

# Health Problems among School Children: A Community Based Cross-Sectional Study at District Swat Khyber Pakhtunkhwa Pakistan

NAEEMULLAH<sup>1</sup>, MUHAMMAD JIBRAN KHAN<sup>2</sup>, SARA JAMIL KHAN<sup>3</sup>, NADIA QAZI<sup>4</sup>, MUHAMMAD IQBAL WAHID<sup>5</sup>, ARIF IQBAL<sup>6</sup>, MUHAMMAD ISHTIAQ<sup>7</sup>

<sup>1</sup>Department of Community Medicine, Saidu Medical College, Saidu Sharif, Swat

<sup>2</sup>Department of Community Medicine, KIMS (KMU-Institute of Medical Sciences), Kohat

<sup>3</sup>Department of Obstetrics & Gynecology, Frontier Medical College, Abbottabad

<sup>4</sup>Department of Community Medicine, Northwest School of Medicine, Hayatabad, Peshawar

<sup>5</sup>Medical Education, Post Graduate Medical Institute (PGMI), Peshawar

<sup>6</sup>Specialist Family Medicine, Hallonbergen Vardcentral, Stockholm Sweden

<sup>7</sup>Department of Community Medicine, Nowshera Medical College, Nowshera

Correspondence author: Muhammad Ishtiaq, Email: [drishtiaq250@yahoo.com](mailto:drishtiaq250@yahoo.com), Cell: 0334-9121822

## ABSTRACT

**Background:** Health status of school children and their school environment plays an important role in the development of physical and mental health, and good personnel behaviors had a significant role in future life of children.

**Objective:** This study was conducted to estimate the frequency of health problems among school children of district Swat, Khyber Pakhtunkhwa Pakistan.

**Methodology:** This study was conducted in district Swat, Khyber Pakhtunkhwa; Pakistan. A total of n=225 school children of age 4-12 years were selected and examined for health problems. A structured questionnaire was used to assess the health status of children regarding health problems.

**Results:** Results showed that 45.56% of children had age < 8 years; 54.44% had age > 8 years; 81.33% of children parents had monthly income < PKR: 45000; 56% children living in mud-made homes; and 46.67% were underweight. Moreover, 15.56% of children had eye discharge; 28.89% backache; 8.44% ear discharge; 16.44% earaches; 47.11% poor oral hygiene status; 60.44% were not using toothbrush; and 22.67% had dental caries. Furthermore, 41.33% had not clean their hair and not took bath within last 48 hours; and 32.89% had poor nail hygiene status for the past one week.

**Conclusions:** It was concluded that school children had several medical health problems and showed relationship with hygiene status of children, tooth-brushing use and its frequency, parents monthly income, and body mass index of children and thus adequate preventive, promotive and behavioral strategies were needed to reduce health problems among school going children.

**Keywords:** School Children, Health Status, Underweight, Eye, Ear, Hygiene, Income, Swat, Kohat.

## INTRODUCTION

Among school-aged children around the world, the prevalence of communicable diseases and behavior-related personnel factors is high [1]. Children's oral health and susceptibility to habit-related conditions are negatively affected by the lack of attention paid to personal hygiene and the prevalence of unsanitary conditions in schools [2].

Epidemiological surveys among children showed prevalence of low back pain ranges from 18.8% and 51% [3][4] [5]. According to many studies, Musculo-skeleton problems varies from 23% to 45% among children aged 6–13 years [4].

Public health experts are increasingly concerned about the rising rates of musculoskeletal disorders and low back pain in youngsters [3, 4]. It is also possible to suspect a neoplastic, viral, inflammatory, or organic cause for a child's backache [4], [5]. Malnutrition and cognitive and physical development delays in young children have been linked to frequent infection [2].

Hand hygiene is generally accepted as cornerstone of infection prevention and is the major intervention for the reduction of infectious diseases [6] [7]. In low-, middle-, and high-income countries alike, water-borne diseases and diarrhoea pose a significant threat to school-aged children. Clean hands are one of the most effective weapons against the spread of disease [8]. Oral health is crucial to overall wellness and quality of life [9]. Dental pain, discomfort, and disruption in regular routine can all be signs of poor oral health in children [10, 11]. Additionally, brushing your teeth twice a day is one of the best ways to avoid cavities [10]. Caries, or cavities, in teeth are common in third world countries [9]. In children, dental caries is the most common chronic pathology [12]. It is a chronic, complex disease. Timing of tooth eruption and unhealthy eating habits are both important factors in the development of dental caries in children [9]. Oral health prophylaxis relies heavily on the routine elimination of plaque. High rates of tooth decay and gum disease can develop in people who don't practise good oral hygiene (with fluoride toothpaste).

Of the estimated 32 million children with severe hearing loss worldwide, the great majority reside in low and middle-income

nations [14]. Chronic otitis media was the most common ear problem affecting 10.83% of school going children. Moreover, chronic otitis media in children is the main cause of avoidable hearing loss. Furthermore, middle ear infections are common in children and can result in delays in speech, language development and deafness [15].

In Pakistan, worm infestation, skin infections, under-nutrition and malnutrition along with dental problems were common among school age children due to the presence of socio-economic, demographic and important determinants affecting the health status of school children, consequently, this cross-sectional study was undertaken to assess the prevalence of health problems among school-going children, to estimate the frequency of chosen risk variables, and to offer solutions for prevention and control of problems among school-aged children.

## MATERIALS & METHODS

An approved descriptive cross-sectional study was carried out in the Swat district of Khyber Pakhtunkhwa, Pakistan. Based on a 95% confidence interval and 5% precision for a cross-sectional study, n=225 school-aged children were selected using a convenience sampling method for this investigation. The prevalence of health issues among school-aged children was determined by administering a structured questionnaire to the students. The parents' socioeconomic status, education level, marital status, education level, occupation, and education level are all included in the structured questionnaire. It also included data on students' musculoskeletal, ocular, dermal, and hygienic health. For data entry and analysis, we used SPSS 23. Finally, the data was tabulated and displayed.

## RESULTS

Table 1: Demographic Variables of School Going Children 4-12 Years Age (n=225)

| Demographics | Variables | f  | %     |
|--------------|-----------|----|-------|
| Age in Years | 4 to 6    | 69 | 30.67 |
|              | 6 to 8    | 56 | 24.89 |

|                           |                   |     |       |
|---------------------------|-------------------|-----|-------|
|                           | 8 to 10           | 45  | 20.00 |
|                           | 8 to 12           | 55  | 24.44 |
| Parents Monthly Income    | < 15000           | 119 | 52.89 |
|                           | 15000 - 30000     | 64  | 28.44 |
|                           | > 30000           | 42  | 18.67 |
| House Structure           | Cemented          | 99  | 44.00 |
|                           | Mud etc           | 126 | 56.00 |
| No of Children per Family | 1 & 2             | 59  | 26.22 |
|                           | 3 & 4             | 75  | 33.33 |
|                           | > 4               | 91  | 40.44 |
| BMI                       | Underweight       | 105 | 46.67 |
|                           | Normal            | 71  | 31.56 |
|                           | Overweight/ Obese | 49  | 21.78 |

Table 2: Different Health Problems among School Going Children 4-12 Years age (n=225)

| Health Problems          | Response         | f               | %     |       |
|--------------------------|------------------|-----------------|-------|-------|
| Eye Problems             | Normal           | 107             | 47.56 |       |
|                          | Discharge        | 35              | 15.56 |       |
|                          | Vision           | 83              | 36.89 |       |
| Musculoskeletal Problems | Normal           | 51              | 22.67 |       |
|                          | Backache         | 65              | 28.89 |       |
|                          | Weakness         | 87              | 38.67 |       |
|                          | Any other pain   | 22              | 9.78  |       |
| Ear Problems             | Normal           | 151             | 67.11 |       |
|                          | Discharge        | 19              | 8.44  |       |
|                          | Pain             | 37              | 16.44 |       |
|                          | Deafness         | 18              | 8.00  |       |
| Personnel Hygiene        | Clothes/ Uniform | Clean           | 87    | 38.67 |
|                          |                  | Un-satisfactory | 138   | 61.33 |
|                          | Oral Hygiene     | Satisfactory    | 119   | 52.89 |
|                          |                  | Un-satisfactory | 106   | 47.11 |
|                          | Tooth brushing   | Yes             | 89    | 39.56 |
|                          |                  | No              | 136   | 60.44 |
|                          | Dental Caries    | Yes             | 51    | 22.67 |
|                          |                  | No              | 174   | 77.33 |
|                          | Hair             | Normal & Clean  | 132   | 58.67 |
|                          |                  | Not Clean       | 93    | 41.33 |
|                          | Nail             | Normal & Clean  | 151   | 67.11 |
|                          |                  | Not Clean       | 74    | 32.89 |

**DISCUSSIONS**

In our study, approximately 47.11% of school children parents had monthly income of more than PKR 15000; whereas in studies of Fukuya et al., 2020; & Mukara et al., 2017; revealed that 58.9% and 52.7% of school children's parents had average monthly income [10] [15]. Moreover, in study of Bright et al., 2017; published in PLoS ONE Journal found that approximately 17% of school children were overweight, whereas in our study, 21.78% of school children were overweight/ obese [14] (Table No. 1).

In our study, approximately 36.89% and 15.56% of school children showed eye problems i.e. dimness of vision and eye discharge respectively; whereas in international study of Agha, 2020; 15.25% of children reported eye discharge [16]. Furthermore, in Ekpenyoung et al., study of 2020; published in African Vision & Eye Health; reported that 14.69% of school children had complaints of dimness of vision [17].

In our study, 8.44% of school children had ear discharge; 16.44% had ear-pain (earache) and 8% reported deafness; whereas in studies of Head et al., 2020; and Mukara et al., 2017; had 33% and 4% ear discharge among school children [15] [18]. In studies of Lunde et al., 2015; Balague 1999; and Sankaran et al., 2021; prevalence of 54%, 38.9% and 18.8% was found for musculo-skeleton problems among school children respectively [3] [4] [19]. Moreover, in study published internationally in Journal of BMJ Musculoskeletal Disorder; of Rezapur-Shahkolai et al., 2021; reported 33% of musculo-skeleton system problems; whereas in our study the prevalence was 38.67% among school children [5]. Thus our study prevalence was more as compared to prevalence of 16% and 18.8%; revealed by studies of Slowinska et al., 2015; &

Sankaran et al., 2021; respectively [3] [20]. Furthermore, our prevalence was less as compared to 54%, and 38.9%; in studies of Lunde et al., 2015; and Balague et al., 1999; respectively [4] [19].

In our study, approximately 61.33% of school children had unsatisfactory and or dirty uniform during examinations, as was found and supported by study of Klar et al., 2022; which showed which supported our findings and revealed that 40.2% of children had improper dress/ clothes during school examinations [7]. Moreover, in our study, 47.11% had un-satisfactory oral hygiene status, as was reported and found in a study conducted internationally by Pradhan et al., 2020; showed that 36% of school children had unsatisfactory oral hygiene during examinations [2].

In studies of Deinzer et al., 2019; and Fukuya et al., 2020; approximately 10% and 23.5% of school children had no or less than two times tooth-brushing frequency per day respectively; whereas in our study; 60.44% of children had not use toothbrush for more than one time per day [10] [13]. In our study, 22.67% of school children had dental caries; whereas in study of Deinzer et al., 2019; reported 30% of dental caries; and in study of Abbass et al., 2019; approximately 74% of primary school children were found to have dental caries [9] [13]. Furthermore, in our study, 32.89% and 41.33% of school children had not clean their nails in the previous week and not wash their hair for the last 48 hours; whereas in study of Kundu et al., 2012; published in Journal of Natural Science, Biology and Medicine; found that 10% to 33.35% of school children had not clean their hair or took bath in the last 48 hours [6] (Table No. 2).

**CONCLUSION**

From our study, it was concluded that school going children had common health problems related to personnel hygiene; musculo-skeleton & joints; eye; and Ear-Nose-Throat systems. Moreover, school going children had low socio-economic status, poor school environmental, and poor personnel hygiene status and below average poor behavioral related determinants, and thus educative; behavioral and social interventions were needed to prevent and reduce health problems among school children.

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