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## Prevalence of Pediculosis and Scabies in the Prisoners of Bandar Abbas, Hormozgan Province, Iran

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**Abstract:** The increasing prevalence of active pediculosis and scabies among prisoners prompted us to conduct a head louse and scabies prevalence survey among prisoners in the Bandar Abbas, Hormozgan province, Iran. During the study, 67 patients with skin disorders were found. Among the doubtful patients who were considered 38 patients (57%) indicated *Sarcoptes scabiei*, 6 patients (9%) were indicated lice and 23 patients (33%) were set aside for more studying and specialized tests. Contamination rates were 18.4, 10.5 and 10.5% in the youths, drug abusers and kitchen units, respectively. Adults, foreigners and quarantine units were contaminated 7.9, 5.3 and 5.3%, respectively. In cheque and military units, no contamination was observed because of the higher hygienic status. Morbidity rate in the individual and technical units was 2.5%. The highest and the least morbidity rates were observed among 20-29 year age group (55.2%) and over 50 year age group (2.6%). The average and the mean ages of the 38 patients that contaminated to *Sarcoptes scabiei* was 29±8 and 28 years, respectively. The least and the highest contamination ages were 18 and 59 years, respectively. The affirmative *Sarcoptes scabiei* cases in the different units indicated that the general units had the most morbidity percentage because there were many prisoners with different cultural backgrounds (26.3%).

**Key words:** Pediculosis, scabies, *Sarcoptes scabiei*, prevalence, Iran

### INTRODUCTION

Pediculosis and scabies are common parasitic skin diseases, ubiquitous, contagious and debilitating parasitic dermatoses (Ciftci *et al.*, 2006), especially in poor populations throughout the world and are associated with considerable morbidity (Heukelbach *et al.*, 2005).

Ectoparasitic infestations can be sporadic, endemic, or epidemic (Takano Lee *et al.*, 2004). Since the 1970s, the prevalence of head lice has increased in many countries (Chosidow, 2000). Scabies has also been known for over 2,500 years (Orion *et al.*, 2006). It is caused by a mite, *Sarcoptes scabiei* var *hominis* and is an obligate human parasite that burrows tunnels downward into the epidermis (not deeper than the stratum granulosum) (Chosidow, 2000). Scabies is primarily transmitted by close human contact and seldom through fomites. It is more common in institutional environments such as prisons, old-age homes, day-care centers, nursing homes, schools and orphanages where outbreaks of the disease are frequently reported (Parish and Witkowski, 1999; Pruksachatkunakorn *et al.*, 2003; Gimenez *et al.*, 2004; Arlian *et al.*, 1988).

Spreading of these diseases usually occurs in the wars, floods, earthquakes and other natural and gregarious unfavorable events in the critical times. Nowadays, in spite of advance hygiene and decreasing the contamination rate, these diseases are again the epidemic risks, which have not been eliminated in the prisons, encampments, garrisons and other general dwellings and can easily spread because of low personal or environmental hygiene. Head lice infestation is a major problem in the United States, throughout Europe and Asia (Maunder, 1983). Heukelbach *et al.* (2005) reported that prevalence of pediculosis capitis was 43.4 in the slum and 28.1% in the fishing community. Children aged 10-14 years and females were most frequently affected. Scabies was present in 8.8 of the population in the slum and in 3.8% of the population in the fishing community (Heukelbach *et al.*, 2005). In a study by Ciftci *et al.* (2006) the infestation was found in 14 (1.2) of 1,134 children; 9 (0.8) with pediculosis capitis and 5 (0.4%) with scabies (Ciftci *et al.*, 2006). In Iran prevalence of pediculosis and scabies in elementary school, primary school, high school and military forces was prevalent in many provinces

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(Amrai *et al.*, 2006; Khademvatan *et al.*, 2006; Khoushehmehri *et al.*, 2006; Navaz Novin, 2006; Nourjah *et al.*, 2006; Vatani and Khaaraa, 2006).

Although many pediculosis and scabies studies have been conducted, in Iran very little information is currently available on the pediculosis and scabies in prisoners. The increasing prevalence of active pediculosis and scabies among prisoners prompted us to conduct a head louse and scabies prevalence survey among prisoners in the Bandar Abbas, Hormozgan province, Iran.

## MATERIALS AND METHODS

This study was conducted in Bandar Abbas prison, a city located in the southeast region of Iran between November 2004 and March 2005. The presence of head lice is signaled by itching in response to bites, or by visual evidence. Unless desensitized to their bites by repeated exposure, the host will begin to itch when bitten sufficiently often for the body to learn to react (Maunder, 1988). This can take as long as three months the first time the host catches lice. Head and pubic lice infestations are diagnosed by the visualization of insects or viable nits (eggs). The detection of head lice by inspection during the first stages of an infection can be a tedious operation. Head lice can betray their presence through casts and faeces deposited on pillows (Maunder, 1983). They will show up in water used for hair-washing and on a pale surface when dry hair is brushed and combed over it. The most reliable method of detection is combing of the wetted hair with a suitably designed detector comb. Visiting Bandar-Abbas prisons and controlling the daily referring lists of the prison health unit, those patients who had referred because of skin problems, lice, scabies and nocturnal itching were selected. Other primary information was obtained by asking the public health managers. Classic scabies in adults can be recognized by a pruritic, papular rash with excoriations; in infants, small children and the immunocompromised, the rash may include vesicles, pustules, or nodules.

Sampling the helical canals which borrowed by female mites in the skin layer, the mite infestation can be distinguished. Their feces which is deposited in the canals and can be seen as some dark spots is another way of finding the mites canals. Scraping test was used to sample the mites. Direct observation method was used for lice.

## RESULTS AND DISCUSSION

During the study, 67 patients with skin disorders were found. Among the doubtful patients who were considered

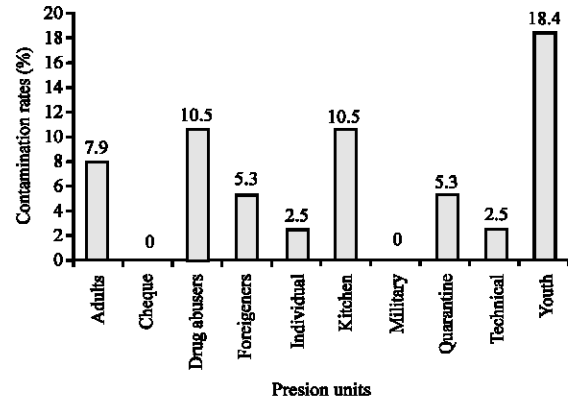


Fig. 1: Contamination rates of pediculosis and scabies in various units of Bandar Abbas prison, Hormozgan Province, Iran

38 patients (57) indicated *S. scabiei*, 6 patients (9) were indicated lice and 23 patients (33%) were set aside for more studying and specialized tests. Contamination rates were 18.4, 10.5 and 10.5% in the youths, drug abusers and kitchen units, respectively. Adult, foreigners and quarantine units were contaminated 7.9, 5.3 and 5.3%, respectively. In cheque and military units, no contamination was observed because of the higher hygienic status. Morbidity rate in the individual and technical units was 2.5% (Fig. 1). The highest and the least morbidity rates were observed among 20-29 year age group (55.2) and over 50 year age group (2.6%). The average and the mean ages of the 38 patients that contaminated to *S. scabiei* was  $29 \pm 8$  and 28 years, respectively. The least and the highest contamination ages were 18 and 59 years, respectively.

Contamination rates of the scabies and pediculosis were more than 5% in the most prison units (Fig. 1). The importance of environmental measures to prevent infestation is a matter of controversy. Lice is related to poor social and economic positions and often seen when the clothes had not been replaced or washed properly. This disease mostly contaminates the prisoners, homeless and poor people and those living in the camps and garrisons. The only practicable approach to prevention of head lice appears to be attentive (rather than perfunctory) hair care by normal means, carried out in awareness that head lice may occur.

The affirmative scabies cases in the different units indicated that the general units had the most morbidity percentage because there were many prisoners with different cultural backgrounds (26.3%). The prevalence of the scabies disease was higher in the warm months. Berenji *et al.* (2006) reported that scabies is one of the most prevalent skin diseases in Iran.

This is the first study from Iran reporting scabies and pediculosis prevalence in prisoners. Pediculosis and scabies are endemic in this study and are associated with considerable morbidity.

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