

## RESEARCH COMMUNICATION

# Occupation and Cancer Incidence in District Dir (NWFP), Pakistan, 2000-2004

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### Abstract

District Dir is a part of North-West frontier Province (NWFP) in Pakistan with poor health, education and socioeconomic and other facilities. Data regarding occupational cancer were here collected from cancer registry of Institute of Radiotherapy and Nuclear Medicine (IRNUM) Peshawar for January-2000 to December-2004 and medical records of 1105 patients were traced and analyzed. It was observed that 61 % (683/1105) were males and 39% females. Farmers accounted for 43.8% of cancers, the second most effected people being housewives with 33.8% then children/students at third place with 12.8%. Cancers in laborers and other people like government employees, businessman and shopkeepers were less often found. The data from a cancer registry for a low socioeconomic region should be helpful for future mass screening and determination of risk factors within the country and in Asia in general region. Increased awareness by education is highly important and may play a beneficial role in diagnosis, treatment and prevention.

**Key Words:** Occupation - cancer - Pakistan - low socioeconomic region

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### Introduction

During 1990 to 1994 according to the medical records of all patients attending the Institute of Radiotherapy and Nuclear Medicine (IRNUM), Peshawar there were 13,359 new cancers cases, 10,371 from inhabitants of the North West Frontier province (NWFP) and remaining 2,988 in Afghan refugees. The most common male tumors were skin, lymphoma, oral cancer, urinary bladder, lung, esophagus, prostate, soft tissue, prostate, brain and myeloid leukemia. Among male Afghan refugees the most common cancers were esophagus, skin, lymphoma, oral cancer, soft tissue, myeloid leukemia, stomach, urinary bladder, testis and colorectal cancer. Breast cancer was the most common cancer in women (Khan et al., 1997). Carcinoma of oral cavity is amongst the first ten most common malignancies in Pakistan. Districts of Hazara (NWFP) and Northern Areas of Pakistan are among the high-risk areas.

In a report of oral cancers over a period of 10 years (Wahid et al., 2005), the most common tumors in children in the NWFP were lymphocytic leukemia, lymphoma, myeloid leukemia, Wilms tumor, tumors of the central nervous system (CNS), soft tissue sarcoma, bone tumors, retinoblastoma, neuroblastoma, and testicular tumors (Khan et al., 1997). Generally in Pakistan, male lung cancer is the most frequently recorded malignancy, followed by oral

cavity, urinary bladder and laryngeal cancers. In females, breast was the most common site of cancer followed by oral cavity, ovary and cervix (Bhurgri, 2001; Bhurgri et al., 2002). A marginally higher risk was observed for the lower socioeconomic categories and for ethnicities belonging to Northern and North Western Pakistan (Punjabi, Pushtun and Baluch) residing in Karachi South (Bhurgri et al., 2005).

The present retrospective study concerns 14,018 malignant tumors from northern Pakistan. Prostate cancers in males and gall-bladder carcinomas in females are more frequent in our material as compared to other countries of the region (Khan et al., 1991). The area for this study was chosen from the two districts of Malakand division because this area is very poor in health, education, socioeconomic and other facilities, however the present government of the province gave priority to this area, especially in education and other socioeconomic sectors. The two districts are Dir Lower & Dir Upper. Dir is situated in North West of Pakistan and part of NWFP and is the former state of Nawab Shah Jahan Khan. It merged with Pakistan in 1969 and was given a status of a district in 1970. The total population is 1,411,649 (NWFP Govt, 2006). For the present study we consider Lower Dir and Upper Dir as whole in a form of a single district. This study was performed to determine the occupations of cancer patients in this area of low socioeconomic development in Pakistan.

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**Table 1. Occupation and Cancer Incidence During 2000-04 in Dir District, North-West Frontier**

Occupation	Number of Patients per Year					Mean	SD*
	2000	2001	2002	2003	2004		
Farmers	68	97	86	112	121	96.8	18.8
Housewives	64	85	72	68	84	74.6	8.5
Students	11	29	25	33	44	28.4	10.7
Laborers	12	5	17	14	16	12.8	4.3
Others	2	2	2	2	4	2.4	0.8

\* Standard Deviation

## Materials and Methods

There is only one Hospital in NWFP for Cancer Registration and treatment. that is the IRNUM (Institute of Radiotherapy and Nuclear Medicine) Peshawar. Data were collected from cancer registry of IRNUM Peshawar during the months of November-December 2005 for the five year period from January-2000 to December-2004 . The medical records of 1105 patients were traced, and information on laterality of tumor, spread of tumor, and mode of treatment were obtained. The residency status of cases was re-ascertained and rechecked. Variables recorded were the hospital patient-number, date of incidence, name, age, sex, address and occupation. Data were statistically analyzed by online method from Graphpad Web Site (Graphpad.com, 2006).

## Results

The data of eleven hundred and five patients registered at IRNUM in five years from 2000 to 2004 were analyzed for occupation (see Table 1). The data show that 61 % (683/1105) were males and 39% females. Farmers with 43.8% of cancer out of the total, the second most effected people are the house wives with 33.8% cancer, students mainly includes children with age ranges from one month to 20 years were in third place having 12.79% cancer patients out of the total patients. The laborers and other people like government employees, businessman and shopkeepers appeared less affected.

## Discussion

Farmers and housewives accounted for the vast majority of cancer cases in the present study. While data are not available as to their relative proportions in the population in general, probable reasons for this high rate are illiteracy, uses of pesticides, low intake of antioxidants, high burden of work and less rest. Studies conducted in Pakistan have identified smoking, chewing paan (which is betel quid, a mixture of areca nut, lime, and other spices wrapped in a betel leaf), eating naswar (which is tobacco mixed with ash and kept in the buccal cavity between the lips and the alveolus), and inhaling snuff (tobacco powder) as high risk factors for esophageal cancer patients (Jamal et al., 1997; Afridi et al., 2000; Farhana Badar et al., 2005).

Clearly childhood cancer is also a major problem, whereas, the other occupation groups are not responsible for large numbers of cases.

The precise incidence, mortality rates, number of new cancer cases and number of deaths annually for Pakistan are not known (Bhurgri, 2004). However, our study results point to the necessity to increase awareness of this chronic disease. Socioeconomic background is important in determining risk and greater emphasis on education is necessary (Moore and Tajima, 2006) and the selected region for this study is of very low socioeconomic background.

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