



## The frequency of four common cancers in Kermanshah City, Iran, during the years 2004-2011

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### Original Article

#### Abstract

**BACKGROUND:** Cancer is one of the most prevalent diseases in today's civilized world, with an increasing number of sufferers with each passing day. The aim of this study was to determine the prevalence of common cancers in Kermanshah City, Iran, in a period of eight years between 2004 and 2011.

**METHODS:** This was a historic cohort study. Data were collected from Kermanshah Province Health Center (Cancer Registry). Data analysis was performed using SPSS software.

**RESULTS:** 6,146 people were diagnosed with cancer in Kermanshah during these eight years. The prevalence of skin, stomach, breast, and bladder cancers, without considering the patients' genders, was 35.24, 24.58, 23.73, and 16.45 percent, respectively. The highest frequency belonged to skin cancer with 309 persons in 2007.

**CONCLUSION:** Considering the fact that cancer has increased in the city of Kermanshah, it is necessary to change the lifestyle of all the people in order to prevent and reduce different types of cancer. Managers, officials, and health professionals are the most suitable individuals that can start changing the lifestyle, habits, and the improper way of living in this community.

**KEYWORDS:** Breast Cancer, Skin Cancer, Bladder Cancer, Stomach Cancer

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### Introduction

Cancer is a generic name for a large number of diseases associated with abnormal growth of cells.<sup>1</sup> Cancer is one of the major causes of mortality in today's human societies, and accounts for about 10% of worldwide death counts in 2015.<sup>2</sup> Cancer refers to diseases that, due to molecular defects, cause changes in cellular activity, and can be mutated in common genes.<sup>3,4</sup> Despite the remarkable advances in medical sciences, cancer remains as one of the most important diseases of the

present century, and is the second leading cause of death after cardiovascular diseases.<sup>5,6</sup>

The burden of cancer is rising due to various risk factors in the world, with most of these deaths occurring in economically developing countries, while based on the existing data, many of these cancer cases can be prevented with utilizing the existing knowledge and control programs.<sup>7</sup> Cancer has a special place in health care systems, due to its irreparable complications and heavy costs, and its diagnosis and treatment. More than half of the cancer cases and 60% of deaths from cancer in developing countries are changing on a daily basis as lifestyles change.<sup>8,9</sup> By 2015,

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about 54% of the world's total mortality was due to illicit diseases, with cancer contributing to around 13% of total deaths.<sup>10</sup>

Skin cancer is a major public health problem. Recent studies in most countries indicate a high prevalence of skin cancer, and an increasing incidence of this disease. Despite the decrease in the incidence of cancer in recent years, skin cancer is increased by 3-5 percent each year, despite the existing potential for prevention and treatment.<sup>11</sup> Skin cancers is one of the most important diseases with regard to the human skin. This cancer is one of the most common cancers in the whole world, and is associated with high levels of disability and relatively low mortality;<sup>12</sup> the incidence of this cancer has increased in recent decades.<sup>13</sup>

Upper gastrointestinal cancers, including gastric cancer, are among the most common ones.<sup>14</sup> Gastric cancer is the fifth cancer after breast, skin, colorectal, and esophageal cancers in Kermanshah Province, Iran.<sup>15</sup>

Among all the cancers concerning women, breast cancer accounts for a high percentage of deaths and mortality, and is ranked first in the world. This particular type, accounts for 26% of all newly diagnosed cases of cancer.<sup>16</sup> The incidence of breast cancer in the world is 38%, which accounts for 15% of the deaths associated with women's cancers.<sup>17</sup> According to the statistics, breast cancer constitutes for 12.6% of all the cancers in Iran.<sup>18</sup>

Bladder cancer is one of the most important health issues, and the most common malignancy in the urinary tract;<sup>19</sup> it is also the second genital tumor that leads to mortality and morbidity in both men and women.<sup>20</sup> In addition, it has the most costly treatment compared to other types of cancer.<sup>21</sup> Bladder cancer is the third most common cancer in men in Iran.<sup>22</sup> According to 2008 statistics, 386,3000 new cases of bladder cancer are reported with 150,200 deaths worldwide.<sup>23</sup>

Cancer is one of the major healthcare issues

in the developing countries and is growing rapidly.<sup>24</sup> 90-95 percent of cancers are caused because of environmental and lifestyle factors. The most important risk factors for cancer among the environmental factors are smoking, obesity, drinking alcohol, infectious agents, sunlight, mental stress, environmental contaminants, and foodstuff.<sup>25</sup> One of the main needs of health care decision-makers is monitoring and controlling diseases in terms of spatial dispersion, and number of affected people. By disease modeling, one can rank the important factors in development of a disease; on the other hand, if location is included in this model, it will have the potential to predict the spatial expansion of a disease as well. Out of three major elements that influence the disease, namely person, time, and place of analyzing, the element of place has always been difficult and time consuming.<sup>26</sup>

Given that cancer is the third leading cause of death in Iran and the world after cardiovascular diseases and accidents, diagnosis of cancer is crucial at all age groups and cities over time. The aim of this study was to compare the four most common cancers of Kermanshah City at all age groups, and over a span of eight years between 2004 and 2011.

## Materials and Methods

The statistical population of this study included all individuals of different ages who were diagnosed with one of four cancers, skin, stomach, bladder, and breast, between the years 2004 and 2011 (eight years). This was a historical cohort study, and the statistical population consists of 6,146 patients diagnosed with cancer (if one person had more than one cancer, he/she was considered in all relevant cancer groups).

The obtained data were collected by referring to Kermanshah Province Health Center (Cancer Registry) archives. Breast cancer existed in both genders; however, since this cancer is more common in women, the

present study addresses this cancer exclusively with regard to women.

Data were analyzed using SPSS software (version 18, SPSS Inc., Chicago, IL, USA) (descriptive statistics) and Microsoft Excel software (Microsoft Corp., Redmond, WA, USA) (chart analysis).

## Results

Among the patients with skin, stomach, breast, and bladder cancers, 1,277 (58.66%), 1,036 (68.56%), 0 (0%), and 829 (82%) subjects were men, and 889 (41.4%), 475 (31.44%), 1,458 (100%), and 182 (18%) patients were women, respectively. In addition, without gender segregation, among 6,146 individuals suffering from cancer as a whole, share of each of the skin, stomach, breast, and bladder cancers was 2,166 (35.24%), 1,511 (24.58%), 1,458 (23.73%), and 1011 (16.45%) individuals, respectively. The highest frequencies in skin, stomach,

breast, and bladder cancers without gender segregation were 309 in 2006, 254 in 2010, 251 in 1990, and 181 in 2009, and the lowest incidence rates were 224 in 2007, 123 in 2004, 110 in 2005, and 84 in 2006, respectively (Table 1).

Figure 1 shows the trend of cancer cases without gender segregation (except breast cancer, which was only measured in women).

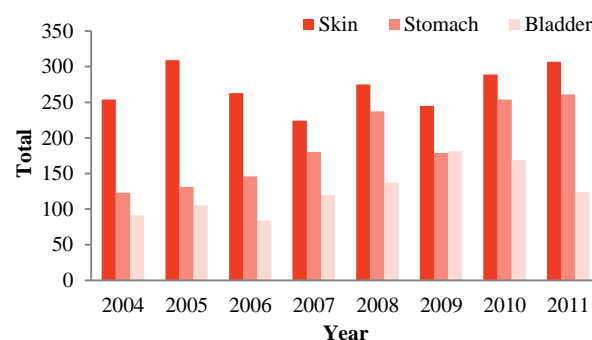
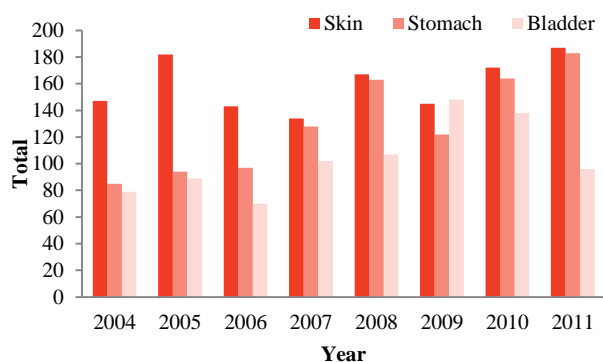


Figure 1. The frequency of three prevalent cancers without gender segregation in Kermanshah City, Iran, during the years 2004-2011

Table 1. The frequency of four prevalent cancers in Kermanshah City, Iran, during the years 2004-2011, in terms of sex

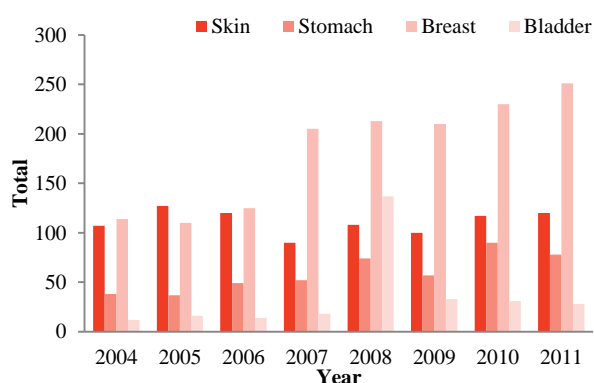
	Sex	Skin	Stomach	Breast	Bladder	Total
2004	Men	147	85	-	79	311
	Women	107	38	114	12	271
	Total	254	123	114	91	582
2005	Men	182	94	-	89	365
	Women	127	37	110	16	290
	Total	309	131	110	105	655
2006	Men	143	97	-	70	310
	Women	120	49	125	14	308
	Total	263	146	125	84	618
2007	Men	134	128	-	102	364
	Women	90	52	205	18	365
	Total	224	180	205	120	729
2008	Men	167	163	-	107	437
	Women	108	74	213	30	425
	Total	275	237	213	137	862
2009	Men	145	122	-	148	415
	Women	100	57	210	33	400
	Total	245	178	210	181	815
2010	Men	172	164	-	138	474
	Women	117	90	230	31	468
	Total	289	254	230	169	942
2011	Men	187	183	-	96	466
	Women	120	78	251	28	477
	Total	307	261	251	124	943
Overall		2166	1511	1458	1011	6146

Among the three common malignancies in the men population, skin cancer had the highest amount in the studied eight years, followed by gastric and bladder cancers (Figure 2).



**Figure 2. The frequency of three prevalent cancers among the men in Kermanshah City, Iran, during the years 2004-2011**

Four commonly occurring cancers in women were breast, skin, stomach, and bladder cancers, respectively, shown from highest to lowest in order in the studied eight years (Figure 3).



**Figure 3. The frequency of four prevalent cancers among the women in Kermanshah City, Iran, during the years 2004-2011**

## Discussion

The present study evaluated the prevalence of four common cancers in Kermanshah City, in a span of eight years; since no similar study had been conducted in this region. In order to

compare these cancers, each of them will be discussed separately.

In this study, the frequency of skin cancer was of 58.60 and 41.40 percent among the men and women, respectively. Yazdanfar and Ghasemi showed that most of the people with skin cancer in Hamadan, Iran, were men (67.2%) during the years 1991-2007;<sup>12</sup> which is consistent with the results of the present study that speaks of the higher prevalence of this malignancy in men. A study by Wallberg and Skog in Sweden also presents results that are consistent with the present study in terms of the prevalence of this cancer in men.<sup>27</sup> Afzali et al., which studied the data collected during a period between the years 2000 and 2012, showed that the rates of skin cancer in Kermanshah were 15.84% in men and 13.69% in women;<sup>28</sup> which is consistent with the results of our study. This high prevalence in the men seems to be due to routine activities in open and sunny environments, or because of being more exposed to cancerous substances.<sup>29</sup>

According to the results of the present study, 56.68% of the patients with gastric cancer were men; which indicates the high rate of this malignancy among this gender. The results of Veisani et al. research showed that 178 men (74.5%) and 61 women (25.5%) had gastric cancer in Sanandaj City, Iran, during a period between 2006 and 2010;<sup>30</sup> this high incidence of cancer in the male gender is consistent with the results of the present study. Keyhanian et al. showed that 71.53% of cases with gastric cancer in Ramsar City, Iran, during the years 2002-2009, were men,<sup>31</sup> which is consistent with the present work. Our findings also showed that the trend of gastric cancer was significantly increasing during the years 2004 up to 2009. The study conducted by Enayatrad and Salehiniya showed that the incidence of gastric cancer in Iran was increasing during 2003-2009, and it was significantly decreased from 2009 to 2010.<sup>32</sup> The incidence of this disease has declined in

some advanced societies, due to appropriate interventions such as health education in nutrition, and control of predisposing behaviors.<sup>33</sup>

The results of our study indicate that breast cancer has risen from 114 to 251 cases during the years 2004-2011. A study by Fazeli et al. in Markazi Province, Iran, showed that there was no significant difference in the incidence of breast cancer during the years 2007-2012,<sup>16</sup> which is not consistent with the results of this study. Many variables such as education level, history of menopause, history of abortion, breastfeeding, body mass index (BMI), etc. can affect the prevalence of breast cancer.<sup>34</sup>

In the current study, the trend of the prevalence of bladder cancer over the course of studied eight years was both increasing and decreasing, while having an incremental trend most of the time, which peaked in 2009. In addition, the same trend repeated in terms of gender, both in women and men. The incidence of bladder cancer in western countries is decreasing,<sup>35,36</sup> which is incompatible with the results of this study. The occurrence of this cancer in different regions is subject to changes in the customs and cultures.<sup>37</sup> Given the differences in the incidence of bladder cancer in different areas, it can be concluded that the risk of this cancer is partly determined by race and environmental differences.<sup>38</sup>

### Conclusion

The results of the current study showed that 82% of the population suffering from cancer, were the men, and the men to women ratio was high in this disease.

### Conflict of Interests

Authors have no conflict of interests.

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