Types of Cancer Prevalence in Al Muthanna Province for Two Years' Duration (2018-2019)

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Abstract

Objective: The aim of study to find out the prevalence of cancer in Al muthanna province, the most common type of cancer, the danger age group, gender and the site of malignancyin the body.

Methodology: The study sample about (100) case was taken from cancer patients from laboratory unit in al Hussein teaching hospital from July 2018 to September 2019 . the study design was a quantitative descriptive design . the data collection taken by the researchers was self report dichomitus, the method of self report was conceder as on type of data collections by using phrases occur or not occur in all types of cancer .

Result and Conclusion: Indicated that the age between (51-61) years was have more percentage of 29.5, female affected by cancer more than male and rural area affected by cancer is more than urban.

Recommendation: Further research do about cancer prevalence and the risk factor in the most common area in province .

Keywords: *Cancer, types, histopathology, prevalence, Al muthana.*

Introduction

Cancer is one of the most leading causes of morbidity and mortality in worldwide, it's also the second cause of death in the world, and was responsible for 8.8 million deaths in 2015. The most common organ affected by cancers include: Breast, lung, Liver, Colorectal,and Stomach. nearly 1 in 6 deaths is due to cancer. Approximately 70% of deaths from cancer occur commonly in low- and middle-income countries and Around one third of deaths from cancer are due to behavioral and dietary risks as low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use . Between 30–50% of cancers may be prevented by decrease risk factors and implementing existing evidence-based prevention strategies. The cancer burden can also reduced by early detection of cancer in the body and management of patients who have cancer. Many cancers have a high chance of cure if diagnosed in early stage of disease and treated adequately.[1]

In Iraq according to the Ministry of Health statistics in 2016 cancer is always considered a significant health problem and the second leading cause of death. The total number of cases of cancer during 2015 was 25,269 and male to female ratio 0.8:1. The most affected age group was 70 +years, and the incidence increased with age .

The top ten cancer are breast (19.1%), bronchus & lung (8.1%), leukemia (6.3%), brain & other central

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nervous system (CNS) (6.1%), colorectal (5.7%), urinary bladder (5.1%), Non-Hodgkin lymphomas (4.3%), thyroid gland (3.8%), skin (3.2%), and stomach (3.2%). The highest incidence of cancer in males was bronchus & lung cancer (6.7/100,000 males population), while in females was breast cancer (25.8/100,000 females population). The incidence of breast, bronchus & lung, brain & other CNS, colorectal, thyroid gland, and stomach cancer increased for the last 5 years (2011-2015). But the incidence of leukemia, lymphoma, and urinary bladder cancer decreased for the last 5 years (2011- 2015). While the incidence of skin cancer not change.[2]

Muthana province have cancer case by 11.9% of the area of Iraq.[3] So it most be assess for prevalence of cancer and most receiving a significant attention in Iraq as a major health problem both in terms of incidence and mortality[4,5,6].

The colorectal cancer is the third common cancer affect male in the world and second leading death in western world,it account 9.4% in male and 10.1% in female.[7]

Materials and Method

Purposive(non probability) sample was taken from cancer patients from laboratory unit in al Hussein teaching hospital from July 2018 to September 2019 . the study design was a quantitative descriptive design. (100) patient have cancer in different types.

The data collection taken by the researchers was self report dichomitus, the method of self report was conceder as on type of data collections by using phrases occur or not occur in all types of cancer .

Four questions contain the following : Age, Gender, Address and type of cancer take from patient have histopathological investigations by having malignant diseases .

Result and Discussion

Table (1) Distribution of the Study Samples by Socio- Demographic Characteristics

Items	Sub-groups	Study group Total = 95	
		Frequency	Percentage
Age/Years	21-30	6	6.3
	31-40	18	18.9
	41-50	19	20.0
	51-60	28	29.5
	61-70	13	13.7
	71>=	11	11.6
	Mean = 52.63	**Standard deviation = ± 14.23**	
Gender	Male	36	37.9
	Female	59	62.1
Residency	Urban	36	37.9
	Rural	59	62.1

Table (1): show that variable age group was affect by cancer and the age between 51- 60 were mostly affected, this finding is identical to cancer research in UK, About 9 in 10 cancer case in UK are in age 50 or over and this is true for most types of cancer .this due to cell damage over time that can some time lead to cancer, Also this study identical with study approved by the cancer .net editorial board in 2019 that greatest risk age was 60 or older about 60% of people who have cancer . Also Mary C. et al say that cancer consider an age –related disease because the incidence of most cancer increase with age.[8]

Also this table show that the female more affected by cancer than male mainly by breast cancer this result is

identical to study done in USA in which they show that Breast cancer is the most common cancer in American women,But every woman should know about the risks for breast cancer and what they can do to help lower their risk.[9,10,11]

Table (2) Distribution of the Study Samples by type of cancer

Items	Sub-groups	Study group Total = 95	
		Frequency	Percentage
Cancer type	Breast cancer	40	42.1
	Prostate	7	7.4
	Brain	3	3.2
	rectum	2	2.1
	Kidney	4	4.2
	Lung	6	6.3
	Thyroid	5	5.3
	Nose	1	1.1
	Larynx	2	2.1
	Bone	4	4.2
	Ovary	2	2.1
	Skin	1	1.1
	Urinary bladder	4	4.2
	Blood	1	1.1
	Uterus	4	4.2
	Pancreas	1	1.1
	Lymph node	2	2.1
	Colon	4	4.2
	Stomach	1	1.1
	Gall bladder	1	1.1
	Total	95	100

Table (2): Show that breast cancer is more common type in Al-Muthanna government this result was identical to The American Cancer Society result that find **Women at high risk for breast cancer** is due to their family history, a genetic mutation, or other risk factors .

The American Cancer Society recommends the following for women at average risk for breast cancer: **Women ages 40 to 44** should have the choice to start yearly breast cancer screening with a mammogram (x-ray of the breast) if they wish to do so. **Women age 45 to 54** should get a mammogram every year. **Women 55 and older** can switch to a mammogram every 2 years, or can continue yearly screening.

Screening should continue as long as a woman is in good health and is expected to live at least 10 more years.[12,13]

There are also increase of frequency of prostate cancer in male in Al-Muthana government .this identical to study done by Husain HY, Al-Alwacahi SF that shows Prostate cancer is the second most frequent malignancy (after lung cancer) in men worldwide, counting 1,276,106 new cases and causing 358,989 deaths (3.8% of all deaths caused by cancer in men) in 2018[14,15]. The incidence and mortality of prostate cancer worldwide correlate with increasing age,they shows that Diet and physical activity play an important role in prostate cancer development

and progression. Dietary factors are mainly associated with the observed worldwide and ethnic differences in the incidence rates of prostate cancer.[16,17,18,19,20] The total number of cases of cancer during 2015 was 25,269 and male to female ratio 0.8:1. The most affected age group was 70 +years, and the incidence increased with age bronchus & lung (8.1%), thyroid gland (3.8%),%), colorectal (5.7%), while in females was breast cancer (25.8/100,000 females population). The incidence of breast, bronchus & lung, brain & other CNS, colorectal, thyroid gland, and stomach cancer increased for the last 5 years (2011-2015).this is correlate to this study while in the study done by Environmental Statistics in Iraq Report 2009 the incidence of leukemia, lymphoma, and urinary bladder cancer decreased for the last 5 years (2011- 2015) this is also identical to this study done in Al –Mothana government .

Table (3): The association and correlation between type of cancer and Socio- Demographic Characteristics:

Items	Sub-groups	Type of cancer																				
		Breast cancer	Prostate	brain	rectum	Kidney	lung	thyroid	Nose	larynx	bone	ovary	skin	Urinary bladder bladder	blood	uterus	pancreas	Lymph node	colon	stomach	Gall bladder	total
Age/Years	21-30	0	0	1	0	0	0	1	0	1	0	0	0	2	0	0	0	0	1	0	0	6
	31-40	0	1	0	0	1	1	1	1	0	2	0	0	1	0	0	0	0	0	0	1	18
	41-50	7	2	1	0	0	4	3	0	0	0	1	0	0	0	0	0	1	0	0	0	19
	51-60	18	0	0	2	2	0	0	0	0	1	0	0	0	0	2	0	1	2	0	0	28
	61-70	3	2	1	0	1	1	0	0	0	0	0	0	1	1	1	0	0	1	1	0	13
	71>=	3	2	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0	0	0	0	11
	Total	**40**	**7**	**3**	**2**	**4**	**6**	**5**	**1**	**2**	**4**	**2**	**1**	**4**	**1**	**4**	**1**	**2**	**4**	**1**	**1**	**95**
	Chi-square = 126.477 df= 95 p. value= 0.017 significance= significant correlation= 0.031																					
Gender	Male	39	1	0	1	1	2	2	0	2	1	2	1	2	0	4	0	0	1	0	0	59
	Female	1	6	3	1	3	4	3	1	0	3	0	0	2	1	0	1	2	3	1	1	36
	Total	**40**	**7**	**3**	**2**	**4**	**6**	**5**	**1**	**2**	**4**	**2**	**1**	**4**	**1**	**4**	**1**	**2**	**4**	**1**	**1**	**95**
	Chi-square = 60.517df= 19 p. value= 0.0000 significance= significant correlation= 0.371																					
Residency	Urban	16	3	1	0	1	2	1	0	0	2	1	0	1	1	3	0	2	2	0	0	36
	Rural	24	4	2	2	3	4	4	1	2	2	1	1	3	0	1	1	0	2	1	1	59
	Total	**40**	**7**	**3**	**2**	**4**	**6**	**5**	**1**	**2**	**4**	**2**	**1**	**4**	**1**	**4**	**1**	**2**	**4**	**1**	**1**	**95**
	Chi-square = 14.845df= 19 p. value= 0.732 significance= non-significant correlation= -0.052																					

Table (3): show that significant association between age and type of cancer the common age group was between (51-60) which is breast cancer . this study identical to study done by the National Cancer Institute (NCI) which found that Breast cancer is most common cancer affect females over the age of 50 years so doctors most often diagnose breast cancer in females aged 55-64 years. The NCI Based on data from 2012-2016 saw that the median age of diagnosis in females with breast cancer was 62 years old. The NCI also report that of the 437,722 females that doctors diagnosed breast cancer in between 2012 and 2016:

- 1.9% were aged 20–34 years
- 8.4% were aged 35–44 years
- 20.1% were aged 44–55 years

- 25.6% were aged 55–64 years
- 24.8% were aged 65–74 years
- 13.7% were aged 75–84 years
- 5.6% were aged 84 years+
- Medically reviewed by Yamini Ranchod, PhD, MS on July 3, 2019 — Written by Lana Burgess.[21]

This table show that there is significant association between age and gender,cancer is more affect female than male, from total 95 case was taken in AL-Hussein teaching hospital, about 59 female was affect by cancer this study is identical to study done by Moynihan C. that show female is more affect than male .[22] Also there is no significant association between the site of case affected by cancer and the type of cancer . there is increase incidence of cancer in rural area than in urban area this study identical to study done by Meilleur A et.al in which. there is increase chance of having cancer in rural area,and The urban decline in incidence rate was greater than in rural populations (10.2% vs. 4.8%, respectively). Rural cancer disparities included higher rates of tobacco-associated, HPV-associated, lung and bronchus, cervical, and colorectal cancers across most population groups. Furthermore, HPV-associated cancer incidence rates increased in rural areas (APC = 0.724, $P < 0.05$), and decrease of preventive screening modalities for (e.g., colorectal and cervical cancers) were higher in rural compared with urban For many rural populations, cancer mortality is not decreasing; it is steady and, in some cases, rising. Several studies have documented persistently elevated cancer incidence and mortality in rural communities compared with urban areas[23-26]. also found, In 2010 to 2012, the highest rates of poverty and uninsured status in the nation were found in small rural counties and in large inner cities[27]. Also study done by Foutz J, Artiga S, Garfield R. 2017,large rural populations did not expand Medicaid, leaving millions of people still without health insurance[28]. Furthermore, there are documented barriers to health care access in rural communities. Many rural residents live in health care provider–shortage areas, may have fewer choices in care, and may need to travel long distances just to see a primary care physician. And rural area have lower rates of cancer screening, experience and lower quality cancer care [23-24]. Furthermore, numerous studies have identified higher rates of cancer-risk behaviors among rural residents, which can contribute to the elevated incidence rates of cancer . Higher rates of tobacco use and obesity in rural populations are consistently reported[29-33]. In addition, human papillomavirus (HPV) vaccination rates are lagging in rural areas, with lower rates associated with increasing rurality[34].Also it was seen that renal disease is the most common causing of malignancy in the kidney[35].

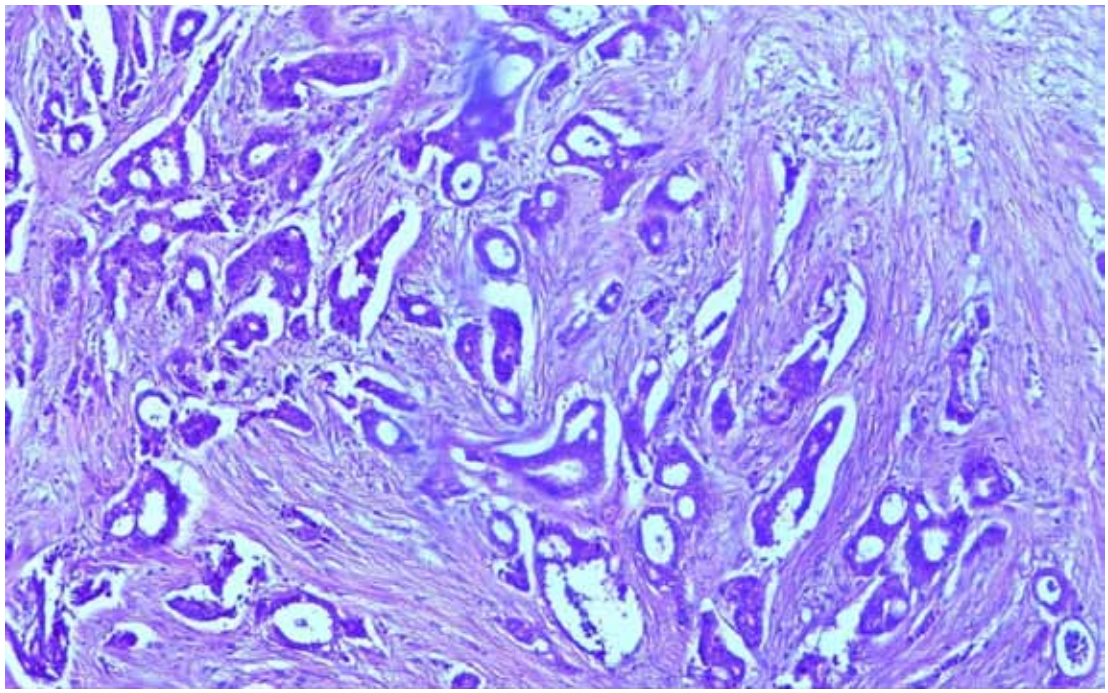

Figure (1): Invasive Ductal Carcinoma with H & E stain {40X} .

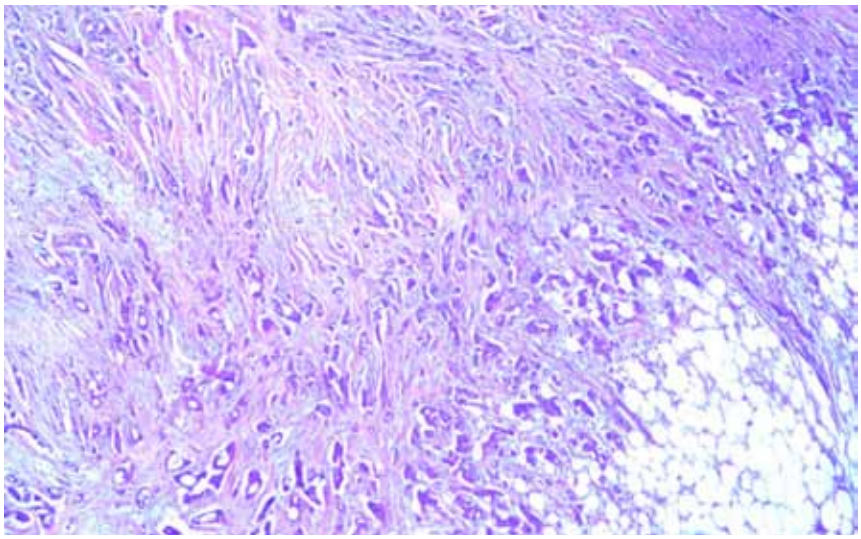

Figure (2): Invasive Ductal Carcinoma with H & E stain {40X}.

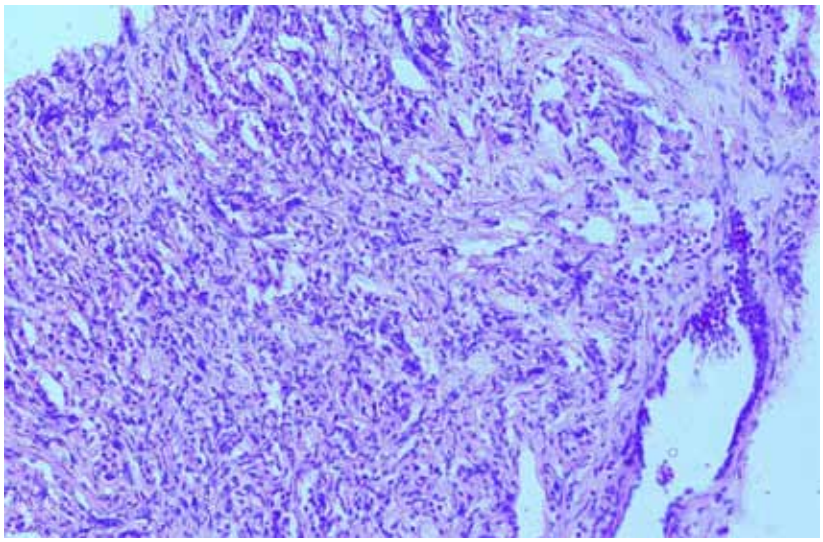

Figure (3): Prostatic Carcinoma with H & E stain {40X}.

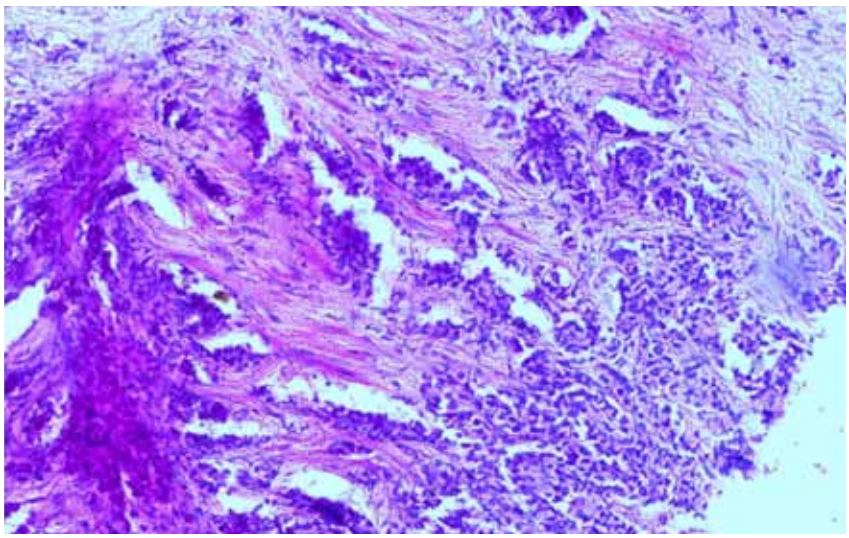

Figure (4): Prostatic Carcinoma with H & E stain {40X} .

Conclusion

1. Early Finding of cancer can help in rapid treatment and decrease the death rate between women so if breast cancer early diagnosed specially when it's very small, that not spread, might be easier to treat and can help to prevent deaths from the cancer.
2. Getting regular screening tests is the most reliable way to find cancer like breast cancer so it should be screened with MRI along with a mammogram.
3. Talk with a health care provider about risk for cancer and the best screening plan for it.

Recommendation:

1. Regular self -examination of female to the breast and the province must do educational program to the way for breast examination .
2. Improve personal habit like regular exercise, decrease fatty diet and eating more vegetable and fruit .
3. Give up smoking.
4. Regular check up to detect any abnormal growth in the body. **Women ages 40 to 44** should have the choice to start yearly breast cancer screening with a mammogram (x-ray of the breast) if they wish to do so. **Women age 45 to 54** should get a mammogram every year. **Women 55 and older** can switch to a mammogram every 2 years, or can continue yearly screening.
5. Further research do about cancer prevalence and the risk factor in the most common area in province .

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both environmental and health and higher education and scientific research ministries in Iraq

Conflict of Interest: The authors declare that they have no conflict of interest.

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References

1. GBD 2015 Risk Factors Collaborators. Global, regional, and national comparative risk assessment of 79 behavioral, environmental and occupational, and metabolic risks or clusters of risks, 1990-2015 a systematic analysis for the Global Burden of Disease Study 2015. Lancet. 2016 Oct; 388 (10053):1659-1724.

2-Iraqi Cancer Board Annual Report Iraqi Cancer Registry. Minister of Health Doctor Adela Hmood Hussein Head Iraqi Cancer Boardp1-6Minister of Health Doctor Adela, 2015.

3- MINISTRY OF HEALTH IRAQI CANCER REGISTRY 2009: IRAQI CANCER BOARD IRAQI CANCER REGISTRY CENTER Tele: (+) 9641 – 4150292 Iraqi_cancerboard@yahoo.com BAGHDAD – IRAQ 2012 .

4. Husain HY, Al-Alwacahi SF. Incidence rates, pattern and time trends of registered cancer in Iraq (1991-2008): Population and hospital based registry. Open Access Libr J 2014;1:1-6. Available from: http://www.oalib.com/journal. [Last accessed on 2014 Apr 15].
5. Hussain A, Habib OS. Incidence of cancer in Basrah Results of a household survey Asian Pac J Cancer Prev 2015;16:163.
6. Mohsin AA, Al-Elwe WM, Hasan JG, Al-Haroon SS, et al. Experience and outcome of population-based cancer registration in Basrah-Southern Iraq in 2005-2008. Asian Pac J Cancer Prev 2010;11:1151-4.
7. Suheil S.,Clinicopathological study of colonic polyps by application of P53 & KI67 .2014:1-2.
8. Mary C. White, ScD, Dawn M. Holman, MPH, Jennifer E. Boehm, MPH, Lucy A. Peipins, PhD, Melissa Grossman, MPH, and S. Jane Henley, MSPH Age and Cancer Risk A Potentially Modifiable Relationship;Am J Prev Med. 2014 Mar; 46(3 0 1): S7–15.
9. Centers for Disease Control and Prevention (CDC). Cancer and women. Accessed At https://www.cdc.gov/cancer/dcpc/resources/features/womenandcancer/index.htm on May 6, 2019.
10. Jemal A, Ward EM, Johnson CJ, Cronin KA, Ma J, Ryerson AB, Mariotto A, Lake AJ, Wilson R, Sherman RL, Anderson RN, Henley SJ, Kohler BA, Penberthy L, Feuer EJ, Weir HK. Annual Report to the Nation on the Status of Cancer, 1975-2014, Featuring Survival. J Natl Cancer Institute. 2017; 109(9): 1-19.
11. Smith RA, Andrews KS, Brooks D, Fedewa SA, Manassaram-Baptiste D, Saslow D, Wender RC. Cancer screening in the United States, 2019: A review of current American Cancer Society guidelines and current issues in cancer screening.

CA: Cancer J Clin. 2019; 69(3): 184-210. Last Medical Review: August 1, 2019 Last Revised: August 1, 2019

12. American Cancer Society medical information is copyrighted material. For reprint requests, please see our Content Usage Policy. American Cancer Society (ACS). Cancer Facts & Figures 2019. Atlanta, Ga: American Cancer Society; 2019. Accessed at https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2019.html on May 6, 2019.
13. Centers for Disease Control and Prevention (CDC). Cancer and women. Accessed at https://www.cdc.gov/cancer/dcpc/resources/features/womenandcancer/index.htm on May 6, 2019.
14. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2018;68(6):394- 424. 2.
15. Ferlay J EM, Lam F, Colombet M, Mery L, Pineros M, Znaor A, Soerjomataram I, et al. Global cancer observatory: cancer today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc. fr/today, Accessed 02 February 2019.
16. Chan JM, Gann PH, Giovannucci EL. Role of diet in prostate cancer development and progression. J Clin Oncol. 2005;23(32):8152-8160. doi: 10.1200/JCO.2005.03.1492. [PubMed] [CrossRef] [Google Scholar]
17. Giovannucci E, Rimm EB, Colditz GA, Stampfer MJ, Ascherio A, Chute CG, Willett WC. A prospective study of dietary fat and risk of prostate cancer. J Natl Cancer Inst. 1993;85(19):1571-1579. doi: 10.1093/jnci/85.19.1571.
18. Kolonel LN, Nomura AM, Cooney RV. Dietary fat and prostate cancer: current status. J Natl Cancer Inst. 1999;91(5):414-428. doi: 10.1093/jnci/91.5.414.
19. Platz EA, Leitzmann MF, Michaud DS, Willett WC, Giovannucci E. Interrelation of energy intake, body size, and physical activity with prostate cancer in a large prospective cohort study. Cancer Res. 2003;63(23):8542-8548.
20. Willis MS, Wians FH. The role of nutrition in preventing prostate cancer: a review of the proposed mechanism of action of various dietary substances. Clin Chim Acta. 2003;330(1-2):57-83. doi: 10.1016/S0009-8981(03)00048-2. The risk of breast cancer in different age groups Juha Peltonen Content may be subject to copyright.
21. by Yamini Ranchod, PhD, MS on July 3, 2019— Written by Lana Burgess
22. Moynihan C. Men, women, gender and cancer. Eur J Cancer Care (Engl). 2002 Sep;11(3):166-72.
23. Milleur A,Subramanian SV, Plascak JJ, Fisher JL, Paskett ED, Lamont EB. Rural residence and cancer outcomes in the United States: issues and challenges. Cancer Epidemiol Biomarkers Prev 2013;22:1657–67.
24. Chow CJ, Al-faie WB, Abraham A, Markin A, Zhong W, Rothenberger DA, et al. Does patient rurality predict quality colon cancer care? A population-based study. Dis Colon Rectum 2015;58:415–22.
25. Kinney AY, Harrell J, Slattery M, Martin C, Sandler RS. Rural-urban differences in colon cancer risk in blacks and whites: the North Carolina Colon Cancer Study. J Rural Health 2006;22:124–30.
26. Singh GK,Williams SD, Siahpush M, Mulhollen A. Socioeconomic, rural-urban, and racial inequalities in US cancer mortality. Part I. All cancers and lung cancer and part II-colorectal, prostate, breast, and cervical cancers. J Cancer Epidemiol 2011;2011:107497.
27. National Center for Health Statistics. Health US, 2015: with special feature on racial and ethnic health disparities. Hyattsville, MD: National Center for Health Statistics; 2016.
28. Foutz J, Artiga S, Garfield R. The role of medicaid in rural America; 2017. Available from: http://kff.org/medicaid/issue-brief/the-role-of-medicaid-in-rural-america/.
29. Roberts ME,Doogan NJ, Kurti AN, Redner R, Gaalema DE, Stanton CA, et al. Rural tobacco use across the United States: how rural and urban areas differ, broken down by census regions and divisions. Health Place 2016;39:153–9.
30. Doescher MP, Jackson JE, Jerant A, Gary Hart L. Prevalence and trends in smoking: a national rural study. J Rural Health 2006;22:112–8.
31. Doogan NJ, Roberts ME, Wewers ME,Stanton CA, Keith DR, Gaalema DE, et al. A growing geographic disparity: rural and urban cigarette smoking trends in the United States. Prev Med.

2017 Mar 16. Available from: https://www.ncbi.nlm.nih.gov/pubmed/28315761.

32. Chang JT,Levy DT,Meza R. Trends and factors related to smokeless tobacco use in the United States. Nicotine Tob Res 2016;18:1740–8.
33. Befort CA, Nazir N, Perri MG. Prevalence of obesity among adults from rural and urban areas of the United States: findings from NHANES (2005-2008). J Rural Health 2012;28:392–7.
34. Henry KA, Stroup AM, Warner EL, Kepka D. Geographic factors and human papillomavirus (HPV) vaccination initiation among adolescent girls in the United States. Cancer Epidemiol Biomarkers Prev 2016;25:309–17.
35. Hameed, AL-Ftlawy Dergham. Effectiveness of an educational program upon provided nurses knowledge about complication in peritoneal dialysis unite,unpublished doctoral dissertation, Baghdad University (2006):129-3.