A Review of Cancer Research Studies in Albania: How Publications Influence Cancer Prevention

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Abstract: Nowadays, cancer is the second leading cause of death in Albania. Most cancer cases are detected at later stages when chances of healing are scarce. Although considerable financial resources for cancer research are allocated worldwide, efforts to implement the data obtained from such work are still lagging behind. A review of research done in the country on cancer is important as results reported worldwide. Purpose: To review the cancer research studies performed in Albania focusing on risk factors, early detection and on screening behaviours. Methods: The systematic electronic search for articles published without a time limit included online libraries of Ovid PubMed, Google Scholar, Medline with Full Text and Medscape articles discussing the study objectives. A total of 10 studies were identified which met the inclusion criteria. The categorization was done for the type of cancer included the number of publications, the first author and year of article publishing, method and main results. Results: Most of the studies provided more data on the incidence of different types of cancer, but little information on its association with major risky factors. Also, there are few studies on early detection (ED) focusing on screening behaviors. Conclusions: More cancer research is needed in a larger population in order to strengthen findings and to design effective prevention strategies.

Keywords: *review literature; Albanian study; cancer; screening behavior; risk factor; knowledge and awareness.*

How to cite: Lalo, R., & Kamberi, F. (2018). A Review of Cancer Research Studies in Albania: How Publications Influence Cancer Prevention. *Eastern-European Journal of Medical Humanities and Bioethics*, 2(2), 31-42.
<https://doi.org/10.18662/eejmhb/13>

Introduction

Nowadays, cancer represents an enormous global issue (Ministry of Health of Albania, 2011). Cancer is a leading cause of death worldwide in countries of all income levels. To add to the existing burden, the number of cancer cases and deaths is expected to grow rapidly as populations grow, age, and adopt lifestyle behaviors that increase cancer risk. This is especially important in low- and middle-income countries (LMIC) as they undergo economic transition, which includes greater mechanization of transport and labor, cultural shifts in the roles of women, and increased exposure and access to international markets. As a result, many of the lifestyle risk factors, such as tobacco use, physical inactivity, excess body weight, and reproductive patterns, which are already prevalent in high-income countries (HIC), are also becoming increasingly common in LMICs (Torre, Siegel, Ward, & Jemal 2015). The global cancer burden is estimated to have risen to 18.1 million new cases and 9.6 million deaths in 2018. Lung cancer is the most commonly diagnosed cancer in men (14.5% of the total cases in men and 8.4% in women) and the leading cause of cancer death in men (22.0%), this is followed by prostate cancer (13.5%) and colorectal cancer (10.9%) for incidence. Breast cancer is the most commonly diagnosed cancer in women (24.2%), i.e. about one in 4 of all new cancer cases diagnosed in women worldwide are breast cancer (GLOBOCAN, 2018).

In Albania, as in many other countries of the world, cancer represents a growing concern, already a serious problem responsible for 17% of all deaths, which needs to be addressed by a Public Health approach. Based on data from the Ministry of Health of Albania, cancer is the leading cause of mortality in the country after cardiovascular diseases. Leading forms of cancer in our country in terms of frequency are: lung (18.1%), skin (17.2%), urinary tract cancer (7.6%) for males; and breast (27.8%), skin (13.6%), central nervous system cancer (6.4%) followed by cervix uteri cancer (6.2%) for females. Although several efforts to control cancer are underway, cancer in Albania is often detected in the later stages. Cost limitations, inadequate technology, and insufficient training of medical personnel for widespread screening measures have severely limited cancer screening in Albania. In this situation, reducing the late-stage rate by increasing the public awareness and training of the medical personnel can have a great impact on the disease and, therefore, emphasis should be placed on health education and awareness among the population and the health care practitioners (Ministry of Health of Albania, 2011). Also, research

studies have been an important contributor to reduced cancer incidence and increased survival. In 2001, Smith noted, "The main aim of health research is to improve the health of people" (Bowden et al., 2018). One of the ways in which research can influence practice is through its contribution to the evidence base supporting clinical guidelines (Lewison & Sullivan, 2008). A review of research done in the country on cancer is important as results reported worldwide, particularly in Western developed countries, may not necessarily be the same in a developing country as Albania. In relation to Albanian studies on cancer, the present review addressed on following four basic questions: 1. Which Albanian studies on most prevalent cancer were performed in the last years and which risk factors were identified in these studies? 2. How many studies on early detection (ED) were performed focusing on screening behavior and which forms of ED were analysed? 3. Which is the aim of the studies about knowledge and awareness of cancer, risk factors and forms of ED? 4. What have been the methods applied by the authors of these Albanian studies?

Methodology

Search Procedures

Systematic electronic search for articles published without a time limit included online libraries of Ovid PubMed, Google Scholar, Medline with Full Text and Medscape articles. A literature review of cancer research articles performed in Albania discussing the study objectives, written in English, included the key words as "cancer", "albanian studies", "risk factor", "screening behaviours", "knowledge and awareness". The control for final inclusion of articles was conducted independently by the authors in order to reduce the errors. The search was conducted in accordance with the systematic review guidelines of the literature (Higgins & Green, 2008).

Inclusion and exclusion criteria, categorization and synthesis of data

Inclusion criteria were original research studies about different types of cancer with full text, available for free. The specific search was also performed in cancer-related websites for Albania related information.

Exclusion criteria were unpublished manuscripts or doctoral dissertations, book chapters and abstract book of conference.

The research process resulted in the identification of more than 40 potential items, but the analysis included the original results of 10 studies related to the topic of interest, but the rest of the articles were utilized for

writing background information of the article. The quality assessment was carried out using the quality evaluation criteria (Kmet, Lee, & Cook, 2004).

The *categorization* was done for the type of cancer included the number of publications, the first author and year of article publishing, method and main results. The order of the articles in the table was made with reference to the National Cancer Control Program 2011-2020 data on the most prevalent malignant cancer in Albania. The application of meta analysis was not possible because of heterogeneity of the method. The order of the articles was conducted by the most prevalent cancer in Albania related to gender.

Results and discussion

Our search resulted in a selection of 10 articles from 40 Albanian research studies performed about different type of cancer, published in national or/and international journals, indexed or not.

Details of all 10 Albanian cancer studies are shown in table 1.

Table.1: Summary of the reviewed Articles

Type of cancer	Author and Year	Methods	Main findings
1. Most prevalent cancer by gender a) Lung cancer for male. b) Breast cancer for female N=3.	a) Lung cancer (LC) (Nikolla, Nanushi, Vyshka, & Hafizi, 2013)	A retrospective study that included 45 female diagnosed with LC. A discussion upon diagnostic methods, smoking habits, histological type, Karnofsky performance status (KPS), and treatment modalities is made. The cases were divided in “smokers” and “nonsmokers”	The most frequent histological type was adenocarcinoma. Despite a generally good performance of the cases, the diagnosis of pulmonary cancer is delayed. The data collected could not find a convincing etiological role of tobacco smoking, but caution is needed, regarding the short time length of the study and the sustained number of participants.
	b) Breast cancer (Kamberi, Sinaj & Lalo, 2017)	A cross-sectional study. 220 women were assessed by completing a	The majority of women felt annoyed/ashamed of mammography examination. Although,

		standard questionnaire based on health beliefs of women about breast cancer and the use of mammography	almost all women refer that breast cancer is very dangerous, 43.33% of them report that have never had breast self-examination, or do not know to do it. Strong statistical correlation was observed between the use of mammography and education.
	(Pajenga, Rexha, Çeliku, & Mariani, 2013)	A case-control design of 948 women with breast cancer and their 1019 female controls was carried out from 1998 till 2006	Reproductive (nulliparity) and menstrual variables (Early age at menarche) are significant predictors of breast cancer risk in Albanian women.
	(Tarifa et al, 2017)	289 breast cancer patients were recruited. All patients completed National Comprehensive Cancer Network Distress Thermometer (DT) and Emotional Symptoms	51.9% had a high rate of emotional distress. Finding in this study also demonstrate that emotional distress can affect not only the quality of life of breast cancer patients but also may affect the prognosis of cancer itself.
1. Skin Cancer N=2	(Bilushi, Luci, Kuneshka, & Maliqari, 2012)	This is a descriptive, quantitative cross-sectional study that included 150 students of Faculty of Medicine based on their family history for skin cancer using self administered Questionnaire	32% of participants reported performing Self Skin Examination SSE and Use of Protective Measures UPM on a regular basis and 8.7% reported never performing SSE or UPM.

	(Papa, Robo, Mingomataj, & Papa, 2015)	Descriptive study using author personal series and literature review. Between April 2014 and March 2015, 50 patients with BCC (basal cell carcinoma) were treated in the Department of Plastic and Reconstructive Surgery of Tirana.	40 tumors were T1 (80%), 5 tumors were T2 (10%) and 5 were T3 (5%). All patients received surgical excision of neoforation and immediate reconstruction. Early diagnosis on association with the correct treatment is the only strategy to have a good prognosis of the disease.
1. Third prevalent cancer by gender a) Urinary tract cancer for male N=0 b) Central nervous system cancer for female N=1	(Djamandi, Brace, Kaloshi, Seferi, & Petrela, 2017)	Dates from 1993 up to 2010 are taken by the register of pathological examinations in both services, Neurosurgery and Pathological–Anatomy. Out of these cases 977 ones (49%) are being interviewed to be analyzed in the risk factors, during the period December 2010 – December 2013.	Age and gender are important risk factors in development of brain tumors, from 55 - 80 years old the incidence is higher, and we determined the exclusive predominance of women in meningioma and a predominance of males in glioma. The impact of improved diagnostic methods was seen particularly in the growth of incidence over the years
1. Fourth prevalent cancer N=3 a) Stomach cancer for male b) Colorectal (CRC) cancer for male c) Cervix uteri cancer for female N=1	a) (Malaj, Bilaj, Shahini, & Miraka, 2017)	62 patients with gastric adenocarcinoma, confirmed with biopsy, underwent both CT and MRI examination at a clinic in Tirana during same week	CT has a higher accuracy than MRI (83% vs. 67%) for T1. Decision on surgery requires a MRI to rule out metastases. Primary and secondary levels might benefit from making use of the CT whenever suspect gastric adenocarcinoma.

	b) (Cekodhima, Cekodhima, Beqiri, Alimehmeti, & Sulo, 2016)	This is a retrospective study using electronic patient files database at the University Hospital Mother Theresa, Tirana, during January 2011-September 2016.	Females developed CRC more frequently than males on the 5th and 6th decades. On the 7th decade CRC was more prevalent in males ($p=0.006$). The mean annual incidence of CRC in Albania resulted 9.7 per 100 000. In Tirana's district, it resulted 13.6 per 100 000.
	c) (Kamberi, Ndreu, Theodhosi, & Bilushi, 2014)	Cross-sectional study, descriptive and analytical, with the use of conceptual framework Health Belief Model (HBM) included 200 woman range 25-65 years old that worked in several public institutions and private enterprise in Vlora city.	Poor knowledge of symptoms and risk factors for cervical cancer. Significant the association between benefits, waste of time, emotional barriers and cervical screening. The economic barrier and fear of the outcomes remain the leading reasons for low participation.

This review of the research studies done in Albania contributes towards our overall knowledge, understanding and management of patients with cancer in our country.

Lung cancer has been identified as an important cause of mortality and morbidity in the country. Albeit, lung cancer is ranked first in men, according to the National Cancer Control Program 2011-2020 (NCCP) data, compared to other malignancies while in women, lung cancer is ranked sixth, there are few studies on this issue. We found only one case study on the incidence of lung cancer metastases in the skin . The study emphasized that all histological types of lung cancer may develop metastases in the skin not only of the smokers, but also of the non-smokers (Pajaziti et al., 2015). Meanwhile in the table above we have presented a study that tries to clarify some of the factors that have concerned Albanian clinicians recently regarding the trend of lung cancer among females. Nikolla, Nanushi,

Vyshka, and Hafizi (2013), raise two important issues: First, the fact that second-hand smoking role has to be scrutinized seriously and measured to be applied, when dealing with a majority of female lung cancer patients that self-referred as “nonsmokers”. Second, the fact that a large number of newly diagnosed lung cancer patients were already in advanced TNM (tumor, node, and metastasis) stages albeit the Karnofsky Performance Status (KPS) was generally high requires a thorough revision of preventive medical policies and diagnostic procedures at the primary level of medical care that are obviously lacking the ability to early diagnose a potentially lethal disease (Nikolla et al., 2013).

Concerning breast cancer as the highest prevalence cancer in Albania, we found the highest number of articles published on this issue, that provide more information on health beliefs of women about breast cancer and the use of mammography, risk factors especially the impact of emotional distress not only in the quality of life of breast cancer patients but also may affect the prognosis of cancer itself. Women’s health beliefs related to breast cancer affect their participation in screening. The above studies outline the importance of reducing the real and perceived barriers of women in relation to breast cancer, in order to have increased participation of women in mammography screening. They also conclude that addressing the right preventive programs based on the health belief model are very important to detect breast cancer early and reduce women’s mortality from this type of cancer (Hoti et al., 2017; Kamberi et al., 2017; Kopeci et al., 2013; Pajenga et al., 2013, Tarifa et al., 2017).

According to the National Cancer Control Program 2011-2020 data, skin cancer is ranked second most prevalent both for male and female, however our review found 2 published articles, the one’s review study and the other a descriptive, quantitative cross-sectional study. A literature review conducted by Papa, Robo, Mingomataj, and Papa (2015), provide information about incidence, etio-pathogenesis and treatment of Basal Cell Carcinoma. Basal cell and squamous cell carcinomas, also referred to as keratinocyte carcinoma, are the most frequently diagnosed and highly curable forms of skin cancer (Papa et al., 2015). The other study carried out by Bilushi, Luci, Kuneshka, and Maliqari (2012), show that despite the potential importance of regular skin self-examination and promotion of self-protection practices, little is known about the prevalence of these practices among medical students in Albanian population (Bilushi et al., 2012). Researchers from other countries have conducted studies that estimate the association between ultraviolet radiation (UVR) or artificial UVR exposure (indoor tanning) and skin melanoma, as well the use of sun-protective

behaviors (Fedewa, Sauer, Siegel, & Jemal, 2015). Our research showed that in Albania there are no studies evaluating the prevalence of the use protective behaviors as preventive measures against melanoma.

Lack of studies have also been reported for urinary tract cancer as the third most prevalent cancer for male in Albania. The study of Djamandi, Brace, Kaloshi, Seferi, and Petrela (2017), on central nervous system cancer provide data for higher incidence of meningioma in females and glioma in males and its association with demographic factors.

Similarly, the authors of two other studies on CRC (Sina et al., 2018; Cekodhima et al., 2016) and stomach cancer (Malaj et al., 2017) described respectively the prevalence and benefits from making use of the CT and MRI whenever suspect gastric adenocarcinoma. So even for these types of cancer there are no albanian studies on knowledge about risk factors, lifestyle and preventive measures.

In contrast, there are some studies that provide an overview of cervical cancer knowledge and behaviours screening among healthy female, but the authors have dedicated their work more often to a local population, for example Vlora's healthy women or female healthcare practitioners. According to Kamberi et al. (2016), Kamberi, Theodosi, Bilushi, Cuberi, and Sinaj (2014), Kamberi, Theodosi, Ndreu, Sinaj, and Kamberi (2015), found poor knowledge of symptoms and risk factors for cervical cancer among women in general and female Healthcare Practitioners (HCPs) in particular. Large numbers of women never screened. The economic barrier and fear of the outcomes remain the leading reasons for low participation. Another study conducted by Filipi and Khani (2014), revealed that the prevalence of cervical cytological abnormality in Albanian population (a total number of 5416 conventional pap smear tests done between January 2009 -January 2012 at the University Hospital Obstetric-Gynecology "Queen Geraldine"), was 4.8%. The author emphasizes that abnormal cervical cancer (CC) prevalence rate in Albania is lower than in India, Europe and North America. This might be due to socio-cultural differences, lack of screening population-based studies or a lower HPV (Human Papilloma Virus) prevalence. So, further studies with larger numbers are required to fully assess the above mentioned factors, especially the role of HPV, to determine the real prevalence of the cervical epithelial abnormalities in Albania, to generate more reliable policies as to plan for future screening (Filipi & Khani, 2014).

Finally, regarding the methods applied by the authors, present results indicated that Albanian studies on cancer used more often, descriptive methodological approach and smaller sample size. The methods included

descriptive statistics like t-Test, χ^2 - Test, correlation analysis and also linear regression.

Conclusions

In this review, a comprehensive overview of Albanian studies on most prevalent cancer, is provided. Most of the studies provided more data on the incidence of different types of cancer, but little information on its association with major risky factors. Also, there are few studies on early detection (ED) focusing on screening behaviors. It is worth mentioning that studies about knowledge, healthy beliefs and awareness of cancer in Albania is scarce too. The above results reveal the need to increase publications as a future perspective of scientific research in Albania to create a database that strengthens the knowledge about cancer with the impact of its prevention and improvement of quality of life.

Competing interests

The authors declare that they have no competing interests

Funding

None

Acknowledgments

I thank the co-author of the article for her substantial contribution to draft the article or revise it critically for important intellectual content.

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