

Survey on Patients Undergoing Treatments For Cervical, Endometrial and Ovarian Cancer



**A DISSERTATION SUBMITTED TO BRAC UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
BACHELOR OF SCIENCE IN BIOTECHNOLOGY**

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Declaration

I hereby declare that the thesis project titled “**Survey on Patients Undergoing Treatments of Cervical, Endometrial and Ovarian Cancer**” has been written and submitted by me, Anika Nawar and has been carried out under the supervision of S M Rakib-Uz-Zaman, Lecturer, Biotechnology Program, Department of Mathematics and Natural Sciences, BRAC University, Dhaka.

It is further declared that solely I have composed this thesis and it has not been submitted, in whole or in part, in any previous institution for a degree or diploma. All explanations that have been adopted literally or analogously are marked as such.

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Acknowledgement

First and foremost, I would like to express my thanks to Almighty Allah because He has given me the opportunity and strength to finish this research. I am also thankful for His blessings to my daily life, good health and healthy mind. I acknowledge my esteem to Professor **A F M Yusuf Haider** and Chairperson of MNS Department and Professor **Mahboob Hossain** for allowing me and encouraging me to complete my undergraduate thesis.

My regards, gratitude, indebtedness and appreciation go to my respected supervisor **S M Rakib-Uz-Zaman**, Lecturer, Biotechnology Program, Department of Mathematics and Natural Sciences, BRAC University for his constant supervision, constructive criticism, expert guidance, enthusiastic encouragement to pursue new ideas and never-ending inspiration throughout the entire period of my research work. I would like to thank and express my deepest gratitude for guiding me in my report writing and providing time to time suggestions regarding setting of experimental designs, interpretation of results and subsequent directions for the whole work without being a bit of impatient. It would have been impossible to submit my report without his cordial help.

My respectful

Similarly, profound gratitude goes to my respective faculty members **Kashmery Khan** and **Eusra Mohammad**, who have truly been dedicated mentors. I am thankful to them for sharing their valuable time and knowledge regarding the whole survey.

I would like to extend my appreciation to respected **Dr. Zahidul Hasan** Professor of Microbiology, Square Hospital and Oncologist **Dr. Latifa Sultana** for their suggestions, informations and moral support during my work.

I would like to especially thank **Romi Marina Geroqe**, **Tamannyat Binte Eshaque** and **Anika Bushra** for their constant help and support throughout this entire project; without their help this would have been very difficult for me.

Finally, I would like to extend my gratitude to my parents, without whose guidance this endeavor would have been impossible. I would also thank the members of my family and to my friends for their prayerful concerns and supports.

Anika Nawar

January 2019

Abstract:

Cancer is a disease with an abnormal cell growth and it can invade or spread from one organ to another. There are some common symptoms noticed for cancer like abnormal bleeding, lumps, weight loss and change in bowel movement. Using tobacco is one of the major causes for cancer and that causes 22% of cancer. In addition to that, poor diet, obesity, alcohol consumption may cause 10% of cancer. Moreover, 15% of cancers occur due to some viruses like *Helicobacter pylori*, hepatitis B, hepatitis C, human papillomavirus infection, Epstein–Barr virus and human immunodeficiency virus (HIV). Genetic defects can also cause cancers and the chances are 5-10%. Screening test is most common and initial test for detection of cancer. Some treatments are followed to control cancer as most of the time this disease cannot be cured. Radiotherapy, chemotherapy, surgery, hormone therapy, lesser therapy, immunotherapy and some oral medicines are used for cancer treatment. In 2018, 18.1 million new cancer cases and 9.6 million cancer deaths were stated. In the same year worldwide an estimated 570,000 cases and 311,000 deaths occur by cervical cancer. Cervical cancer is now the fourth most diagnosed cancer and fourth leading cause of death among women in whole world. Ovarian cancer is the seventh most commonly diagnosed cancer and the eighth most common cause of death from cancer over the world. Ovarian cancer has only 30% of cure rate. For this survey data was collected from 70 patients with different gynecological cancer and then statistical analyzing was done. The result of this survey showed 94.29% patients are married and 61.43% patients are in between age 35-55. Both this findings from the patients selected for this survey indicated that the sexually active women have higher chance to have any of the gynecological cancer. The result of this survey also showed that 61.43% women are affected by passive smoking. Another finding showed 60% of patients used to take contraceptive pills for long time. This result implied that taking contraceptive pills for long time could be a cause of any of these gynecological cancers. There are no patients from this survey who took vaccines against cervical cancer and none took any psychological help for fast recovery. Almost 50% of the patients believed in homeopathy and

herbal treatments, which actually did not work on these diseases. The survey shows that side effects are most prominently expressed in patients above the age of 56 years and patients with stage-3 and stage-4 cancer. Therefore, the findings from this survey indicates that married and middle-aged women should be more careful to their health and avoid contraceptive pills, passive smoking and take vaccines for preventing and controlling the disease in a better way.

CHAPTER-1

Introduction

1.1 Background:

Cancer that is a group of disease with an abnormal cell growth and it can invade or spread from one organ to another. There are two type of cancer one is benign tumor that not spread out through the body and another is malignant which spread through the body. Cancer has so many sign and symptoms that depend on which type of cancer it is or where the disease takes place. Besides that some common symptoms are present and that are abnormal bleeding, lumps, weight loss and change in bowel movement. There are over 100 types of cancer affects human. Cancer has so many reasons behind itself. Use of tobacco is one of the reasons and 22% cancer caused for that. Moreover Poor diet, obesity, having alcohol caused 10% of cancer. Besides that 15% cancers occurred by some viruses like *Helicobacter pylori*, hepatitis B, hepatitis C, human papillomavirus infection, Epstein–Barr virus and human immunodeficiency virus (HIV). In addition, genetic defects are another cause of cancers and there are 5-10% cancers caused for genetic defects. There are some techniques for detection of cancer. From those techniques screening test is most common and initial test. After that medical imaging and biopsy done to confirm the disease. There are some treatments for controlling cancer as most of the time this disease cannot be cured. Radiotherapy, chemotherapy, surgery, hormone therapy, lesser therapy, immunotherapy and some oral medicines used for treating cancer. Around 30-50% of cancers can be prevented by avoiding risk factors and by taking available vaccines. Cancer is always a critical problem for human being. In 2018, 18.1 million new cancer cases and 9.6 million cancer deaths are stated. About 20% of males and 17% of females will get cancer at some point in time while 13% of males and 9% of females will die from it. Cancer incidence rate is 20% higher in males than in females also the death rate of cancer is 50% higher in males than in females. Not only adults but also children are also suffering for cancers. Each year worldwide 300000 children diagnosed with cancer. There is always more risk for the people lives in low income or middle-

income countries. As there are less medical facilities than high-income countries and also people have less economical support for the treatment. Approximately 70% of deaths from cancer occur in low- and middle-income countries. More than 90% of high-income countries reported treatment services are available compared to less than 30% of low-income countries. Only 1 in 5 low- and middle-income countries have the necessary data to drive cancer policy. Besides that in high-income countries more than 80% of children with cancer are treated, but in most of the low- and middle-income countries only about 20% children are treated. In our country cancer is very common and life threatening disease. In Bangladesh each year approximately 200000 incidences occurred and 150000 people died for cancer. Moreover approximately 800000 people have high chance to have cancers in Bangladesh. According to World Health Organization new cases of cancer have been estimated at 167 per 100000 populations in Bangladesh. In Bangladesh women have high risk of gynecological cancers like cervical, ovarian endometrial cancers. Cervical cancer is most common cancer among Bangladeshi women. There are 24% women have cervical cancer, 6% women have ovarian cancer. So this is not so good thing to say that the rate of these cancers getting high day by day. Women are not so concern and conscious about these diseases. They ignored the primary symptoms and affected by advance stage of cancer. For all these reasons this problem rising day by day and till now most of the people are not so aware about this disease. Most of the women in our country feel ashamed to tell or discuss about the gynecological problems. Besides that parent, husband and other family members of women also try to hide these types of problems from others. For this reason they ignore most of the primary symptoms and finally when the cancer spread through out the body than it diagnosed and treated but most of the time survival rate is very low. Woman also feels ashamed to tell their problems even with their doctors. In our country, people think that those gynecological problems are very shameful things to share and it better to keep secret from others. By this way they risk their life and they are not conscious about this thing.

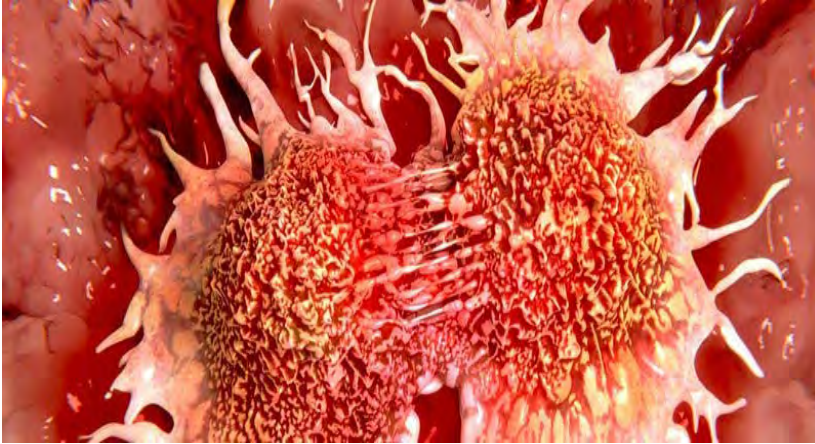


Fig-1.1: cancer cells (Source: Newman, T., 15 July, 2017)

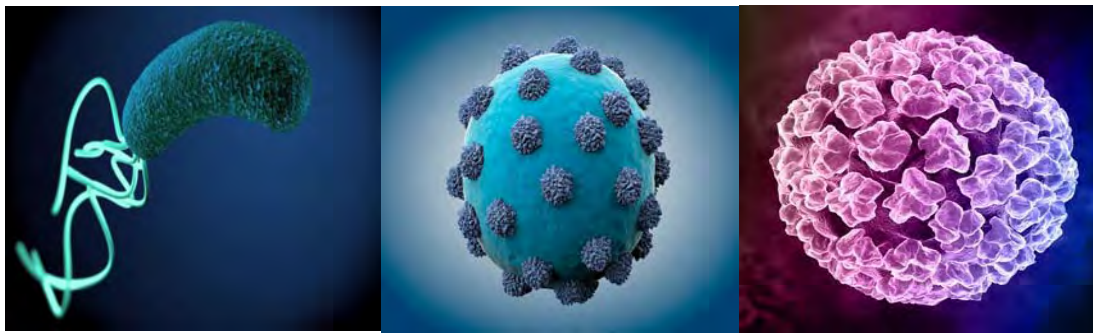


Fig-1.2: *Helicobacter pylori*, *Hepatitis C*, and *Human papilloma virus* (Source: National Cancer institute, March, 2014)

1.2 Aims and objectives:

There are some aims and objective of my studies that are given below-

- To find out at which stage patients are diagnosed with the disease.
- To determine the occurrence of side effects among patients against cervical, ovarian and endometrial cancer.
- To find out at what age patients are diagnosed with the disease.
- To find out the most efficient treatments against cervical, ovarian and endometrial cancer.
- To determine if patients took vaccines or not to prevent cervical cancer.
- To find out if patients took contraceptive pills or not.

- To create awareness among people against cervical, ovarian and endometrial cancers.

1.3 Cervical cancer:

Cervical cancer is basically abnormality in cervix. Most of the women have a risk of having this cancer. The chance of this cancer is getting higher day by day. One of the reason for this is women are not so careful about their health. Cervical cancer is second only to breast cancer as the most common form of cancer among women (Statistics of the National Cancer Institute, 2010).

Human papilloma virus is one of the major causes for having cervical cancer. Almost in 90% case HPV virus did not lead to cancer and the effect automatically disappear after one to two years. Almost every woman attacked by HPV more than one in her entire life. From them some develop cervical cancer. There are 30 different type of HPV strain present can cause cervical cancer (Burd, E. M. (2003). From those 30 types most risky types are type 16 and type 18. Almost 50-55% cases have type 16 HPV and 15-20% case have type 18 HPV. Younger women means less than 40 years, HPV was present in 89% of adenocarcinomas, in the other hand women aged 60 years and older, HPV was observed in only 43% (Burd, E. M. (2003).

Papillomaviruses are members of the Papovaviridae family. HPV is a relatively small, nonenveloped virus and 55 nm in diameter. It has an icosahedral capsid composed of 72 capsomers, which contain at least two capsid proteins, L1 and L2. Each capsomer is a pentamer of the major capsid protein, L1 (Baker, T. S., W. W. Newcomb, N. H. Olson, L. M. Cowser, C. Olson, and J. C. Brown. 1991). Each virion capsid contains several copies of the minor capsid protein, L2 (Sapp, M., C. Volpers, M. Muller, and R. E. Streck. 1995). The HPV genome consists of a single molecule of double-stranded, circular DNA containing approximately 7,900 bp associated with histones (Favre, M. 1975). All open reading frame (ORF) protein-coding sequences are restricted to one strand. The genome is functionally divided into three regions. The first region is a noncoding upstream regulatory region of 400 to 1,000 bp, which has been referred to as the noncoding region, the long control region (LCR), or the upper regulatory region. This region contains the p97 core promoter along with enhancer and silencer sequences that regulate DNA replication by controlling the transcription of the ORFs. This region also

contains the highest degree of variation in the viral genome (Apt, D., R. M. Watts, G. Suske, and U. Bernard. 1996). The second region is an early region, consisting of ORFs E1, E2, E4, E5, E6, and E7, which are involved in viral replication and oncogenesis. The third is a late region, which encodes the L1 and L2 structural proteins for the viral capsid. By definition, the nucleotide sequences of the E6, E7, and L1 ORFs of a new HPV type should be no more than 90% homologous to the corresponding sequences of known HPV types (Torrise, A., A. Del Mistro, G. L. Onnis, F. Merlin, R. Bertorelle, and D. Minucci. 2000). HPVs have further been classified into subtypes, when they have 90 to 98% sequence similarity to the corresponding type and variants when they show no more than 98% sequence homology to the prototype. Some naturally occurring variants have different biological and biochemical properties important in cancer risk.

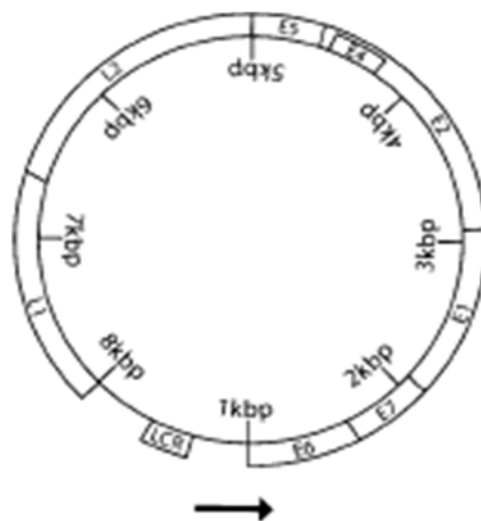


Fig-1.3: Circular DNA genome organization of HPV virus (Burd, E. M., 2003).

Skin to skin contact can primarily transmit HPV. Besides that an individual who has multiple sexual partners has higher chance of infecting through HPV. HPV is very resistant to heat and desiccation. HPV can also transmit through nonsexual way via fomites, such as by prolonged exposure to shared contaminated clothing (Roden, R. B., D. R. Lowy, and J. T. Schiller. 1997). Besides that HPV can also be transmitted by contact with infected labial, scrotal, or anal tissues. Except this sexual and other transmission age is also an important factor for having the risk of HPV infection (Adam, E., Z. Berkova, Z. Daxnerova, J. Icenogle, W. C. Reeves, and R. H. Kaufman. 2000). Most cervical cancers arise at the squamocolumnar junction between the columnar epithelium of the endocervix and the squamous epithelium of the ectocervix. At this

site, there are continuous metaplastic changes. The highest risk of HPV infection coincides with greatest metaplastic activity. Usually greatest metaplastic activity occurs at puberty and first pregnancy and declines after menopause. HPV infection is most frequent in sexually active young women like 18 to 30 years of age. After 30 years the risk decreases (Burd, E. M. 2003).

Besides that *Human papilloma virus* there are some more cause to discuss. Those causes are having too much birth-control pills, not using condoms during sex, multiple partners, early marriage etc.

Some primary symptoms for this cancer is smelly white discharge, abnormal bleeding during sexual intercourse, intermenstrual vaginal bleeding, post-menopausal vaginal bleeding, post-coital vaginal bleeding, offensive vaginal discharge and lower abdominal pain (Mwaka, A. D., Orach, C. G., Were, E. M., Lyratzopoulos, G., Wabinga, H., & Roland, M. 2016), irritation or pain during urination, long time menstruation, frequent urine pressure, fast weight loose, tiredness, etc. All these symptoms can early detected if people are little more conscious about their health but unfortunately they are not that aware about their health. For that reason most of the time women are diagnosed with 3 or 4-degree cervical cancer. For most of the people these symptoms are shameful thing to share. As well as some symptoms are sometimes natural things for women so that they cannot distinguish between the symptoms and natural occurrence. All these reason most of the time women cannot detect their symptoms.

Cervical Cancer

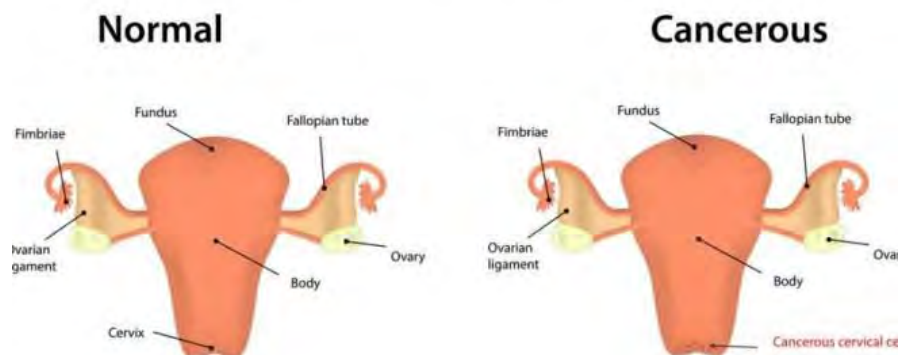


Fig-1.4: difference between normal cervix and cancerous cervix (TheHealthSite, 8 November 2015)

There are different screening systems for identifying cervical cancer. For detecting if a woman has this cancer or not there is a test called Papanicolaou (pap) test, which can detect the changes of cells cervix. The Pap test or Pap smear is performed to detect cervical cancer. A doctor will insert a speculum into the vagina to widen it and cells from the cervix will be collected for analysis in the laboratory. Abnormal or mutated cells may cause or indicate cervical cancer. Usually the woman age above 21 and had already three times sexual intercourse should undergo through Pap smear at least one or two year interval. Besides that woman above 30 years need annual Pap testing. After the annual observation if there is no abnormality found than at least after three-year interval Pap test should be performed. Woman above 70 years need three years interval Pap testing if they have no abnormalities last ten years. There is another testing method to determine HPV through HPV DNA testing method. From this method if there is any HPV DNA present in the body or not that checked. To detect the oncogenic HPV most of the time PCR or Hybrid capture ii method used (Mandelblatt, J. S., Lawrence, W. F., Womack, S. M., Jacobson, D., Yi, B., Hwang, Y. T., Shah, K. 2002). There are two more screening strategies are currently endorsed by US-based guideline groups: one is, triennial cytology for women aged 21 to 65 years, and another is triennial cytology for women aged 21 to 29 years followed by cytology plus testing for high-risk human papillomavirus types every 5 years for women aged 30 years and older (Wiley, D. J., Monk, B. J., Masongsong, E., & Morgan, K. 2004). All women can have this cancer but mostly 35-40 aged women have more risk of this disease.

In recent years a vaccine launched for cervical cancer protection called HPV vaccines. There are two types of HPV vaccines are licensed in the United States. Both are composed of type-specific HPV L1 protein, the major capsid protein of HPV. Expression of the L1 protein using recombinant DNA technology produces noninfectious virus-like particles (VLPs). Quadrivalent HPV vaccine (HPV4) contains four HPV type-specific VLPs prepared from the L1 proteins of HPV 6, 11, 16, and 18. Bivalent HPV vaccine (HPV2) contains two HPV type-specific VLPs prepared from the L1 proteins of HPV 16 and 18. Both vaccines are administered in a 3-dose series. Mostly this HPV4 or HPV2 vaccines are recommended for females aged 11 or 12 years and with HPV4 for males aged 11 or 12 years. Vaccination also is recommended for females aged 13 through 26 years and for males aged 13 through 21 years who were not vaccinated previously. Males' aged 22 through 26 years may be vaccinated (Markowitz, L., Dunne, E.,

Saraiya, M., Chesson, H., Curtis, C., Gee, J., & Bocchini, J. 2014). This vaccine works on one individual maximum for 9 years. For developed country this vaccine is not so costly and easily available. In the other hand this vaccine is little costly for the common people in our country as each dose of this vaccine is taka 5-6 thousand. This vaccine is also not easily available in our country and other developing and underdeveloped country like ours.



Fig-1.5: Human papilloma virus vaccine (source: Tees, P., 2015)

In 2018, approximately 570,000 cases and 311,000 deaths occur by cervical cancer over the world. This cancer is now fourth most diagnosed cancer and fourth leading cause of death among women in whole world (F. Bray, Jacques Ferlay, Isabelle Soerjomataram, Siegel; R. L., Torre; L. A., & Jemal, A. 2018). Approximately 90% of deaths from cervical cancer occurred in low- and middle-income countries (World Health Organization, 2018).

According to a study of International Agency for Research on Cancer (IARC), in Bangladesh about 11,956 women are diagnosed with cervical cancer in the country every year and over 6,582 die of the disease (The Daily Star, 13 January 2018). According to doctors, every year in Bangladesh 18,000 new women affected by cervical cancer. Besides that 12,000 women died for cervical cancer each year and each day 28 patients died for this. In Bangladesh it is the most common cancer. Among women cervical cancer is in highest rank in Bangladesh.

For cervical cancer surgery and chemotherapy is the main treatment. Most of the surgeries are hysterectomy. In very few cases doctors use radiotherapy or other treatments. Most of the radiotherapy is brachytherapy.

As people in our country is not so aware of this matter so that most of them ignore the first symptoms of this cancer and some of them are not recognize the abnormality happened in there body. The survival rate is decreased by 50% because of those reasons. Moreover there is more than 95% chance of survival rate for them who started treatment in a very first stage.

However, cervical cancer is more common in women older than 35 years, suggesting infection at a younger age and slow progression to cancer. Persistence of infection is more common with the high-risk oncogenic HPV types and is an important determinant in the development of cervical cancer.

1.4 Ovarian cancer:

Ovarian cancer is most deadly gynecological cancer for woman. The abnormal cell development in ovary cause ovarian cancer. There are two ovaries in female reproductive system, one in each side of uterus. Ovaries produce egg as well as hormones like estrogen and progesterone. Ovarian cancer has only 30% of cure rate (Lengyel, E. 2010).

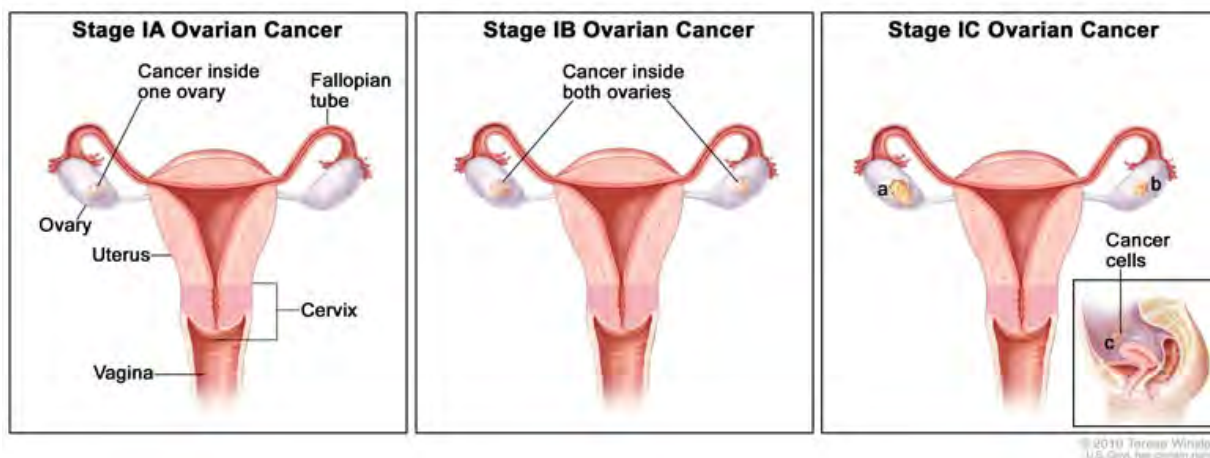


Fig-1.6: Different stages of ovarian cancer. (Source: UCSF, 13 November 2013)

The cause of ovarian cancer is not so clear still now. There are 15% chances of having ovarian cancer through genetically transformation of hereditary mutation in DNA from parents. Recent studies show that the two most common cancer syndromes to cause ovarian cancer are Hereditary Breast and Ovarian Cancer Syndrome (HBOC). It occurs due to mutations in the *BRCA1* and *BRCA2* genes. Another cause followed by Lynch syndrome, due to mutations in the *MLH1*, *MSH2*, *MSH6*, *PMS2* and *EPCAM* genes (UCSF, November 13, 2013). As ovarian cancer can be inherited by genetic mutation of *BRCA1* and *BRCA2*, which is also responsible for breast cancer and as we know that second highest rating cancer is breast cancer among women. About 90% of all hereditary epithelial ovarian tumors accounted for *BRCA* germline mutations (Russo, A., Calò, V., Bruno, L., Rizzo, S., Bazan, V., & Di Fede, G. 2009, January)

Ovarian carcinoma could originate from any of three potential sites and they are the surfaces of the ovary, the fallopian tube, or the mesothelium-lined peritoneal cavity (Lengyel, E. 2010). So there are three types of tumors grow in ovarian cancer. About 90% cases showed epithelial tumors and other 10% could be stromal tumors or germ cell tumors.

Ovarian cancer is mostly occur in women with 50-60 age because may be in that age menopause occur, which sometimes cause ovarian cancer. Inherited mutated gene can also cause ovarian cancer. If parents have breast cancer or ovarian cancer, *BRCA1* and *BRCA2* gene can transfer to the offspring and increase the risk of having ovarian cancer. Estrogen hormone replacement therapy can also increase the risk of ovarian cancer.

There are few symptoms for ovarian cancers. Bloating, Pelvic or abdominal pain, Difficulty eating or feeling full quickly, Urinary symptoms (urgency or frequency) are some of the symptoms. Most of the symptoms are very common and regular for women so that they do not recognize the symptoms of ovarian metastasis. There are some other symptoms for ovarian cancer reported by women with ovarian cancer. These symptoms include fatigue, indigestion, and back pain, pain with intercourse, constipation and menstrual irregularities.

Worldwide, ovarian cancer is the seventh most commonly diagnosed cancer and the eighth most common cause of death from cancer (Tworoger, S. S., Shafirir, A. L., & Hankinson, S. E., 2017).

The Globocan study estimated there were 239,000 cases and 152,000 deaths from the disease (Reid, F., Bhatla, N., Jones, A., 2018).

In Bangladesh ovarian cancer is an alarming health problem among women. The annual mortality rate per 100,000 people from ovarian cancer in Bangladesh has increased by 40.3% since 1990, an average of 1.8% a year (Hoque, M. E, Karim, S., Siddiqui, M. M.R., Ahmed, T., 2017).

Usually for ovarian cancer patients the survival rate is only 5 years but in some cases survival rate may increased. If ovarian cancer detected in early stage it might be curable.

For early detection of ovarian cancer a woman who has the signs and symptoms of ovarian cancer must do perform a complete pelvic exam, a transvaginal or pelvic ultrasound, radiological tests, such as a transvaginal ultrasound or CT scan, and a CA-125 blood test. Used individually, these tests are not definitive; they are most effective when used in combination with each other. If a woman has a strong family history or a genetic predisposition such as a *BRCA* mutation doctors may use some of these tests to monitor a woman.

Most of the patients undergone through hysterectomy as surgery and take chemotherapy. Usually patients are not receiving radiotherapy for ovarian cancer treatment.

Ovarian cancer is now an alarming problem for women and mostly for middle age women. The woman is age of 45 years to above have 90% chances to have ovarian cancer. The symptoms are not so noticeable in ovarian cancer so that every woman should be careful about any little change in their health.

1.5 Endometrial cancer:

Endometrial cancer is that cancer, which arise in the endometrium means the lining of womb. Mostly this cancer occurs after menopause means in older age. It is very rare on reproductive women (Cook, L. S., Meisner, A. L. W., & Weiss, N. S. 2017).

From a histological and molecular pathology perspective there are at least two major types of endometrial tumors (Purdie, D. M. 2003). Type I endometrial cancer is estrogen-dependent with endometrioid histology, carries a better prognosis, and represents over 80% of these cancers. Type II endometrial cancer is non-estrogen-dependent, presenting with higher risk histologic patterns with a 5-year survival of 53% to 62% (Wang, K., Dizon, D. S. December 16, 2016).



Fig-1.7: Advanced stage of endometrial cancer. (Source: Wang, K., Dizon, D. S., 2016)

Endometrial cancer has some symptoms like Vaginal bleeding after menopause, bleeding between periods, an abnormal, watery or blood-tinged discharge from your vagina, pelvic pain. These symptoms are also ignorable that is why women are not aware of these symptoms and this disease spread over the body.

There are some risk factors for having this cancer. At first hormonal imbalance, if our body produces more estrogen than progesterone in those cases the risk can be arise. This hormonal imbalance can occur for many reasons like polycystic ovary syndrome, obesity and diabetes. Besides that after menopause if woman take hormones means estrogen but no progesterone also increase the risk of having endometrial cancer. Hormone therapy for breast cancer is another risk factor for having endometrial cancer. More years of menstruation can also cause endometrial cancer because more year of menstruation means more years of estrogen exposure.

The surgical management of endometrial cancer has expanded to include laparoscopic surgery. Most of the time as a primary treatment Hysterectomy is done. Besides that chemotherapy also suggested for the treatment of endometrial cancer.

After diagnosis with endometrial cancer a patient can survive minimum 5 years. Usually this cancer occurs after 50 year and mostly occurs between white women but still there is always a risk to having this cancer. So women should take proper care of their health and be always conscious about the symptoms.

1.6 Literature review:

Cancer is a group of disease characterized by uncontrolled cell growth in most of the organ of our body. If it is not controlled in accurate time it lead to death. So it is a life threatening disease for mankind. There are both internal and external reasons for having cancers. The internal reasons are- inherited mutation, hormone imbalance, immune conditions, mutation occur from metabolism etc. The external reasons are- tobacco, infectious organisms like viruses, radiations, chemicals, alcohol etc. There are various types of cancer treatment give to the patients like surgery, chemotherapy, radiotherapy, hormone therapy, oral medicines etc. (American Cancer Society, & Society, A. C., 2010). In this article authors discuss about different type of cancers and the reason behind it. As well as they discuss about the treatments of cancers. All these information is for give people an idea about cancers, cancer treatments and the risk factors, which may avoid sometimes for prevention.

(Elamurugan S, Rajendran P, Thangamani S., 2016) said in their paper that cervical cancer is the most common cause of cancer-related deaths among women worldwide. It becomes a deadly disease once it reaches the invasive stages but is very much preventable if detected in its early stages. The most common screening method for cervical cancer is Papanicolaou (Pap) test, which can prevents the development of cervical cancer by recognizing the precancerous state. The aim of their paper is to determine the awareness and attitude and practice of Indian women toward screening for cervical cancer. They follow Cross-sectional survey with pretested

questionnaires on 200 women belonging to two categories comprising 100 high school teachers and 100 housewives for their survey. The questionnaire comprised 15 questions. Four questions were framed to gather the sociodemographic details and the remaining 11 were pertaining to knowledge, attitude, and practice (KAP). The results were tabulated as simple mean and percentage. KAP score was calculated by selecting seven questions from the questionnaire. Scores “1” and “0” were given for positive and negative responses, respectively. In their result they got to know that all the teachers had heard about cervical cancer, 98% about the availability of some screening method for cervical cancer, and 79% about Pap smear. Among the housewives, 72% knew about cervical cancer, 70% about the availability of screening methods, and 38% had heard about Pap smear. The practice of cervical cancer screening methods was not adequate among teachers and housewives. All these results from their survey give an overview of what are the thinking general people about the importance of knowing about cancers. As well as from this article other researchers may understand how to do survey in any topic.

In another article authors said that cervical cancer remains a major cancer-related cause of death of women in undeveloped countries. More than 470,000 new cases of cervical cancer are diagnosed each year, and worldwide more than 200,000 died of this disease 80% in the developing countries. In China, approximately 130,000 new cases of cervical cancer are diagnosed each year, and more than 53,000 women die from it. Treatment for cervical cancer is hysterectomy combined with radiotherapy and chemotherapy, or hysterectomy alone. With these treatments, ~80–90% of cervical cancer patients with stage-1- stage-2 can be cured, and 60% of patients with stage-3. As for other cancers, treatments for cervical cancer often cause some unwanted side effects like mental stress, digestive and urinary dysfunctions, menopausal symptoms, infertility, and sexual dysfunction. From them some of the side effects are chronic and significantly affect patients’ normal life and those side effects are- small bowel obstruction, stress urinary incontinence, vaginal atrophy, and limb swelling due to lymphatic blockage (Zhou W, Yang X, Dai Y, Wu Q, He G, Yin G. 2016). In this paper the authors said that the increasing rate of cervical cancers and the side effects of the treatments. Besides that in this article they said that cervical cancer could be curable if it is early diagnosed and treated properly.

(Cutts, F. T., Franceschi, S., Goldie, S., Castellsague, X., De Sanjose, S., Garnett, G., Markowitz, L., 2007, September) said in their article that human papillomaviruses (HPV) is the major risk of cervical cancer that is most frequent in developing countries. Approximately 70% of all cervical cancers caused by most common oncogenic HPV genotypes 16 and 18. In the other hand types 6 and 11 do not contribute to occur high-grade precancerous lesions or cervical cancer, but do cause laryngeal papillomas and most genital warts. HPV is highly transmissible, with peak incidence soon after the onset of sexual activity. In this article authors also talking about vaccines of HPV, which may prevent the cervical cancer. They said that A Quadrivalent (types 6, 11, 16 and 18) HPV vaccine has recently been licensed in several countries following the determination that it has an acceptable benefit/risk profile. After different trial they said, the vaccine prevented 100% of moderate and severe precancerous cervical lesions associated with types 16 or 18 among women with no previous infection with these types. There are usually two types of vaccines used, type-16 and type-18. Both vaccines are prepared from non-infectious, DNA-free virus-like particles produced by recombinant technology and combined with an adjuvant. This vaccine has three doses to take that induce high levels of serum antibodies in virtually all vaccinated individuals. The authors also included that in women who have no evidence of past or current infection with the HPV genotypes in the vaccine, both vaccines show > 90% protection against persistent HPV infection for up to 5 years after vaccination, which is the longest reported follow-up so far. Vaccinating at an age before females are exposed to HPV give the best result. Since HPV vaccines do not eliminate the risk of cervical cancer, cervical screening will still be required to minimize cancer incidence. From this article some information about HPV and vaccine of HPV come out. All these information is for people to know about the vaccine and how it worked.

(Ovarian Cancer Australia, Friday 19 October 2018), this article informed that approximately 239,000 women are diagnosed with ovarian cancer each year and less than half will survive to five years around the whole world. Studies have shown that around 15% of women die within two months of their diagnosis, with age, emergency presentation and co-morbidities placing them at increased risk.

(Lengyel, E. 2010), said in the article that the ovarian tumor proliferate rapidly compress visceral organs and are only temporarily chemosensitive. This article also informed that ovarian carcinoma is a deadly disease, with a cure rate of only 30%. There are a number of genetic and epigenetic changes that lead to ovarian carcinoma cell transformation. Ovarian carcinoma could originate from any of three potential sites: the surfaces of the ovary, the fallopian tube, or the mesothelium-lined peritoneal cavity. Ovarian carcinoma tumorigenesis either progresses along a stepwise mutation process from a slow growing borderline tumor to a well-differentiated carcinoma (type I) or involves a genetically unstable high-grade serous carcinoma that metastasizes rapidly (type II).

(Jelovac, D., & Armstrong, K. 2011), in this paper authors said that epithelial ovarian cancer is the most lethal of the gynecologic malignancies and it diagnosed mostly in advanced stage. To detect ovarian cancer or any abnormality in ovary screening strategies like ultrasound and the cancer antigen (CA) 125-tumor marker detection done as a lower stage diagnosis. Women who have inherited a mutation in the *BRCA1* or *BRCA2* gene and those who have Lynch syndrome have the highest risk of developing ovarian cancer but account for only approximately 10% of those with the disease. Authors also said some treatment strategies of ovarian cancers. Such as surgery, which has a unique role in ovarian cancer, as it is used not only for diagnosis and staging but also therapeutically, even in patients with widely disseminated, advanced disease. Ovarian cancer is highly sensitive to chemotherapy drugs, particularly the platinum agents, and most patients will attain a remission with initial treatment. Although the majority of ovarian cancer patients will respond to initial chemotherapy, most will ultimately develop disease recurrence. Authors also said that chemotherapy for recurrent disease includes platinum-based, multiagent regimens for women whose disease recurs more than 6 to 12 months after the completion of initial therapy and sequential single agents for those whose disease recurs earlier. Author discussed about some new-targeted biologic agents, which particularly involved with the vascular endothelial growth factor pathway and those targeting the poly (ADP-ribose) polymerase (PARP) enzyme, hold great promise for improving the outcome of ovarian cancer. From this article new type of ovarian cancer treatment and some chemotherapy drugs name come out. All these information may give new ideas and strategies to increase the survival rate of ovarian cancer.

(Hussain, S. A. October 2013), said in the article that Bangladesh has 142 million people and is the ninth most populous country in the world. The author also said that in our country 13-to 15 lakh cancer patients are present, with about two lakh patients newly diagnosed with cancer each year. Our country is a developing country still there are around 150 qualified clinical oncologists and 16 pediatric oncologists working in the different parts of the country. Besides that regular cancer treatment is available in 19 hospitals and 465 hospital beds are attached as indoor or day care facilities for chemotherapy in the oncology/radiotherapy department. So there are so many facilities in our country has but still so many cancer patients diagnosed each year. This actually happened for lack of awareness and consciousness about their own health. There are social and economical boundaries also create obstacle to take any treatments or screening. So general people should understand that health is most important thing and this is not for ignored.

CHAPTER-2

Methods and materials:

2.1 Area of study:

For this survey the authors choose some hospitals located in different area of Dhaka city, Bangladesh. The reason to chose those hospitals are, firstly those hospital have cancer patients. Secondly those hospitals gave me permission to talk with their patients. Finally those hospitals have gynecological cancer treatment facilities, which the authors need for my survey. There is a reason for choosing Dhaka city, as most of the facilities of cancer treatments are present in hospitals' of Dhaka city. That is why patients come to Dhaka for their treatments and for this reasons the authors can find more patients here in Dhaka.



Fig-2.1: Dhaka City (source: Banglapeida, 2011)

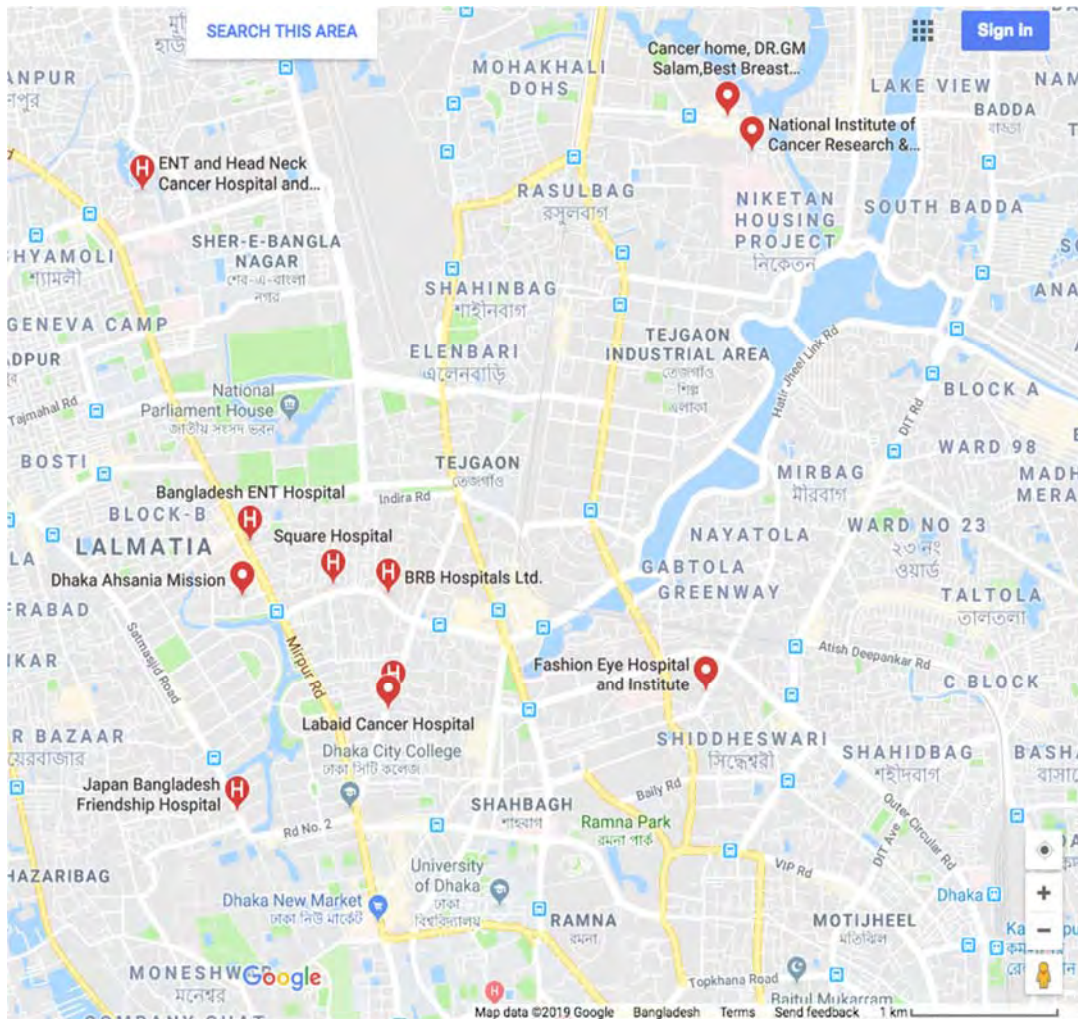


Fig-2.2: Hospitals in Dhaka city. (Source: Google, (n.d.), [Google Map of Different hospital area, Dhaka], retrieved on January 4, 2019)

2.2 Sample selection:

As I early mentioned that I targeted few hospitals where I can find gynecological cancer patients. Most of the hospitals did not allow me to talk with their patients. But finally the authors get a chance to talk with some patients and started my survey. I targeted 100 patients from those chosen hospitals for my survey. From these 100 patients, 70 patients response to my survey. These 70 patients are all female and suffering from gynecological cancer. From them 42 patients have ovarian cancer, 20 have cervical cancer and last 8 have endometrial cancer. From them 11 patients have stage-1 cancer, 16 patients have stage-2 cancer, 32 patients have stage-3 cancer and last 11 patients have stage-4 cancer. The authors started data collection in September 2018 and

the authors finished it in October 2018. I choose gynecological cancer patients as now days in all developing countries have increasing rate of these cancers.

2.3 Profile of samples:

The patients interviewed for this survey are all women as this survey is about gynecological cancer. All these 70 patients are taking or took treatments. Most of the patients have this disease from 6 months to 1 year but there are many patients who have this disease for 2 to 3 years or more. From these patients 43 are middle aged means 35 above, 23 are old means more than 55 years and only 4 patients are young means less than 30 years.

2.4 Measurement:

After selected those 70 patients I talk each of them and ask all the questions I prepare for this survey. Each interview of patient took minimum 15 minutes and for some it took more than that. From them I get information about their health, treatments, side effects, doctor's behavior, stages of cancer, taken vaccines or not and many more. I kept all these information in my questionnaire. This information is data for my statistical analysis. I took each question as one data and input for analyze. Each question and for some results combined of two questions give a result.

2.5 Survey methodology:

I followed the recommendations of World Ovarian Cancer Coalition (2018) in the designing of the survey on gynecological cancer. The opportunity of having direct contact with the target population (cancer patients) was utilized.

2.6 Questionnaire preparation:

At first I fix a set of questions to doing my survey. The question has self-designed and pre-tested structure. In that set of questions some are not useful so I removed those questions and finally I made an appropriate set of questionnaire that I used for my survey analysis. The questionnaire includes both socio-demographic characteristics and knowledge-related questions consisting of

knowledge about stages of cancer, uses of vaccines, proper treatment, about the disease, uses of different drugs for the treatment, age of patients and side effects of those treatments.

All the options given into the question are depends on possible answers. Most of the options are selected after studying about these diseases and guessing the possible answers. Some of the options selected after knowing the appropriate name of the treatment and drugs used by the help of some oncologists.

2.7 Purpose of this questionnaire:

As this survey is questionnaire based survey so this questionnaire helps a lot in this survey. Now here some point how this questionnaire helps to this survey-

- Most of the information was obtained from the questionnaire.
- Help to get the accurate data from the patient.
- Easily analyzed the obtain information for results.
- Convey the questions in a manner, which is easily understandable by the patients.

2.8 Statistical analyses:

After collecting all data I input my data in SPSS software. Then I use SPSS version 18 (IBM SPSS Statistics for Windows, version 18.0, IBM Corporation, Armonk, NY, US) for my data analysis. I set the variables and input all 70 data and from this I made charts of analyzing data of this survey. At first set the name of each variable and than set each variable by a number. Each variable can have many options depending on the options of each question as each question is represent one variable. After that input all 70 patients' information at data view by input the number of each variable set before. Finally select graph and select chart to making the results. There are different type of option to making chat the authors selected pie and bar charts for result analysis. Each question can give one single chart or two questions can be combined to get a result to compare with each other. Before doing SPSS data analysis data were entered in MS Excel 2016, cleaned for any inconsistencies and analyzed for standard distribution

measurements. T-tests were performed to determine p-values. P-value < 0.05 was considered significant. Calculations of confidence intervals assumed normal distribution of proportions.

2.9 Ethical approval:

Ethical approval is needed for this survey. As most of the patients do not want to speak about their problems or problem they face in the hospital. So ethical issues definitely come. For this reason there is a consent paper that is a prove of not to publish their name anywhere in this journal or any other place. All patients and doctors from each hospital who helped me gave informed consent and signed a consent form prior to participation in the study

CHAPTER 3

Results:

3.1 Marital status of patients from survey:

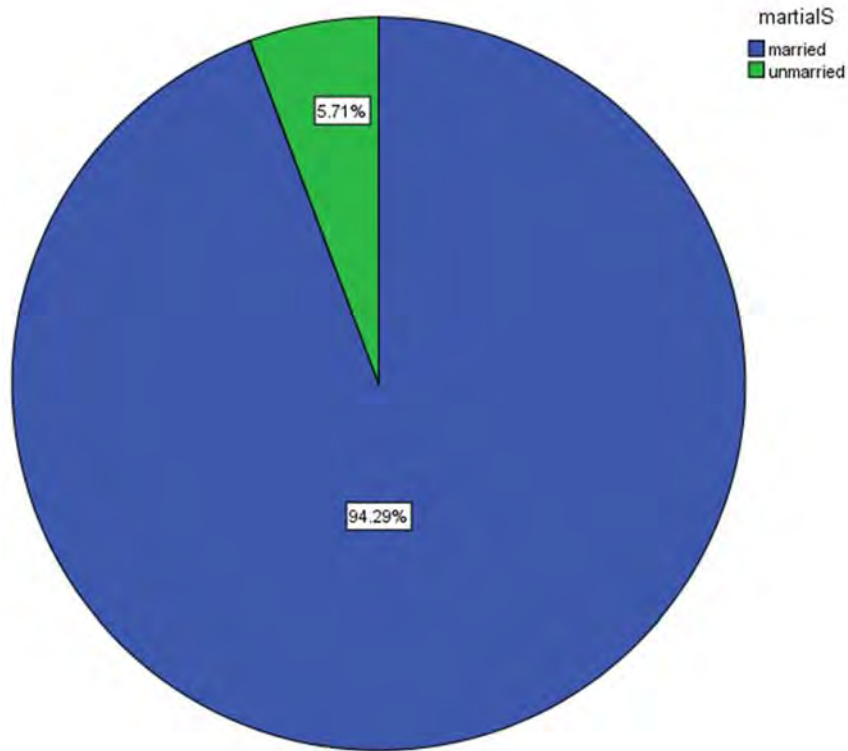


Fig-3.1: Percentage of married and unmarried patients (pie chart)

From the patients selected for survey 94.29% are married. This survey also showed that only 5.71% patients are unmarried. The result indicated that marriage could be a vital cause of any of these gynecological cancers. As excessive sexual intercourse can be increased the chance of gynecological cancer mostly the cervical cancer. The chances of having ovarian cancer and endometrial cancer among married women are also higher.

3.2 Age of the patients from survey:

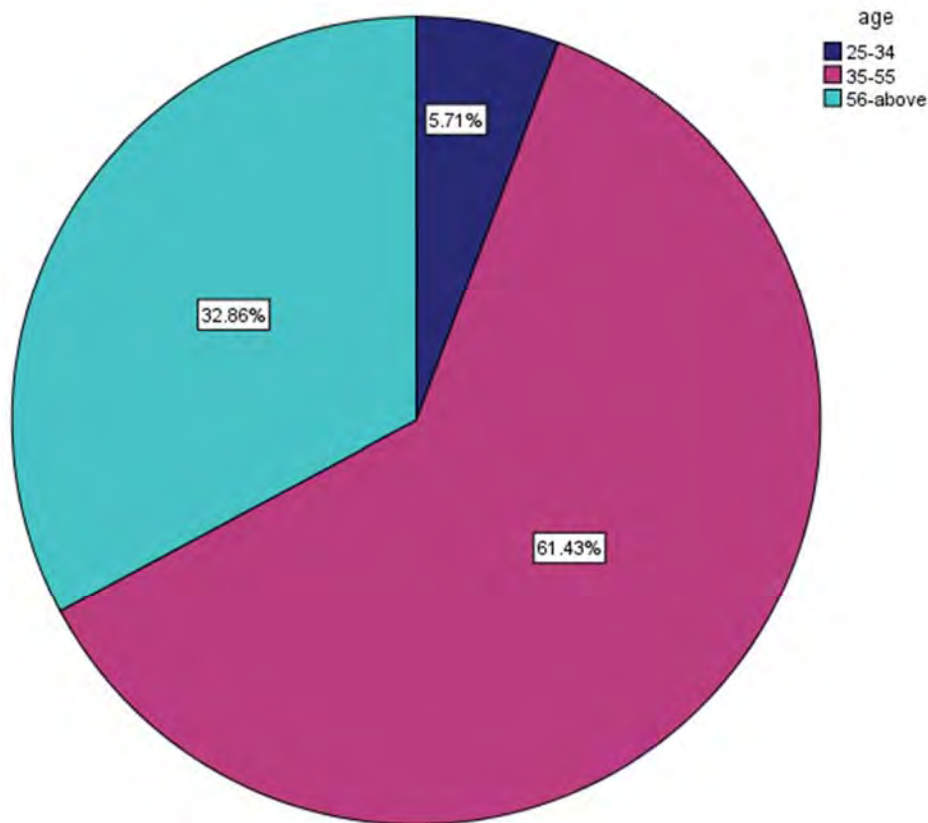


Fig-3.2: Percentage of different age group among patients (pie chart)

The survey reported that age of patients is also an important fact for these cancers. From the result it can be noticed that 61.43% patients are in middle age and their age in the range of 35-55. By this study it can be said that the woman from middle age has higher the risk of these gynecological cancers. Besides that the women have age 56-above are also in a risk of having one of these cancer as the study showed 32.86% women have the disease is age of 56-above. This result also showed that only 5.71% patients are in age between 25-34 years. This means that every woman has some risk of these cancers so they have to be very careful especially after 20 and after getting married.

3.3 Stages of cancer among patients in survey:

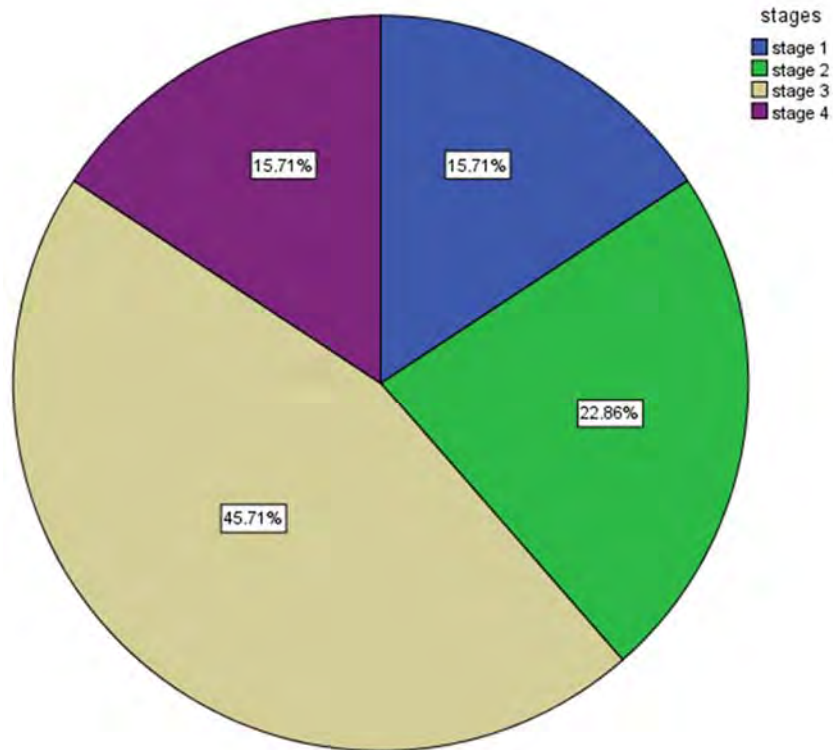


Fig-3.3: Percentages of patients with different stages of cancer (pie chart)

The study of this survey showed that 45.71% patients diagnosed by stage-3 cancer and 22.86% diagnosed by stage-4 cancer. This result indicated that most of the time symptoms are ignored by the women that they faced during the early stage of cancer or before having cancer. Most of the women felt shy to share their symptoms to others. Even they don't share these with their family members. In the other hand there are some patients tried to share their problems with their family members but most of the time they got ignored or said to shut their mouth. This happened because all the family members of patients thought that sharing these matters are very shameful and bad for their reputations. Besides that there is another reason for this and that is some of the patients diagnosed in early stages but they felt chemotherapy, surgery or radiotherapy is not going to work so they started homeopathy and herbal treatments. Those treatments can developed energies but actually those medicines could not do anything with the actual disease so

finally those patients again admitted with stage-3 or 4 grade cancer as during that time the cancer spread out the body. Besides that there 15.71% patients are diagnosed with stage-2 cancer and last 15.71% diagnosed with stage-1 cancer. Most of the patients who diagnosed with stage-1 and stage-2 cancers are in a stable position and there health is far better than the patients of stage-3 and stage-4. This happened as they early diagnosed and most of them know about the disease or they have someone in their family who had that type of disease.

3.4 Patients took vaccine or not:

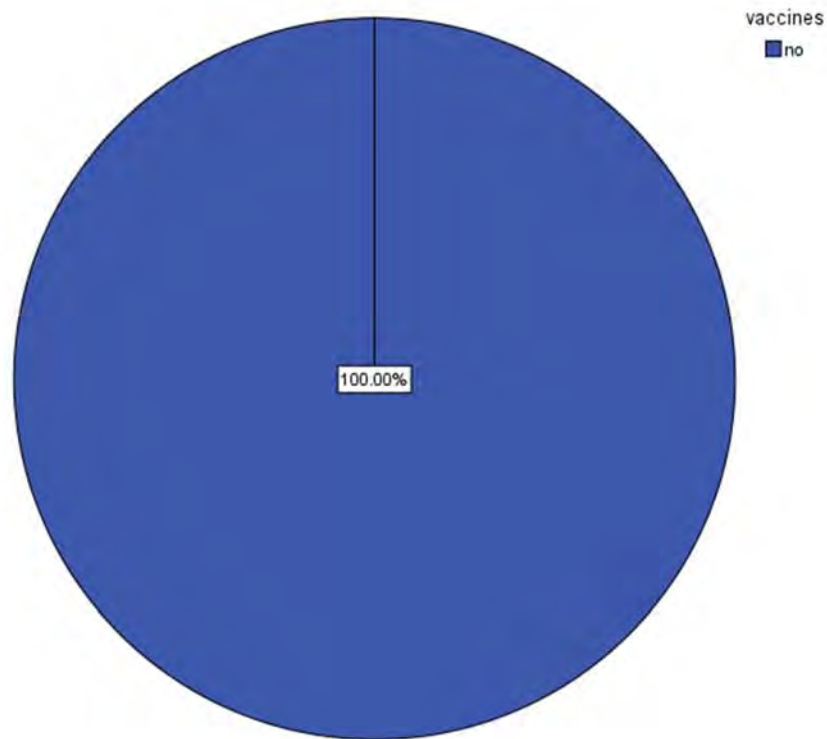


Fig-3.4: Percentage of patients taking HPV vaccines (pie chart)

The survey showed that no patients took HPV vaccines. This is very vital thing of this survey that patients are not concern about these diseases or not concern for their own health. For this reason they were not concern about taking vaccines.

3.5 Type of cancer among the patients:

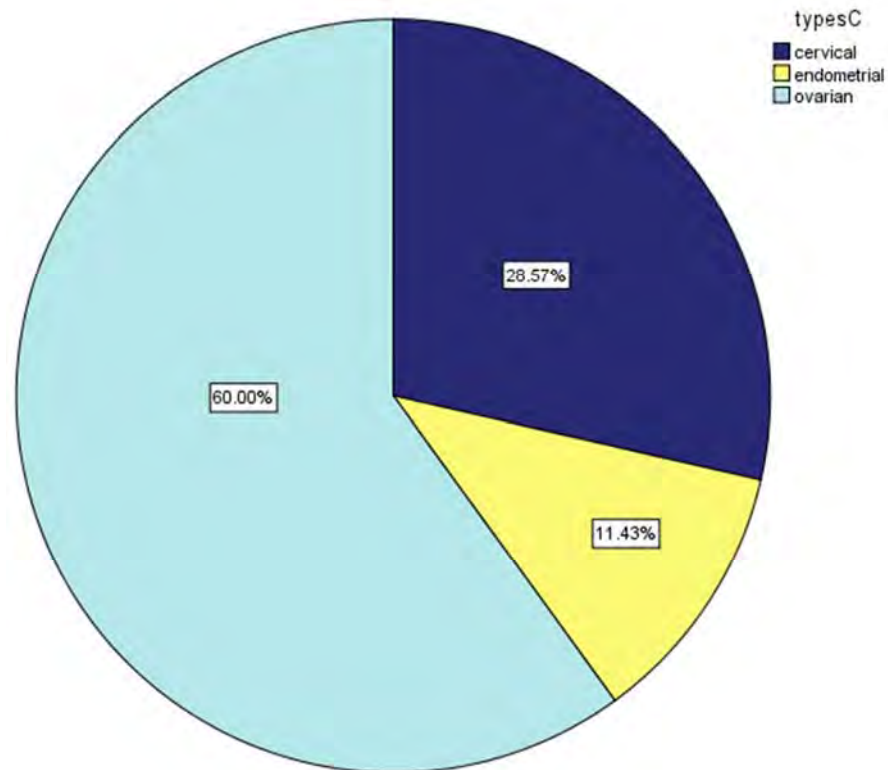


Fig-3.5: Percentage of three types of cancer among patients

From this survey showed that 60.00% women have ovarian cancer among all these three cancer. Besides that 28.57% women have cervical cancer and rest 11.43% women have endometrial cancer. So by this result we can understand among all the gynecological cancer Bangladeshi women has high chance of having ovarian cancer as the most common gynecological cancer is cervical cancer for Bangladeshi women but the chances of having ovarian cancer increases day by day as the symptoms are not so easy to detect. Besides that cervical cancer has vaccines to prevent but ovarian cancer has no vaccines. Besides that Bangladeshi women also have the risk of endometrial cancer.

3.6 Most efficient treatment:

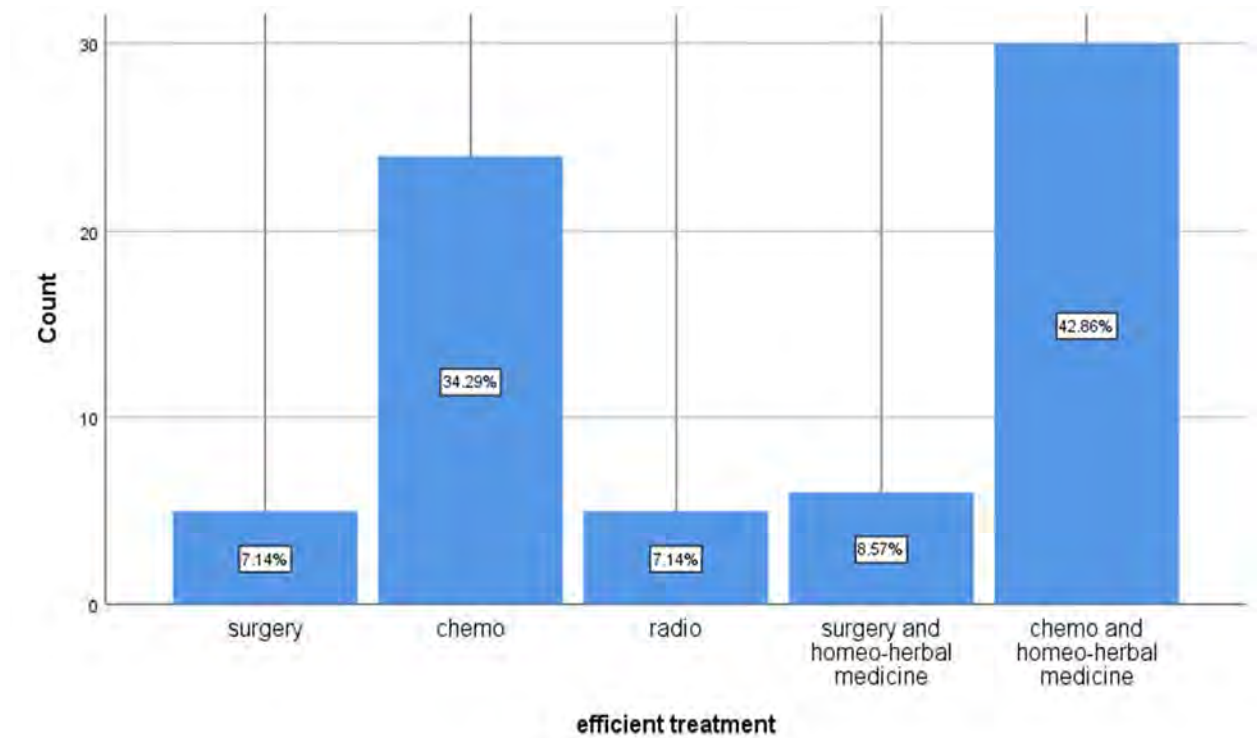


Fig-3.6: percentage of efficient treatment according to patients (bar chart)

This survey gave another information that is there were some patients who took homeopathy and herbal treatment instead of the treatment suggested by doctors. Patients could not tolerate the side effects of chemotherapy, radiotherapy and surgeries. In the other hand some of the patients thought that the treatments suggested by doctors are useless. Some patients have fear of getting more ill by taking those treatments. All these reasons lead the patients to pick alternative way of recovery and that alternate is having homeopathy and herbal medicines. In this survey it showed that in total 51.43% patients said that homeopathy and herbal medicines are more effective. Besides that 34.29% said that chemotherapy also effective but from them some patients said that with chemo herbal and homeopathy also give lots of support to their health. Other 7.14% said surgery is more effective and rest of 7.14% said radiotherapy is more effective. By this percentage it is clear that there are above 50% Patients believe that homeopathy and herbal medicines can be very effective for this life threatening disease.

3.7 Why patients did not take HPV vaccines:

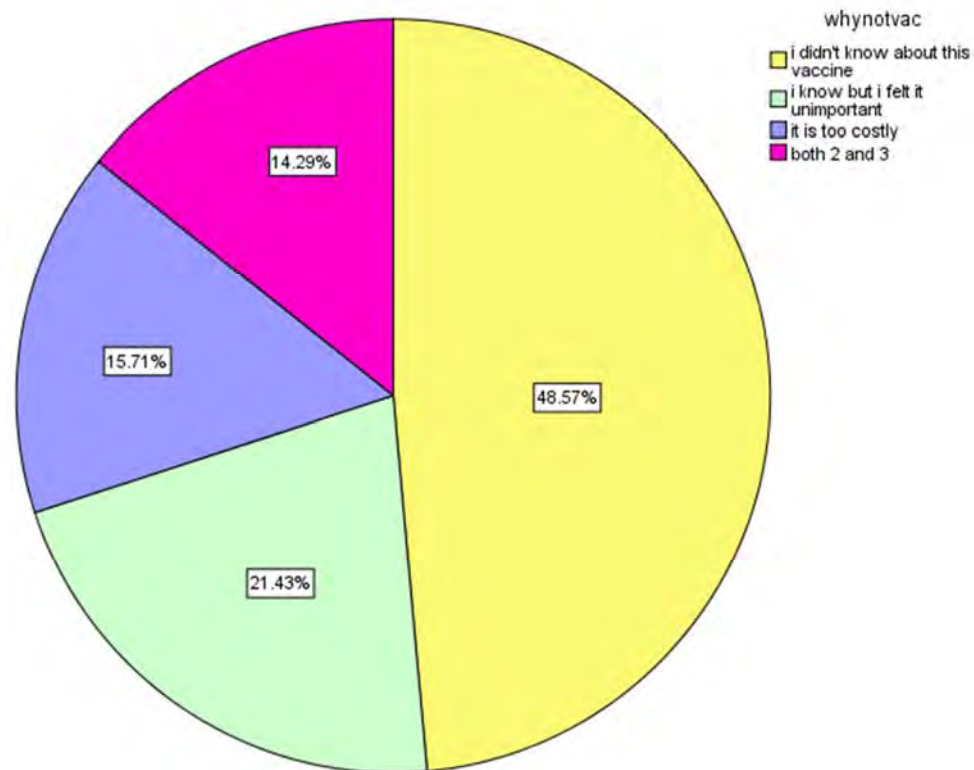


Fig-3.7: percentage of reasons for not taking vaccine (pie chart)

This result revealed the reasons of patients for not taking vaccine. This result showed that 48.57% patients have no idea about this *Human Papilloma Virus* (HPV) vaccine. Moreover 21.43% patients are known about the vaccine but felt unimportant to take the vaccine. Besides that 15.71% patients found the vaccine expensive. Rest of 14.29% patients had cost issues and also felt unimportant to take the vaccine. It is true that the HPV vaccines only work on few traits of human papilloma virus and can only prevent cervical cancer still it can be very good precaution for cervical cancer as now a days cervical cancer is most common and frequent disease for middle age woman.

3.8 According to different stages' patients what is the efficient treatment:

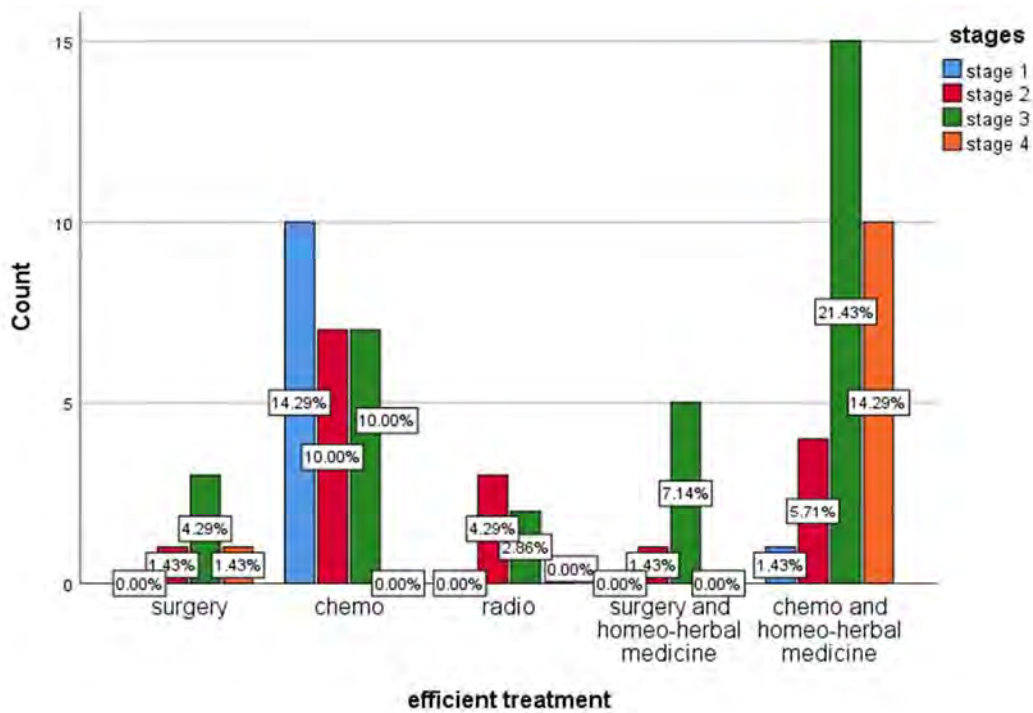


Fig-3.8: percentage of patients with different stage and according to them the most efficient treatment (clustered bar chart)

According to this survey there is a result of how stages and efficient treatment related to each other. There are in total 42.86% Patients said that both chemotherapy and homeopathy and herbal medicines are efficient. From them 21.43% are stage-3 patients and 14.29% are stage-4 patients. Other 5.71% are stage-2 and 1.43% are stage-1 patient. So from this result it showed that high-grade cancer patients mostly took herbal and homeopathy treatments. Some of the patients are early diagnosed but they stopped their regular treatments as those have so many side effects and patients and their family member think those treatments are not actually worked so well. So that they took herbal or homeopathy medicines which actually not worked at all and it became high-grade cancer. Some other patients took chemotherapy and radiotherapy but with those treatments they took homeopathy and herbal treatments. Some other patients are late diagnosed but they still believe that homeopathy and herbal medicines can recover them. There are in total 8.57% Patients who said both surgery and homeopathy and herbal medicines are efficient treatments. It means total 51.43% patients took homeopathy and herbal treatment. From

those 8.57% 1.43% has stage-2 and other 7.14% have stage-3 cancer. There are only 2.86% patients who think radiotherapy is more efficient. There are in total 7.15% patients feel only surgery is efficient and from them 4.29% stage-3, 1.43% stage-2 and 1.43% stage-4 patients. This survey also showed that according to 34.29% patients only chemotherapy is efficient treatment. From them 10.00% are stage-2 and 3 patients and 14.29% are stage-1 patients.

3.9 Efficient treatment and effective treatment:

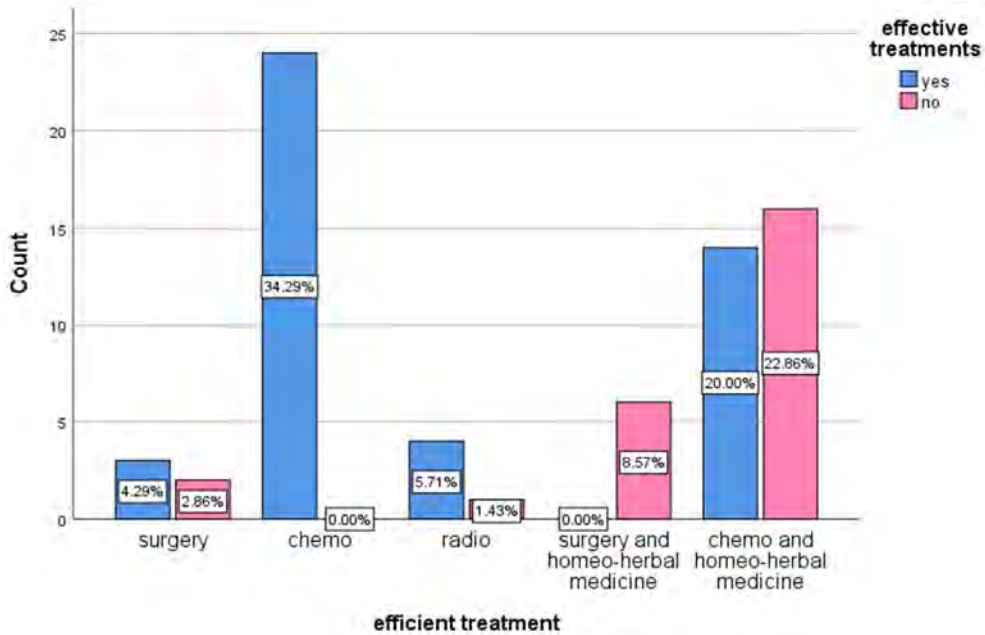


Fig3.9: Percentages of efficient and effective treatments (bar chart)

This result is counted by related to efficient treatment and effective treatment. This survey showed that 22.86% patients who took homeopathy and herbal medicines said their treatment is not effective. And 20% patients said that treatments are effective for them. Those 42.86% patients took both chemotherapy and homeopathy and herbal medicines. There are 8.57% patients took homeopathy and herbal medicines and surgery also. From them all said those treatments are not really effective for them. Patients took radiotherapy from them 1.43% said this is not effective and other 5.71% patients said it is really effective treatment for them. There are 34.29% patients said only chemotherapy is effective for them. Whereas for only surgery 4.29% patients said it is effective and other 2.86% said it is not effective for them.

3.10 If patients took contraceptive pills or not:

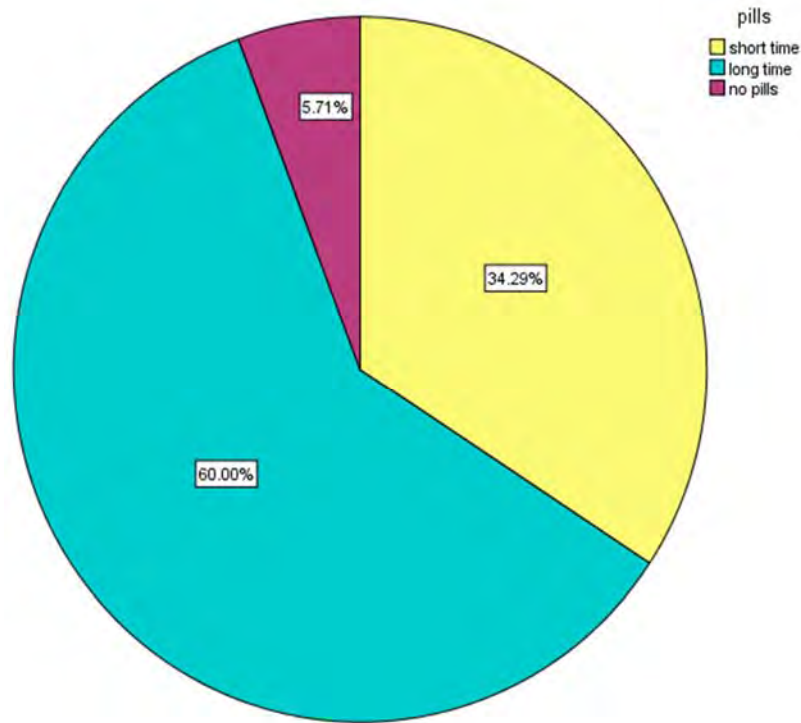


Fig-3.10: Percentage of patients took contraceptive pills (pie chart)

The result indicated the bad impact of having contraceptive pills. From this result only 5.71% patients were found who did not take pills. Besides that others are taking pills for short or long time. Pills were taken for short time by 34.29% patients. Pills were taken for long time by 60.00% patients. These pills enhanced the chances of having gynecological cancers by misbalancing hormones.

3.11 Patients who know about the disease before having it:

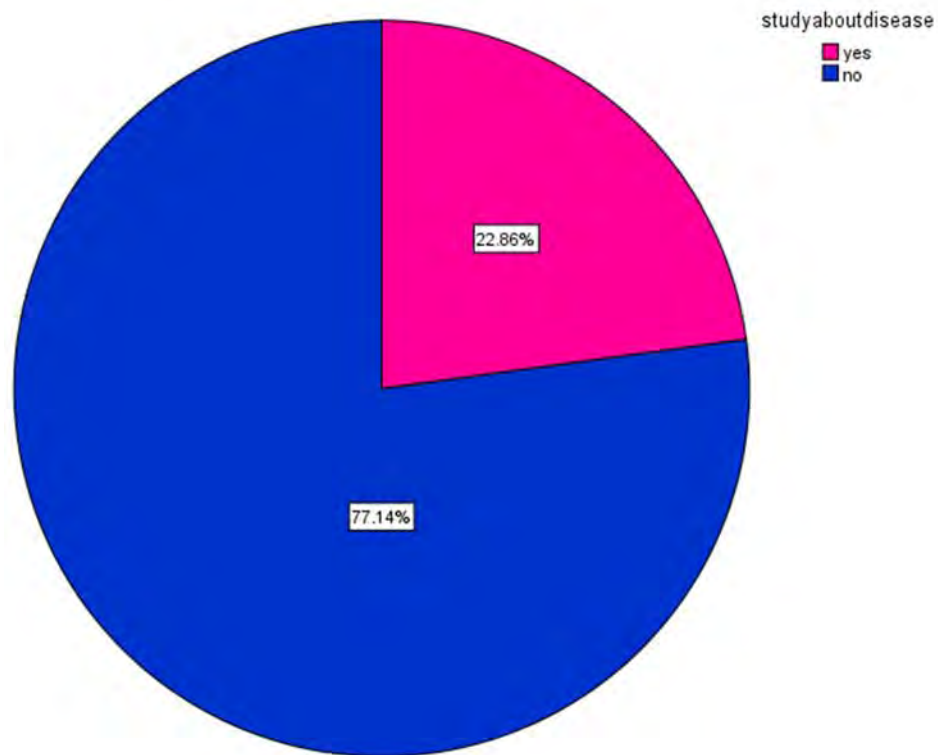


Fig-3.11: Percentage of patients who know about the disease before having it (pie chart)

Only 22.86% patients studied about the disease before having it. Most of the patients knew about the disease have someone in their family who have similar disease. Moreover 77.14% patients were identified who have no idea or very few ideas about the disease they have. This pointed that people are not aware even after having the disease.

3.12 Doctors suggestions to reduce side effect:

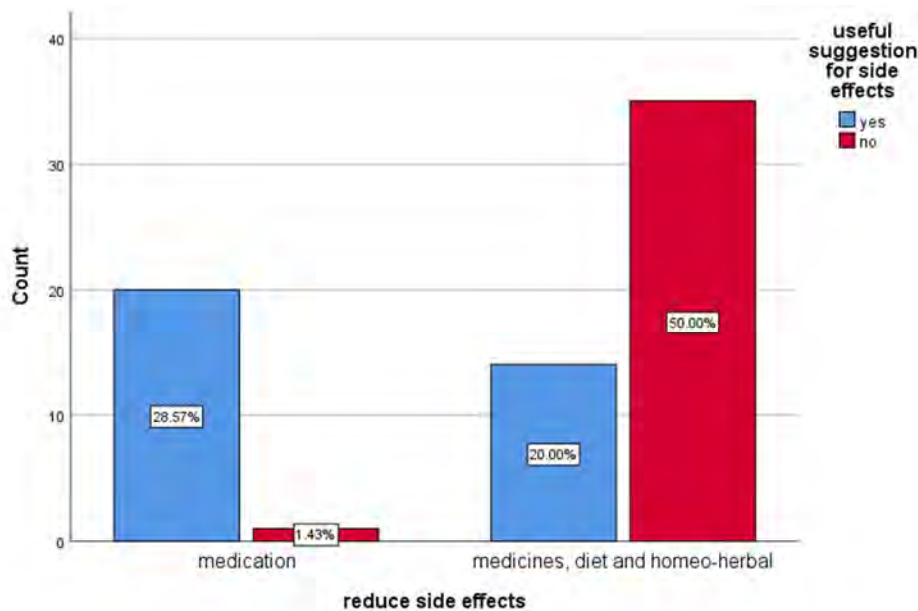


Fig-3.12: Percentage of useful suggestions for side effects (clustered bar chart)

In this survey a bar chart was made with the ratio of reduce side effects in accordance with the suggestions provided by the doctors. From this bar chart it can be seen that 28.57% patients said that their doctors suggest only medicines to reduce side effects and that was useful for them. And 1.43% said that medicines are not useful for their side effects. There are 20% patients said that diets and some other things like homeopathy and herbal medicines are helpful to reduce side effects also those medicines provided by their doctor are equally helpful and it means that they agreed that their doctors provide useful suggestions. But there are 50% patients who disagreed with that they said not the medicines and also those herbal and homeopathy treatments with diet cannot reduce their side effects. From this result it also clearly showed that no patients took any psychological help or meditation for reducing their side effects.

3.13 Different stages' patients study about disease or not:

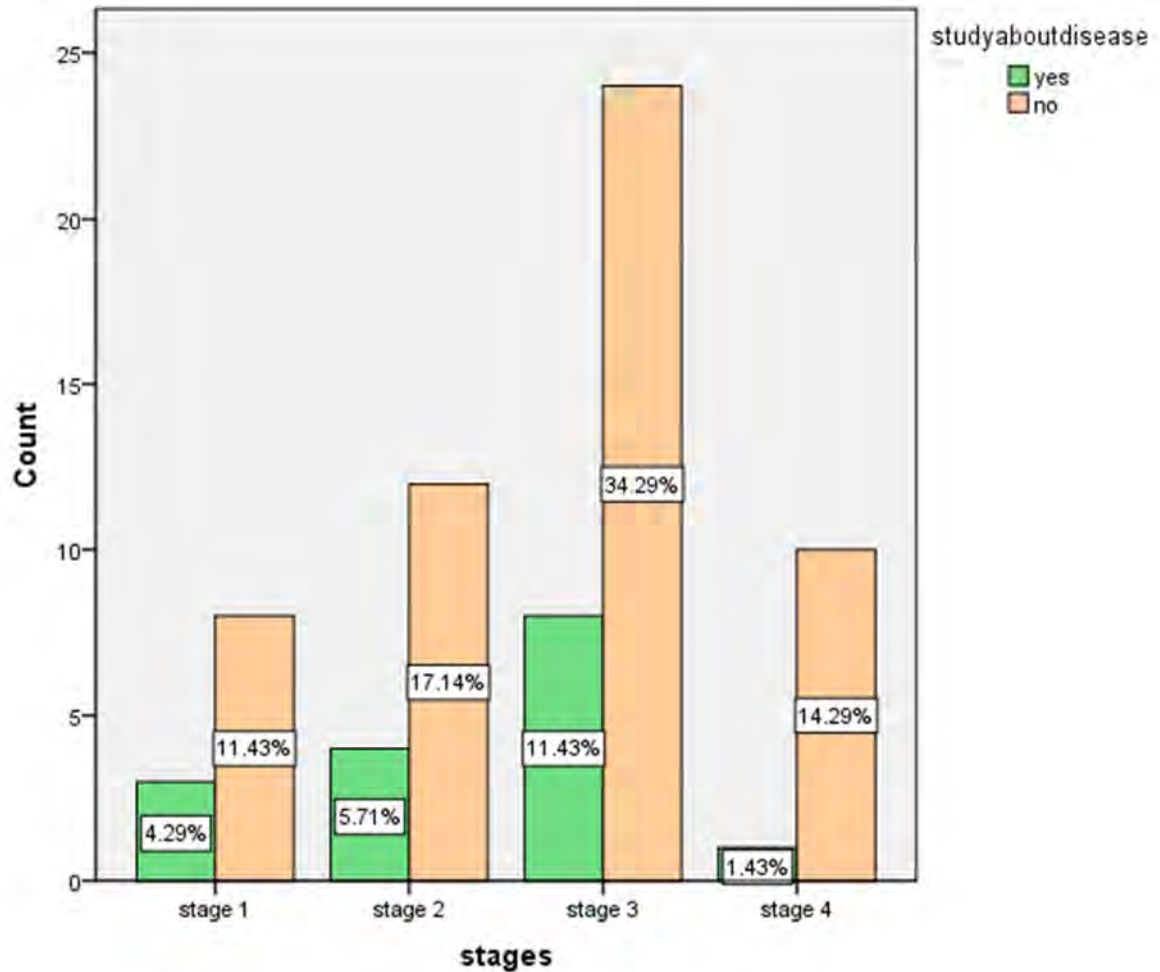


Fig-3.13: Percentage of different stages' patients with knowledge about the disease they have (clustered bar chart)

Through this result it identified that only 4.29% of stage-1 patients have knowledge about the disease they have and 11.43% patients have no idea about the disease. From this result it also identified that only 5.71% stage-2 patients have some idea about their disease and 17.14% patients have no idea about their disease. Moreover the patients from stage-3 only 11.43% have knowledge about their disease and 34.29% patients did not know anything about their disease. Finally among stage-4 patients only 1.43% has knowledge about their disease and 14.29% patients have no knowledge about their disease.

3.14 Efficient treatment for reducing side effects:

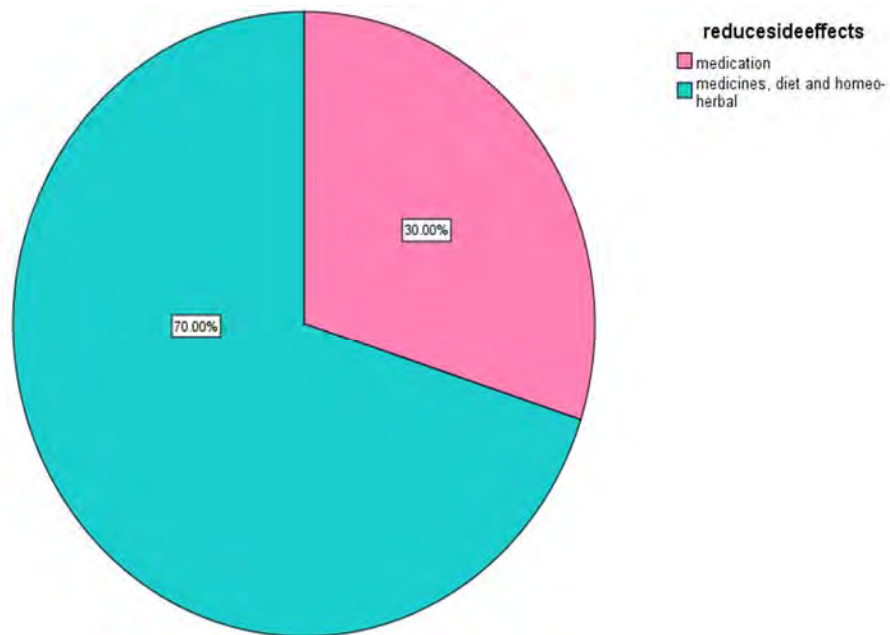


Fig-314: Percentage of efficient treatments for reducing side effects (pie chart)

Medicines suggested by oncologists taken by 30% of patients from the survey to reduce their side effects. Medicines along with the diet plans and herbal and homeopathy medicines taken by 70% of patients to reduce their side effects. Homeopathy and herbal medicines not suggested from oncologists. No patients were taken meditation or some psychological help to reduce their side effects.

3.15 Smoking and tobacco habits among patients:

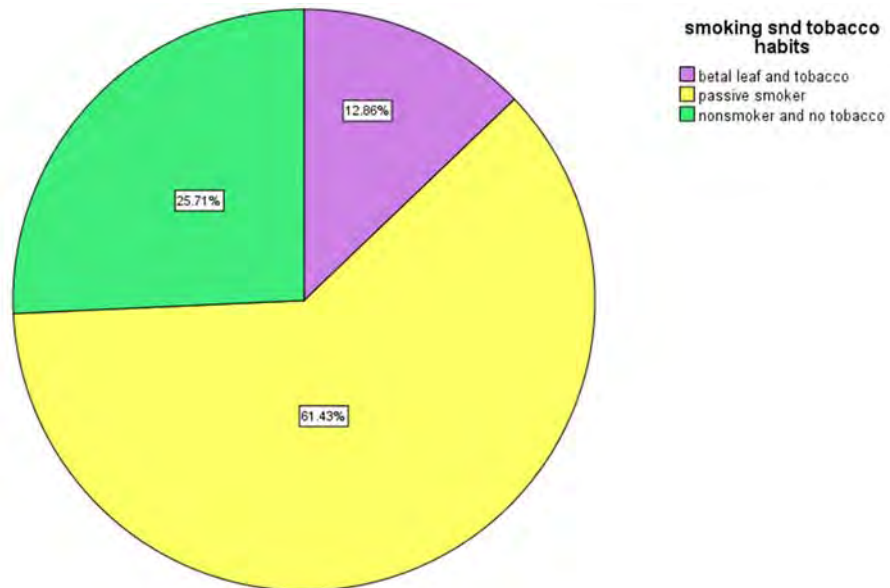


Fig-3.15: Percentage of bad practices of patients (pie chart)

According to the survey there were 61.43% patients affected by passive smoking. It indicated that their family members have bad habits of smoking. Another finding from this result is 12.86% patients were taken betel leaf with tobacco. There were 25.71% patients who were non-smoker and non-alcoholic.

3.16 According to stages occurrence of side effects:

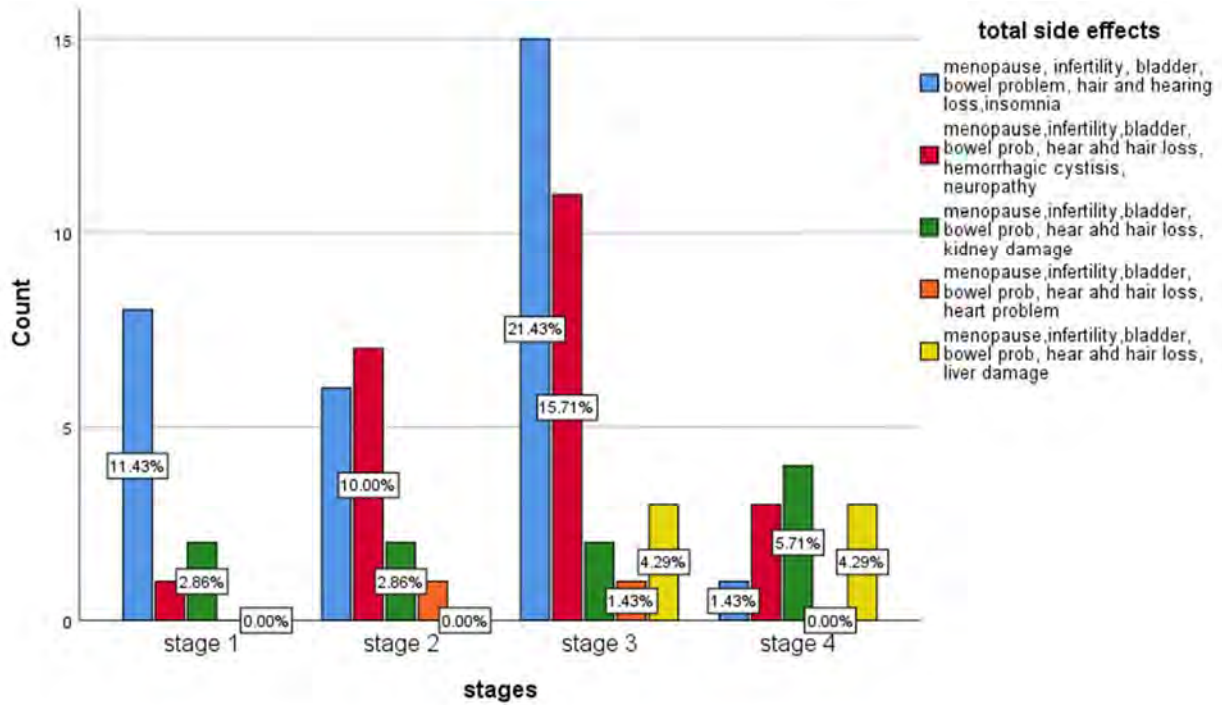


Fig-3.16: Percentage of occurrence of side effects in different stages (clustered bar chart)

According to the survey, 11.43% stage-1 patients had most common side effects like menopause and infertility, and bladder problems, bowel problems, hair and hearing loss, mouth and vaginal sores, insomnia. All these side effects are common and most of the patients in each stage-face those problems after taking treatments. From stage-1 patient 1.43% people face all these side effects written before including hemorrhagic cystitis and neuropathy. Another 2.86% patients from stage-1 faced all those common side effects including bowel problem and kidney damage. There are no patients with liver damage or heart problem. Again in stage-2 patients 9.40% have those common side effects. Including hemorrhagic cystitis and neuropathy there were 10.00% patients in stage-2 have other common side effects. Moreover 2.86% patients have kidney damage a critical condition for cancer patient. There were 1.43% patients have heart problem with other common side effects. From stage-3 patients 21.43% patients were having all common side effects and 15.71% have hemorrhagic cystitis and neuropathy with that. There were 2.86% patients having kidney damage and 1.43% has heart problem with that. Besides that 4.29%

patients have liver damage with that. From stage-4 patients only 1.43% has only common side effects. Besides that along with common side effects hemorrhagic cystitis and neuropathy were also present in 4.29% patients from stage-4. The percentage of patients with kidney damage is 5.71% and the percentages of 4.29% patient have both kidney and liver damage along with all other side effects. This result showed that most kidney and liver damage occurred on stage-3 and stage-4 patients. As those patients are more physically weak and their organs are also weak that is why they are more affected by major side effects. Besides that the common side effects are also not very easy to handle. Most of the women faced infertility, which affects them not only physically but also psychologically. In total there are 22.87% patients have kidney damage as a side effects so it clearly showed that for some patients chemotherapy, radiotherapy, surgeries can make their health worse. In total there were 11.44% patient having liver damage as a side effect so sometimes chemotherapy, radiotherapy, surgeries can cause liver damage also. Finally P-value was calculated for this result and the value is 0.003907. The P-value ensured that the result was significant.

3.17 According to age occurrences of side effects:

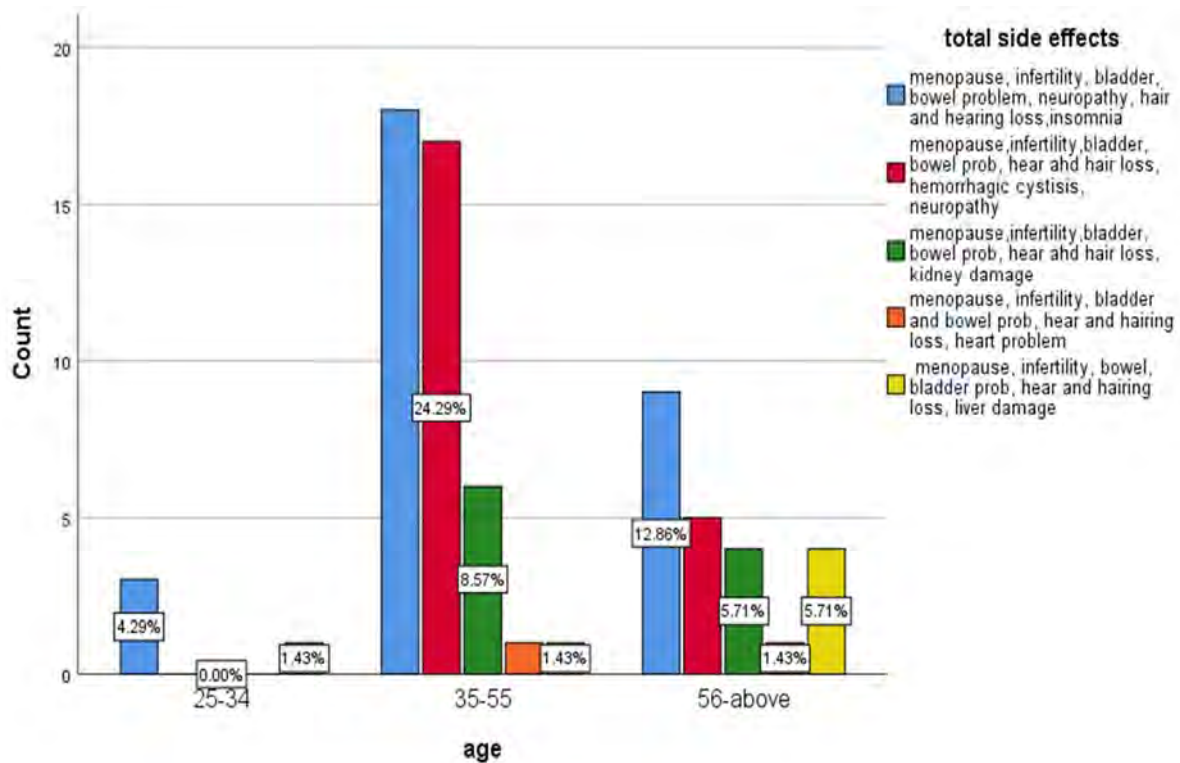


Fig-3.17: Percentage of patients having side effects according to their age (clustered bar chart)

This result showed that age could be a factor for having severe side effects. Fewer side effects occurred in patients between ages of 25-34 years. Common side effects were only presented in 4.29% of patients from age between 25-34 years. Besides that only 1.43% has kidney damage from age between 25-34 years. In the other side patients between ages 35-55 have more severe side effects than patients between ages 25-34. Patients between ages 35-55 years, from them 25.28% patients have common side effects. 24.29% patients have hemorrhagic cystitis and neuropathy with other common side effects and 8.57% patients have kidney damage, 1.43% has liver damage and other 1.43% has heart problem. Patients between ages 56-above have more severe side effects. There are 12.86% patients having all common side effects and 7.00% have hemorrhagic cystitis and neuropathy with that. Moreover there were 5.71% patients having kidney damage and 1.43% patient has heart problem. Liver damage is presented in 5.71% patients from patients between ages of 56-above years. More severe side effects were present in

old patients. More over along with older patients middle age patients were also faced severe side effects than young patients. This survey showed that age is a factor for increasing side effects. P-value was calculated for this result. P-value from this result is 0.042879. This P-value is also accurate and it ensured the result is significant.

From this entire survey lots of output surfaced but I pick the ones that served the purpose of the study. All these results help common people in our country to be more conscious about their health. As well as they will understand how much important is this to take precaution and do screening to make a healthy life. The patients should get knowledge that completed the whole treatment is always important. Patients should also understand that never experiment with health because it can make it worse than before. It is also showed that side effects can also hamper your daily life so proper care and suggestion is needed in that time.

CHAPTER-4

Discussion:

Some important information about gynecological cancer has emerged from this survey. This work has given an overall conception about the mentality of the women, as well as the entire society about this disease. Gynecological cancer is a life threatening disease about which very few people have any knowledge. Moreover, they feel it seems to be a shameful things to share. For this reason most of the time they try to hide their gynecological problems but unfortunately hiding these matters make the situation worse. In our country most of the patients get diagnosed with stage-3 or stage-4 cancer. All this happen only because of the shyness and typical thinking of our society. Not only the society but sometimes even the patients' family restrict them from sharing their gynecological problems with doctors as they think it can hamper their marriage or they cannot take babies again. Here it can be clearly understood why those cancers are increasing day by day and why the survival rate is decreasing. The survey also shows that it can help to make some changes of people's thinking and to create awareness among the people so that they can do regular checkups. Also they can take vaccines so that some cancers can be prevented. Besides that this survey can help women to understand that after the age of 30 years they must observe their own body to understand any abnormalities or any other symptoms (Hussain, S. A., & Sullivan, R., 2013, December). In our country doctors are also not so clear with patients. Most of the doctors get annoyed when patients ask little more about the disease. They do not even clearly inform them about what type of side effects they can face during treatments. Doctors sometimes give lots of medicines to their patients for reducing side effects but do not give any suggestions about diet or other things. Sometimes some patients can become psychologically weak. In this cases the doctors should suggest them to a psycritist but most of the time they do not want to do that. They just want to give medicines. Even doctors do not have clear understanding of vaccines. Even some doctors think that vaccines are not important and neither is psychological help. For this reason so many patients stop their treatments and start homeopathy or herbal which is actually not good for their disease.

Marriage is one of the important points in this survey. From the patients selected for this 94.29% are married and only 5.71% unmarried. This result indicates that marriage can be a vital cause of those gynecological cancers. As we know that excessive sexual intercourse can increase the

chance of gynecological cancer, mostly the cervical cancer. That is why married women have higher chances of having these cancers. Besides that they have also high chance of having ovarian cancer as more pregnancy can increase the chance of having ovarian cancer. Besides that multiple partners are also a cause of having gynecological cancers. Sometimes cancer causing virus like *human papilloma virus* can be transmitted from male partners (Hussain, S. A., & Sullivan, R., 2013, December). Besides that most of the times women ignore the symptoms as those may naturally occur after sexual intercourse.

Age is another important point for this survey. Mostly the middle-aged women are more prone to gynecological cancers. That is why 61.43% patients from this survey are in middle age and their age in the range of 35-55. By this study it can be said that the women of middle ages have high the risk of getting this gynecological cancer as in that age they are more sexually active and sexually active women have high risk of having these cancers. Moreover there are 32.86% patients from this survey are in age between 56-above and 5.71% patients are in age between 25-34. Young women are more careful than the older women that are why the percentage of young patients is lower than older patients. As most of the women in our country especially middle-age women are less careful about their health and as well as they do not even know that this age has a risk of having any gynecological cancer. Actually after the age of 30 years so many mutations occur to our bodies which are already exposed to the viruses and other germs and radiations that it starts to slowly affect it. So most of the time this slow process finally surfaces when the women are in their middle-aged (Ansink, A. C., Tolhurst, R., Haque, R., Saha, S., Datta, S., & van den Broek, N. R., 2008). Moreover middle-aged women have menopause that cause hormonal imbalance and it leads to endometrial cancer (Cook, L. S., Meisner, A. L. W., & Weiss, N. S., 2017). Middle-age women are more fertile than young women, which lead to ovarian cancer (Jelovac, D., & Armstrong, D. K., 2011). There is another findings form this survey is according to age of patients from occurrence of side effects. This result showed that age could be a factor for having severe side effects. Fewer side effects occurred in patients between ages of 25-34 years. Common side effects were only presented in 4.29% of patients from age between 25-34 years. Besides that only 1.43% patients have kidney damage from age between 25-34 years. On the other side patients between ages 35-55 have more severe side

effects than patients between ages 25-34. Patients between ages 35-55 years, from them 25.28% patients have common side effects. 24.29% patients have hemorrhagic cystitis and neuropathy with other common side effects and 8.57% patients have kidney damage, 1.43% has liver damage and other 1.43% has heart problem. Patients between ages 56-above have more severe side effects. There are 12.86% patients having all common side effects and 7.00% have hemorrhagic cystitis and neuropathy with that. Moreover there were 5.71% patients having kidney damage and 1.43% patient has heart problem. Liver damage is presented in 5.71% patients from patients between ages of 56-above years. More severe side effects were present in old patients. Moreover along with older patients middle age patients were also faced severe side effects than young patients. As old patients have lower immunity and they usually have other diseases that cause more side effects (Redd, W. H., Montgomery, G. H., & DuHamel, K. N., 2001, June 6). So this result can help those women to observe their own health and not to hesitate to say their problems to others. As well as this result can help women to know from which, age they need regular checkup or do screening for safety purpose.

Stages of cancer are another point to discuss in this survey. The survey showed that 45.71% patients diagnosed by stage-3 cancers and 22.86% diagnosed by stage-4 cancers. These two results indicate that most of the women ignore the symptoms they had during the early stage-or before the malignance occurred. Besides that there 15.71% patients are diagnosed with stage-2 cancer and last 15.71% diagnosed with stage-1 cancer. Most of the patients who are diagnosed with stage-1 and 2 cancers are in a stable position and their health is far better than the patients of stage-3 and stage-4. This survey showed that most of the patients from this survey diagnosed with advanced stage of cancer. There is another finding which is according to patients with different stages of cancer which treatment is more efficient to them. There are in total 42.86% patients said that both chemotherapy and homeopathy and herbal medicines are efficient. From them 21.43% are stage-3 patients and 14.29% are stage-4 patients. Other 5.71% are stage-2 and 1.43% is a stage-1 patient. So from this result it showed that advanced stage cancer patients mostly took herbal and homeopathy treatments. Some patients took chemotherapy and radiotherapy along with homeopathy and herbal treatments and some patients stopped their actual treatments and started homeopathy and herbal treatments. There are in total 8.57%

patients who said both surgery and homeopathy and herbal medicines are efficient treatments. From them 1.43% has stage-2 and other 7.14% have stage-3 cancer. It means total 51.43% patients took homeopathy and herbal treatment. There are in total 7.15% patients feel only surgery is efficient. This survey also showed that according to 34.29% patients only chemotherapy is efficient treatment. So this result especially shows two things. Firstly there are so many herbal and homeopathy doctors who can easily manipulate those cancer patients by saying that this disease will be fully cured and there will be no side effects or other health issues by taking this herbal and homeopathy treatments. So most of the patients took that suggestions and medicines and finally got more ill than before. There are some patients who still believe that herbal and homeopathy is better than actual treatments. Second thing to come out from this result is oncologists are not always carefully handling their patients. For this reason patients get confused when they face side effects and they started thinking that they get more ill than before after taking treatments. So it is a responsibility for all oncologists that they should talk to their patients and patient's family and give a clear vision about all possible situations (Hussain, S. M. A., October 2013). According to patients with different stages occurrence of side effects is another finding from this survey. According to the survey, 11.43% stage-1 patients had most common side effects like menopause and infertility, and bladder problems, bowel problems, hair and hearing loss, mouth and vaginal sores, insomnia. All these side effects are common and most of the patients in each stage-face those problems after taking treatments. From stage-1 patient 1.43% people face all these side effects aforementioned including hemorrhagic cystitis and neuropathy. Another 2.86% patients from stage-1 faced all those common side effects including bowel problem and kidney damage. There are no patients with liver damage or heart problem. Again in stage-2 patients 9.40% have those common side effects. Including hemorrhagic cystitis and neuropathy there were 10.00% patients in stage-2 have other common side effects. Moreover 2.86% patients have kidney damage a critical condition for cancer patient. There were 1.43% patients have heart problem with other common side effects. From stage-3 patients 21.43% patients were having all common side effects and 15.71% have hemorrhagic cystitis and neuropathy with that. There were 2.86% patients having kidney damage and 1.43% has heart problem with that. Besides that 4.29% patients have liver damage with that. From stage-4 patients only 1.43% has only common side effects. Along with common side effects hemorrhagic cystitis and neuropathy were also present in 4.29% patients from stage-4. The percentage of

patients with kidney damage is 5.71% and the percentages of 4.29% patient have both kidney and liver damage along with all other side effects. This result showed that most kidney and liver damage occurred on stage-3 and stage-4 patients. As patients with stage-3 and stage-4 cancers are more physically weak and their organs are also weak that is why they are more affected by major side effects. The patients with advanced stage cancer has low immunity as they took more medicines and treatments and all these matters make them sensitive towards other infections (Mustian, K. M., Sprod, L. K., Janelins, M., Peppone, L. J., & Mohile, S., 2012).

There is no patients from this survey who took vaccines against cervical cancer. There is another important point find from this survey is why you do people not take vaccines. So in the result it shows that 48.57% patients have no idea about this Human Papilloma Virus (HPV) vaccine. Then 21.43% patients are known about the vaccine but felt unimportant to take the vaccines. Besides that 15.71% patients found the vaccine are too expensive. Last 14.29% patients from this survey have problem with its cost and thus felt it is unimportant to take this vaccine. It is true that the HPV vaccines only work on few traits of human papilloma virus and can only prevent cervical cancer still it can be very good precaution for cervical cancer as now a days it is the most common and frequent disease for middle age woman. From this results it clearly known that people in our country has very little knowledge about this vaccine. When some random people were queried they are also said they have no idea about this vaccines or some of them said that this type of thing they heard but not understand properly or do not bother to understand this things as they thought it is not so important thing to remember. Besides that all the patients have very little knowledge about this vaccines. Even their family members are also not very sure about taking vaccines or not so clear about this vaccine. Doctors also said that only some strain of HPV mostly HPV type 16 and 18 virus would affect by this vaccines (Adams, M., Jasani, B., & Fiander, A., 2007). Both vaccines affect about >90% time (Cutts, F. T., Franceschi, S., Goldie, S., Castellsague, X., De Sanjose, S., Garnett, G., Markowitz, L., 2007, September). HPV vaccine has three doses to take. Each dose cost 6000taka in our country. Moreover most of the time this vaccines work for maximum 9 years and also it work only on few strains of HPV. This amount is too much for the people who live in rural area or village side also for lower class families and also for middle class families (Ansink, A. C., Tolhurst, R., Haque, R., Saha, S., Datta, S., & van

den Broek, N. R., 2008). There were very little campaigning or other outreach programs that have been done for this vaccine. So people do not know about this or know very little about this. All these matters are the cause of not knowing or taking vaccines. Whereas upon visiting a cancer hospital in India I saw that the hospital and other volunteers are campaigning for taking HPV vaccines. They also outreach with a leaflet and give all the patient, attendant or whoever went to them and that leaflet contain about how important that vaccine is, how it help. Besides that there was also some other information given like the symptoms of cervical cancer, causes of that cancer, how can they check etc. They also give a chance to have a free screening so that all people can know if they have any chance or have any abnormalities or not. So it is clear that if our country's hospitals do this kind of campaigning and give a service of free screening a lot more people can be safe from this cancer and the death rate might decrease and survival rate can increase.

This survey also showed the types of cancers in the population selected for this survey. From this survey we can see that 60.00% women have ovarian cancer among all these three cancer. Moreover 28.57% women have cervical cancer and rest 11.43% women have endometrial cancer. This survey showed percentage of ovarian cancer is higher than cervical cancer but among the population of whole Bangladesh the rate of cervical cancer is higher than ovarian cancer (Hussain, S. A., & Sullivan, R., 2013, December). It has two reasons. First I was able to get permission for only a few of the hospitals so that patient number is low and from them by coincidence there were more ovarian cancer patients. Second reason is that now a days ovarian cancer is increasing because most of the women do not understand the symptoms and there are some patients have ovarian cancer that have family member with breast cancer or ovarian cancer. As ovarian cancer can be inherited by genetic mutation of *BRCA1* and *BRCA2*, which is also responsible for breast cancer and as we know that second highest rating cancer is breast cancer among women. About 90% of all hereditary epithelial ovarian tumors accounted for *BRCA* germline mutations (Russo, A., Calò, V., Bruno, L., Rizzo, S., Bazan, V., & Di Fede, G., 2009, January). So if there is any family member that has breast cancer that mutated gene can pass on and cause not only breast cancer but also ovarian cancer. For these reasons ovarian cancer also increases day by day. Another result come from this survey is the patients who have ovarian

cancer has age of 50 years to above and increasing age is another cause for ovarian cancer. Cervical cancer rate is also increasing day by day, as most of the women do not take vaccines and ignored symptoms they have before having this cancer.

Taking contraceptive pills is another important point in this survey to discuss. There are only 5.71% who did not take pills. Besides that others are took pills for short or long time. There are 34.29% patients are took pills for short times. Other 60.00% patients took pills for too long. These pills also enhance the chance of having gynecological cancers. As there is said that birth control pills are not safe and not good for health. Some study said that excess use of contraceptive pills might cause cervical cancers (Vaisy, A., Lotfinejad, S., & Zhian, F., 2014). Contraceptive pills may also cause endometrial cancer by increase the estrogen hormones (M., V. (2010). So this survey showed that most of the patients took pills in an excessive manner and for long time and that might one of the reasons for having any of these cancers.

According to the survey there were 61.43% patients affected by passive smoking. It indicated that their family members have bad habits of smoking. Another finding from this result is 12.86% patients were taken betel leaf with tobacco. There were 25.71% patients who were non-smoker and non-alcoholic. Passive smoking can increase the chance of having cancer so that people should more careful about smoking as their family members can also affected by that (Linthwaite, P. (1986).

According to the patient, what is the most efficient treatment is determine from this survey. In this survey it showed that in total 51.43% patients said that homeopathy and herbal medicines are more effective. Besides that 34.29% said that chemotherapy also effective but from them some patients said that with chemo herbal and homeopathy also give lots of support to their health. Other 7.14% said surgery is more effective and rest of 7.14% said radiotherapy is more effective. By this percentage it clear that there are about 50% patients believe that homeopathy and herbal medicines can be very effective for this life threatening disease. So from this result showed how people react on their treatments. Some of them cannot even trust on their treatment so that they took herbal and homeopathy treatment. Some of them think that chemotherapy, radiotherapy

makes their health worse than before. As patients have no idea about their side effects because their doctor did not tell them that is why they scared to take chemotherapy or radiotherapy. Their doctors think that it is not important thing to tell. But it is actually the responsibility of those doctors to tell their patients that you may have these side effects so do not get scared or do not stop your treatments. One study showed that there are 46.7% patients went to pharmacists to know about their side effects. That study also showed that 60% patients demand information about their side effects. In that study it was found that 86.7% patients want to receive as much as information about side effects (Chan, H. -K., & Ismail, S. 2014). These entire ratios indicate that patients do not get proper information about their side effects from doctors so that they went to pharmacists to know about their side effects. Besides that those patients who took herbal and homeopathy medicines they said that those herbal hand homeopathy doctors guarantee them that their disease must cured by their medicines. Those patients also said as there is no side effects of those medicines so they think they get well as chemo and radiotherapy have too much side effects so they think they got more sick by those treatments. So for these reasons some patients prefer homeopathy and herbal treatments. There is another finding from this survey is according to doctor which treatment is more effective for patients. Surgery is common for all the patients of gynecological cancer and most of the time hysterectomy surgery is done (Janda, M., Gebiski, V., Brand, A., Hogg, R., Jobling, T. W., Land, R., Obermair, A. (2010). According to doctors there are 64.29% said chemotherapy is more effective and 35.71% said radiotherapy is more effective. This is because gynecological cancers are more sensitive to chemotherapy rather than radiotherapy (Jelovac, D., & Armstrong, D. K., 2011).

Doctors' suggestions to reduce side effect is another point to discuss. For this survey a bar chart was made with the ratio of reduce side effects and if the doctor provide useful suggestions or not. From this bar chart we can see that 28.57% patients said that their doctors suggest only medicines to reduce side effects and that was useful for them. And 1.43% said that medicines are not useful for their side effects. There are 20% patients said that diets and some other things like homeopathy and herbal medicines are helpful to reduce side effects also those medicines provided by their doctor are equally helpful and it means that they agreed that their doctors provide useful suggestions. But there are 50% patients who disagreed with that they said not the medicines and also those herbal and homeopathy treatments with diet cannot reduce their side

effects. From this result it also clearly showed that no patients took any psychological help or meditation for reducing their side effects. Moreover only oncologists give suggestions on these side effects. They never suggest any medicine doctor or psychologist for other help. Most of the patients said they only took suggestions from oncologists about their side effects. Very few patients said they personally meet other doctors only for reducing side effects but their oncologists never suggest them to take other opinion. One study showed there is 50% more patient survive if they take psychological help instead of only oncological help. Another study showed 70-above years patients died not because of cancers but for side effects (Ngune, I., Jiwa, M., McManus, A., & Hughes, J., 2015). Psychological therapy like relaxation, meditation, visual imagery, and hypnotherapy can reduce more side effects than only medicines. One study showed high-income countries use psychotherapy very rapidly with the traditional treatments and the patients said they feel good to use any type of psychotherapy. Another study showed that psychotherapy help to heal faster and survive longer than before. It does not mean to take only psychotherapy. It means take psychotherapy with actual treatment to work the treatment faster (Straker, N., 1997). Another study showed that 64% people with cancer need physical and practical supports but in other hand 75% people with cancer need mental and emotional support (Primeau, B. S. A., August 17, 2018). Another study showed that most of the time women need more psychological support than men (Merckaert, I., Libert, Y., Messin, S., Milani, M., Slachmuylder, J. L., & Razavi, D., 2010). All these study indicate that patients always need a psychological help for their betterment. So from my survey people can understand the importance of psychotherapy and also oncologists refer any psychologist to their patients.

Another result come from this survey is 77.14% patients didnt know anything about cancer before having the disease. Only 22.86% patients know about cancer before having the disease because they have someone in their family who have the similiar type of disease. These result indicate that if people have some knowledge about these diseases they can control or prevent the disease or can take proper treatment for the disease.

From this entire survey lots of output came but the most relevant of them were chosen to immerse in. All these results help common people in our country to be more conscious about

their health. People who concern with their own health can help themselves better than others. It is hoped that from this study people will also understand that herbal and homeopathy treatments are not safe for this type of life threatening disease. People also understand the importance of taking psychotherapy and also understand the importance of taking vaccine. This study also help to break the typical thought of our society that these problems are shameful to share and this is not something to be ashamed but to something to treat properly.

CHAPTER-5

Conclusion:

Cancer is one of the leading causes of death among people all over the world. All this is happening because of the chemicals released from industries, laboratories, research centers, nuclear power plant and also due to the chemicals use in food preservation or as fertilizers. Consumption of tobacco, cigarette and alcohol has increased vastly. People are being exposed to this pollution and are ending up getting sick. For all this matters and environmental issues chances of having cancer is rising rapidly. This is now alarming problem for everyone on the earth. So people should more careful and take some prevention to decrease the chances of having cancer.

In Bangladesh women have high chances of having gynecological cancers like cervical, ovarian and endometrial cancers. In our country most of the people are illiterate, especially woman. For this reason they have less knowledge about these diseases. They do not understand the symptoms.. All these matter actually make this gynecological cancer an alarming problem for our country.

This survey is on the patients of cervical cancer, ovarian cancer and endometrial cancer. From this I got some information about the side effects, medicines, vaccine, efficient treatments, stages of cancer, type of treatments, smoking habits, and repercussions of contraceptive pills, which may help the common people in our country to change their typical mindset towards these diseases. Moreover this survey may help married women and middle-aged women to be more careful. Besides that this survey may make doctors more attentive to their patients so that they cannot stop treatments or take some wrong treatments and also suggest them psychological help along with medicines.

All work has some limitations. My survey has also some limitations. Firstly, getting permissions in hospitals for survey is tough. Secondly, so many patients did not want to cooperate that is why

the sample size is small. Finally, after analyzing data the result showed that no patients took vaccines, psychological help and this result might be due to the small sample size.

All in all the findings of this survey may serve a purpose of making women and people in general more knowledgeable about the causes and preventions of gynecological cancer.

CHAPTER-6

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