. For each one, circle the number whether you are strongly disagreed, somewhat disagree, somewhat agree, strongly agree with these statements.

S#	Items	strongly disagree (1)	somewhat disagree (2)	somewhat agree (3)	strongly agree (4)
1	There are some people who truly like me				
2	Whenever I am not feeling well, other people show me that they are fond of me.				
3	Whenever I am sad, there were people who cheer me up.				
4	There are people who comforted me during bad situation.				
5	There are people who showed me that he/she loves and accepts me				
6	There is a person who made me feel valued and important				
7	There are people who expressed concern about my condition.				
8	There was a person who assured me that I can rely completely on him/her.				
9	People were there who encouraged me not to give up.				
10	When I am worried, there is someone who helps me.				
11	There are people who offer me help when I need it.				
12	When everything becomes too much for me to handle, others are there to help me.				
13	Someone was there when I needed him/her.				
14	Someone was there who took care of things I could not manage on my own.				
15	People helped me find something positive in my situation.				
16	There was person who suggested activities that might distract me.				

Assessment of Resilience:

Please read the following statements below about resilience and circle the number that best represents how you feel about the statement.

Items	Not true at all (0)	Rarely true (1)	Sometimes true (2)	Often true (3)	True nearly all the time (4)
I am able to adapt when changes occur.					
I have one close and secure relationship					
Sometimes fate or God helps me.					
I can deal with whatever comes my way					
Past successes give me confidence.					
I try to see the humorous side of things when I am faced with problems					
Having to cope with stress can make me stronger.					
I tend to bounce back after illness, injury or other hardships.					
I believe most things happen for a reason.					
I make my best effort, no matter what.					
I believe I can achieve my goals, even if there are obstacles.					
Even when hopeless, I do not give up.					
In times of stress, I know where to find help.					
Under pressure, I stay focused and think clearly.					
I prefer to take the lead in problem-solving.					
I am not easily discouraged by failure.					
I think of myself as a strong person when dealing with life's challenges and difficulties					
I make unpopular or difficult decisions.					
I am able to handle unpleasant or painful feelings like sadness, fear, and anger					
I have to act on a hunch					
I have a strong sense of purpose in life					
I feel like I am in control					
I like challenges.					
I work to attain goals					
I take pride in my achievements					

ANNEXURE III

IRB letter

AL-SHIFA SCHOOL OF PUBLIC HEALTH
PAKISTAN INSTITUTE OF OPHTHALMOLOGY
AL-SHIFA TRUST, RAWALPINDI

MSPH IRB/14-15
27th Sep, 2022

TO WHOM IT MAY CONCERN

This is to certify that **Attiya Najeeb Abbasi** D/O **Muhammad Najeeb Abbasi** is a student of Master of Science in Public Health (MSPH) final semester at Al-Shifa School of Public Health, PIO, Al-Shifa Trust Rawalpindi. He/she has to conduct a research project as part of curriculum & compulsory requirement for the award of degree by the Quaid-i-Azam University, Islamabad. His/her research topic, which has already been approved by the Institutional Review Board (IRB), is **"Effect of social support on resilience among breast cancer patients in Rawalpindi and Islamabad".**

Please provide his/her necessary help and support in completion of the research project. Thank you.

Sincerely,

Dr. Ayesha Babar Kawish
Head
Al-Shifa School of Public Health, PIO
Al-Shifa Trust, Rawalpindi

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ANNEXURE IV

Gantt chart

Activities	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Literature review							
Synopsis writing and IRB approval							
Pilot testing							
Data collection and entry							
Data analysis							
Write-up							
Thesis submission							

ANNEXURE V

Budget

Budget item	Transport	Stationary and internet	Printing	Publishing
Questionnaire	Rs. 3000	Rs.1000	Rs. 6000	
Pilot study	Rs. 2000	Rs. 2000		
Data collection	Rs.6000	Rs.1500		
Thesis write up	Rs. 2000	Rs. 5000	Rs. 4000	Rs.5000
Total expenditure	13000	9500	10000	5000
Grand total	Rs. 37,500			