

ADOLESCENT HEALTH SCREENING REPORT 2015



الهيئة العامة لحماية الصحة
Health Protection Agency

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Introduction

The wellbeing of a child is of paramount importance; as they are the future of a nation. The president's manifesto has paved the path for the Health Protection Agency (HPA) to galvanize our efforts to increasing child and adolescent health. In this manner, the School Health program was established in HPA, to coordinate the efforts to improve health in this target population. The school health screenings, comprised of health checkups for grade 1 and 7 was launched to achieve this goal, as well to obtain information on the health status, and to provide evidence for the public health programs.

The adolescent years mark one of the major mile stones that a growing child faces; and this time period can often be confusing and problematic, both from the psychosocial and general health aspects. Therefore the detection and effective resolution of such problems well in advance is crucial to the wellbeing of the child. In an effort to evaluate the health of the adolescent child, the school health screening program for adolescents was developed. This screening survey was designed to collect data from several health aspects of the child; the aim being to get a complete picture of the child's health.

Methodology

Based on the expert opinion, the grade seven students were chosen as representatives of the adolescent student population. The survey was conducted nationwide and students of grade 7 from each and every school in the country were evaluated. The teams that conducted the screening survey in the schools of Male' city included doctors, nurses, health workers and school health assistants. The teams for the atolls consisted also of members from the public health units and the school. All the team members were given trainings on how to conduct the survey and what information was to be collected. A nationwide awareness campaign on the importance and benefits of health screening, early detection, adolescent health needs, was conducted prior to the survey. Data was collected using a questionnaire which included specific questions asked of the student as well as that are completed by the health personnel examining the child. Aside from information collected by the questionnaire, a blood sample was taken to obtain certain bio-chemical parameters and indicators. Prior to taking part in the survey, consent was taken from the parents and the students. The health screening was voluntary, thus at any given time any parent or any student may refuse to participate in the screening survey.. Consent was additionally obtained for questions that were of sensitive nature.

Data Analysis

Data analysis was carried out using Microsoft Excel.

The analysis was conducted on 4238 students. Unfilled questionnaire parts were considered as missing data. Data was analyzed using Microsoft-Excel., Data cleaning process carried out and coding was done prior to the analysis. Data was grouped and re-grouped where necessary. Percentage values were drawn out for the health indicators as marked in the questionnaire, and displayed in tables and graphs.

Results

General Demographics

The main demographic and biometric parameters that were considered in this screening are age, height, weight and gender(*Figure 1*). Our school systems show a positive even distribution of girls and boys. The age, weight and height show surprising evenness and fits well with the expected fiftieth percentile values (reference data). The distribution of blood groups showed no deviation from the norm, *Figure 2*. The girls and boys show an even pattern in the distribution of blood groups. The commonest type of blood group is “O Positive” followed by “A positive and B positive “.

Figure 1: Nationwide demographics

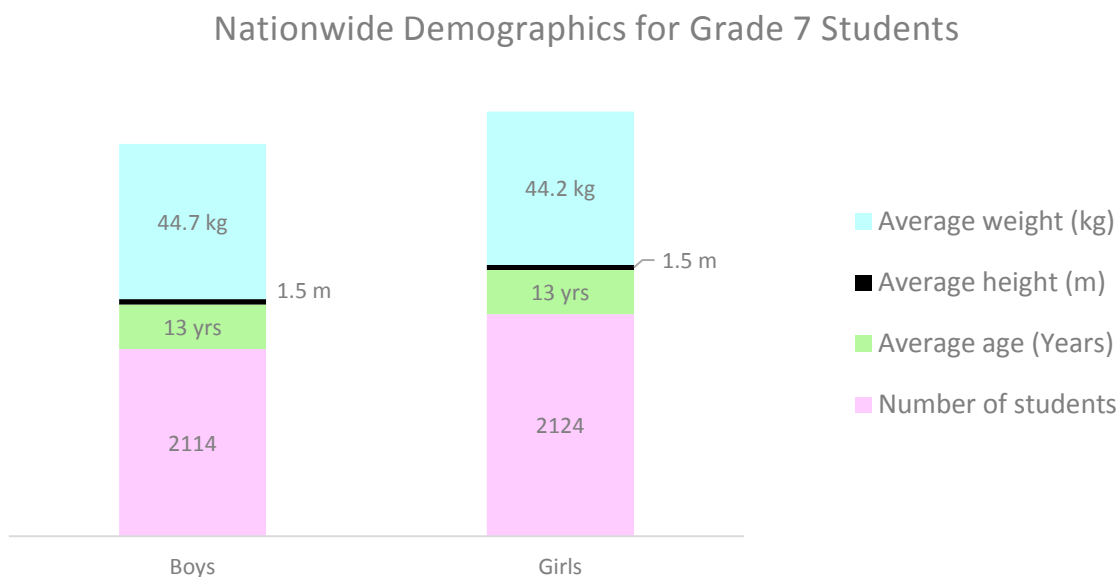
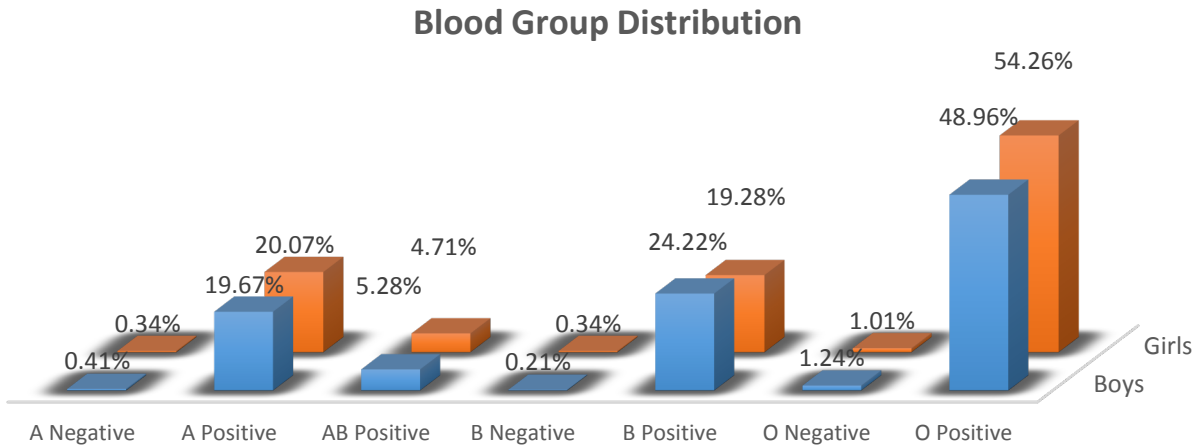


Figure 2: Blood group distribution



General Health

The chosen parameters of general health indicators are, BMI, Haemoglobin, average blood sugar level and puberty, *Figure 3*. The average Haemoglobin level is within the normal range. Upon further analysis it can be seen that 28.36% of boys and 45.42% of girls are anemic, *Figure 6*. The average age of the onset of periods is 11 years and most of the girls have started their periods, *Figure 4*. Average GRBS is 88.62 mg/dl. Upon assessing the BMI, roughly half of the adolescent student population is in the normal range, *Figure 5*. Vaccination status shows good progress as only a small percentage of children show incomplete vaccination, *Figure 7*. Only a very small percentage of students showed signs of vitamin A deficiency suggesting that overall dietary intake of vitamin A is good, *Figure 8*.

Figure 3: Nationwide general health parameters

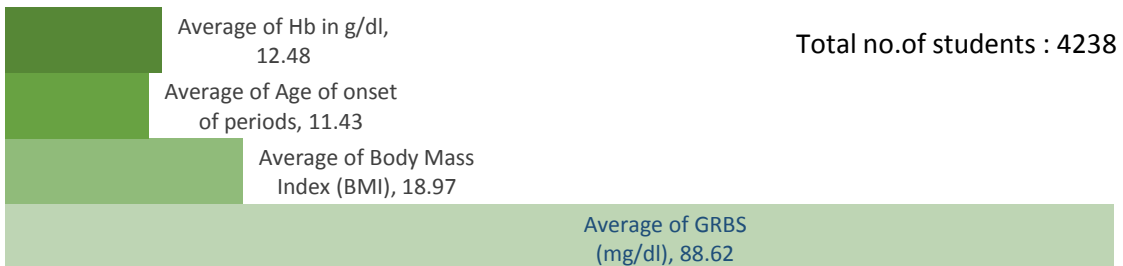


Figure 4: Percentage of girls who had started their periods

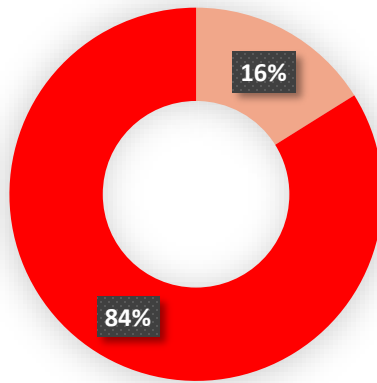


Figure 5: Body Mass Index

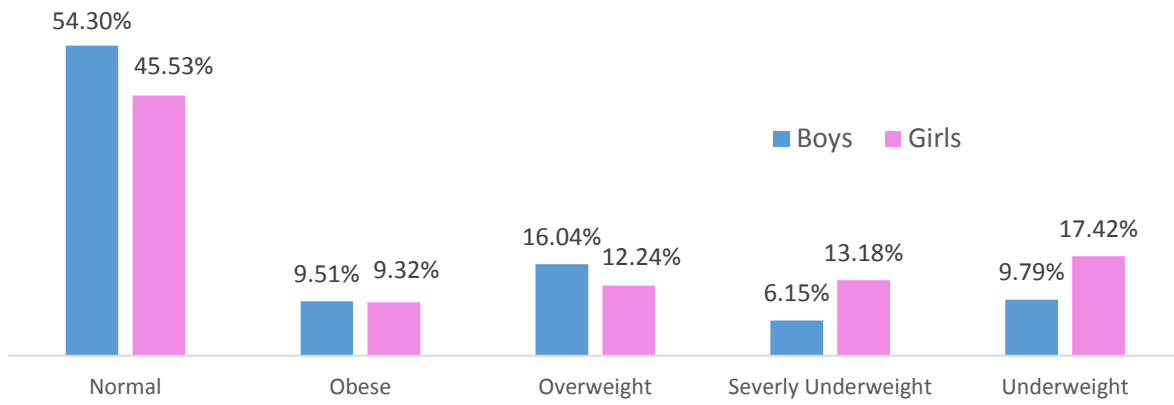


Figure 6: Haemoglobin levels

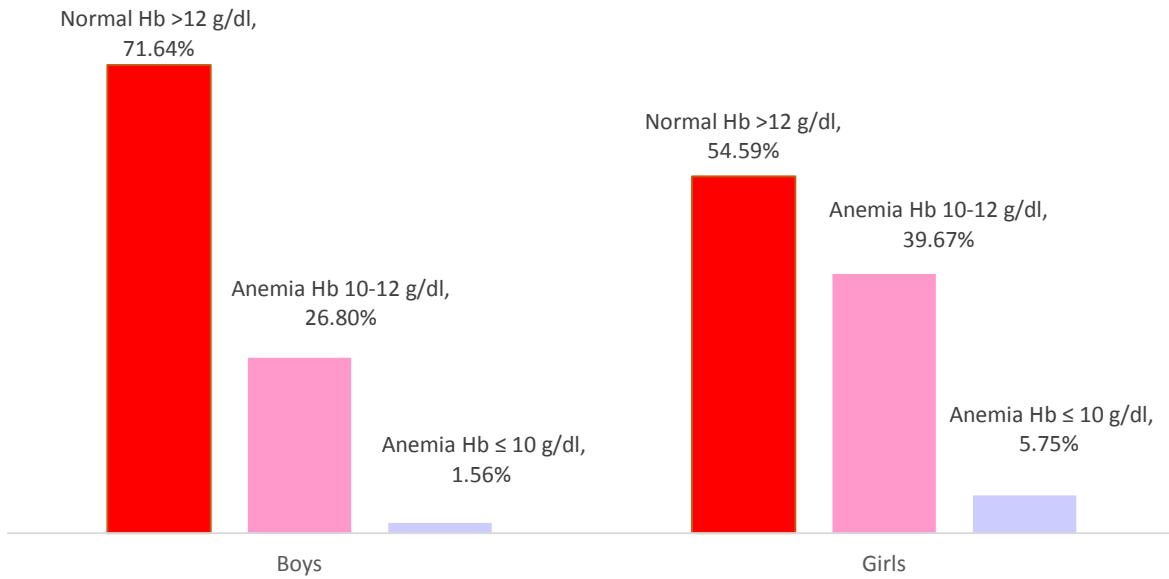


Figure 7: Vaccination status

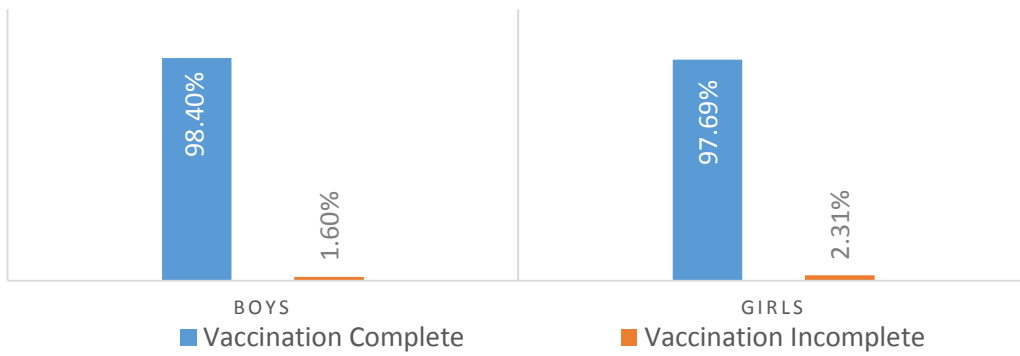
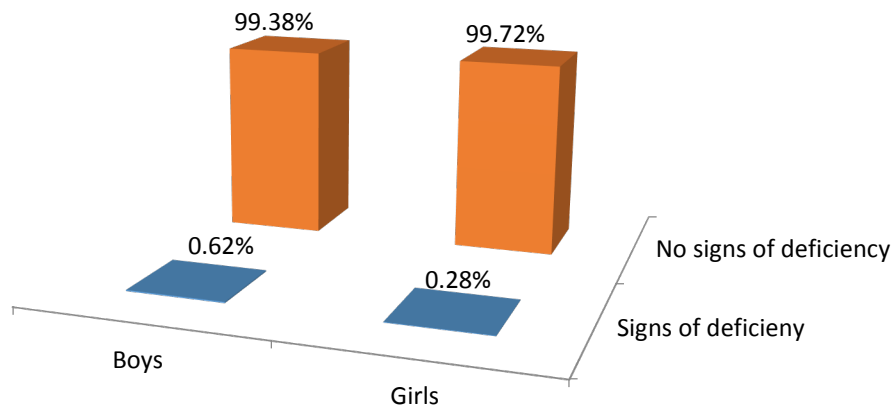


Figure 8: Vitamin A deficiency



Medical history and Physical Examination

General health condition at the time of screening showed that the great majority of the students were healthy, and a minor proportion of students (girls 0.89%, boys 0.96%) had physical abnormalities, of which a small percentage (boys 0.51%, girls 0.65%) had abnormalities in their extremities. *Figure 9.* Medical history of the students showed that a sizable proportion (29.71% boys, 36.16% girls) has had a medical condition. Injury and illness analysis shows that approximately 30% of the students have had some form of injury or illness, *Figure 10.* Only a small proportion of students had a history of having undergone a surgical procedure, *Figure 11.* Upon physical examination most of the students (girls 99.80%, boys 99.39%) had normal gait and a minor proportion of students (girls 0.89%, boys 0.96%) had physical abnormalities, of which a small percentage (boys 0.51%, girls 0.65%) had abnormalities in their extremities.

Figure 9: General health

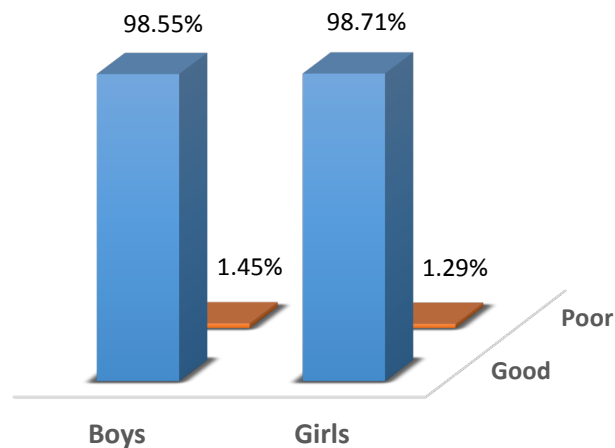


Figure 10: History of injury or illness

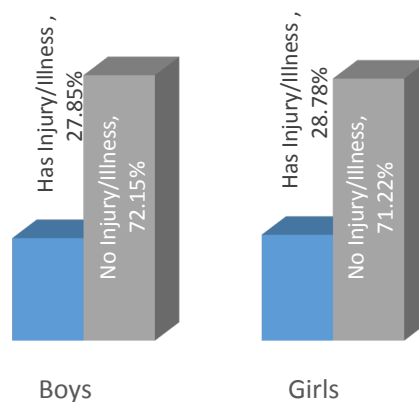
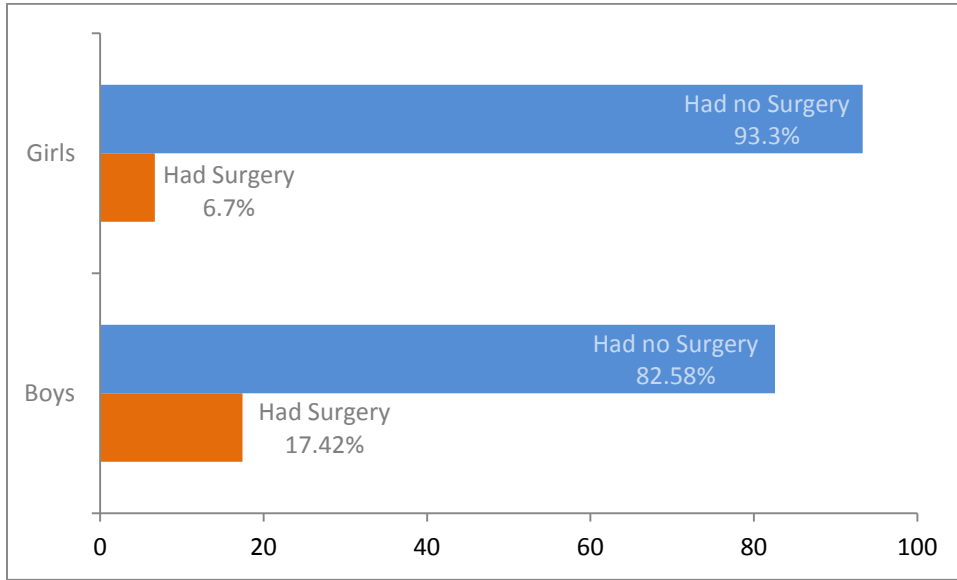


Figure 11: History of Surgery



Less than 8% had consulted for a chronic condition, indicating that only a small percentage of students have a chronic condition, *Figure 12*. This is further supported by the small proportion of students taking regular medication, *Figure 13*. A tiny percentage of students (less than 3%) had a history of being allergic to drugs, *Figure 13*.

Figure 12: Had history of regular consultations for a chronic condition

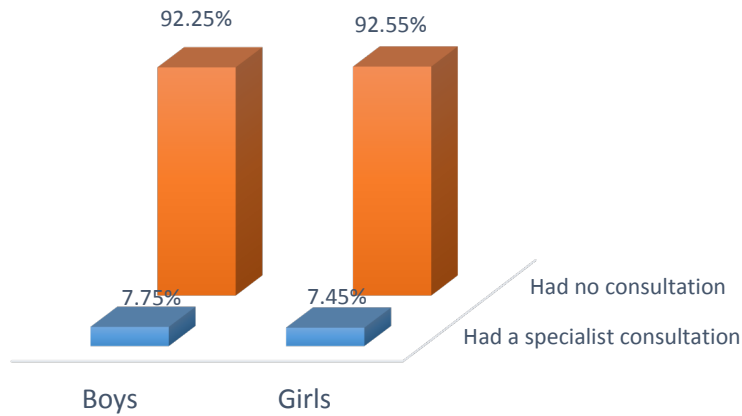
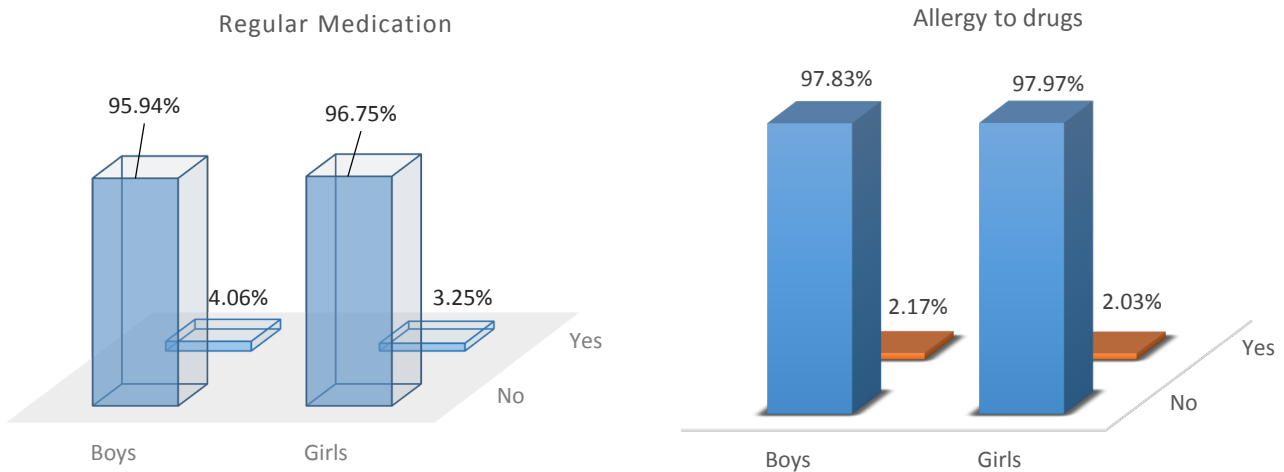


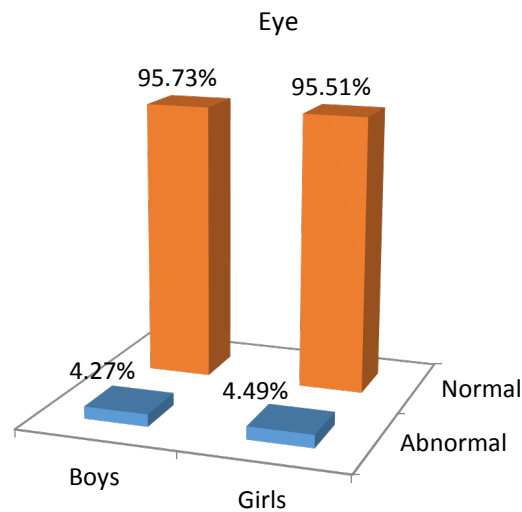
Figure 13: Regular Medication and allergy to drugs



Eyes

As far as the conditions of the eyes are concerned, less than 5% of the students had some sort of visual problem, *Figure 14*.

Figure 14: Eye



Ear, Nose and Throat (ENT)

A very small proportion of students suffered from ENT problems, of whom, less than 3% had Ear, Nose and Throat problems; and from those with Ear problems, less than 1% had problems with hearing, *Figure 15*. A tiny percentage, (less than 1%) of students had neck problems, *Figure 16*.

Figure 15: ENT

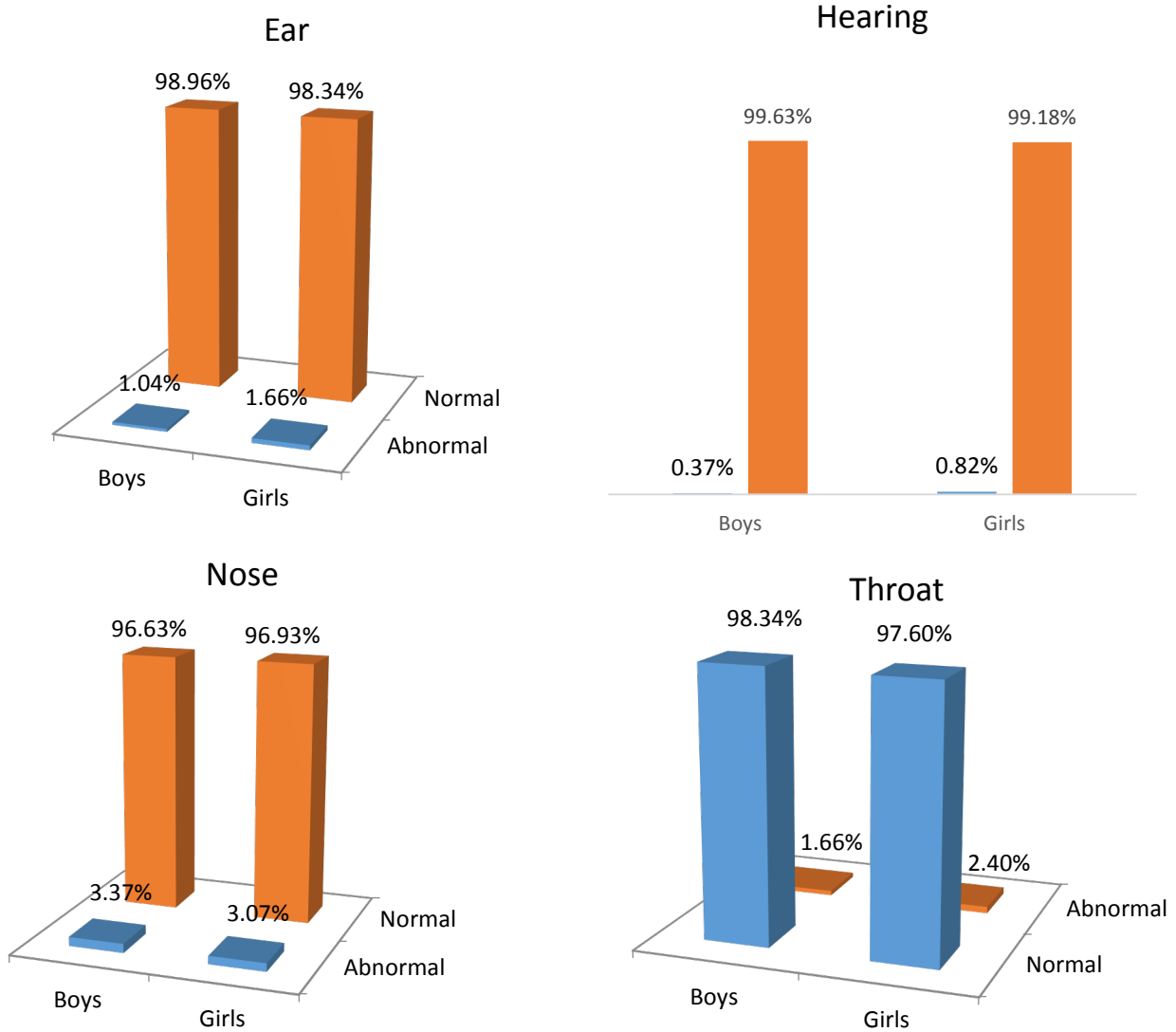
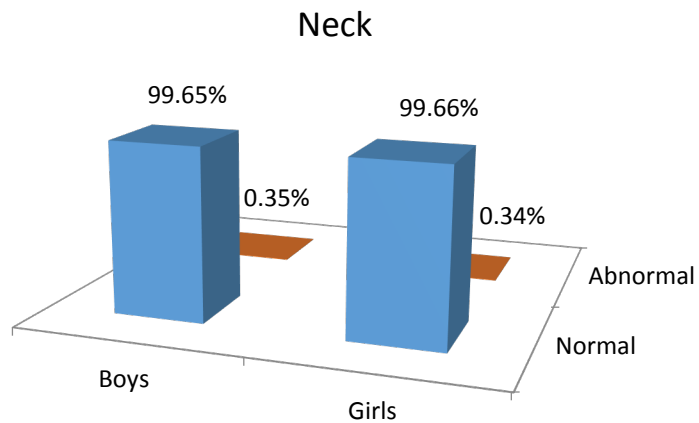


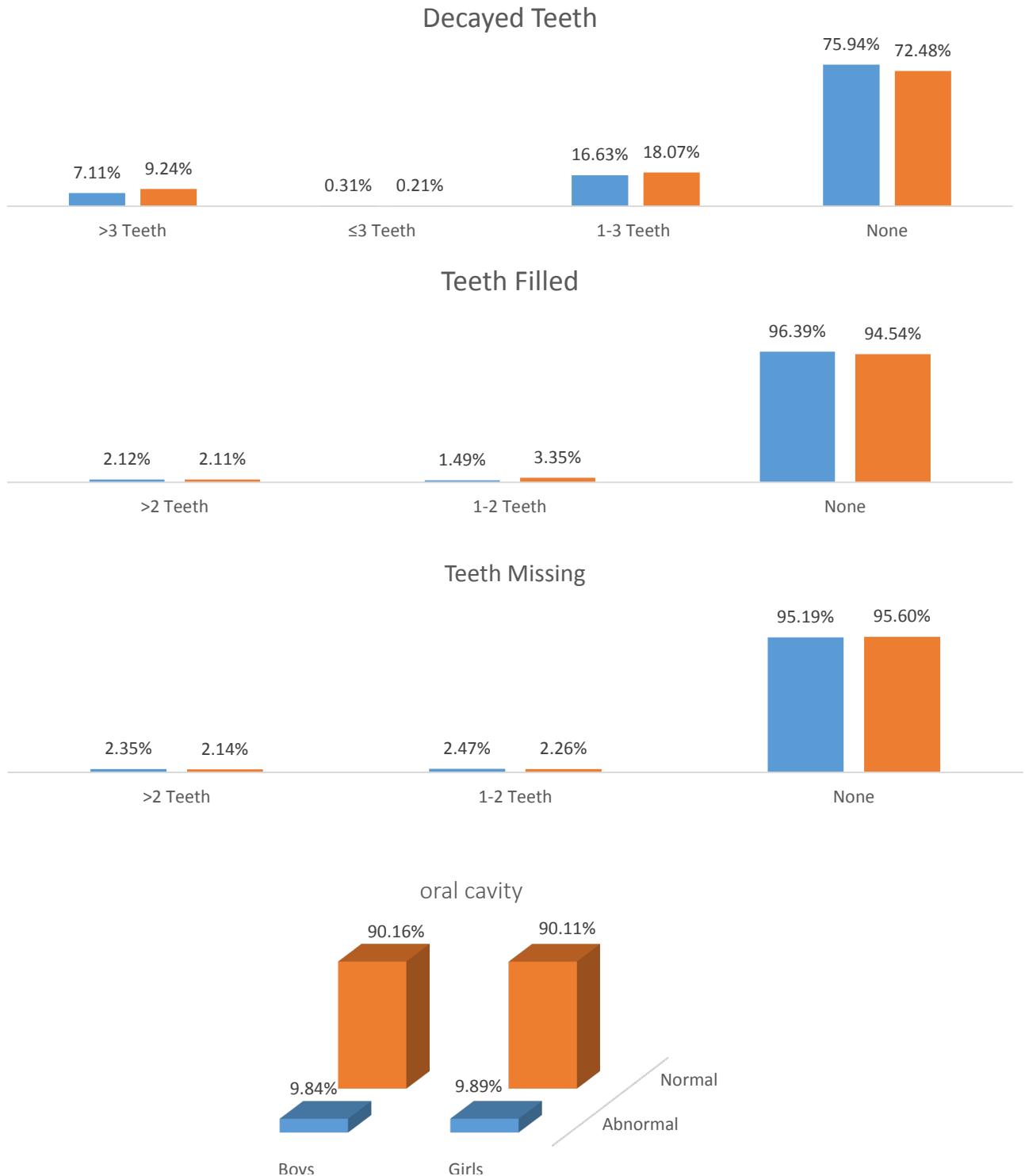
Figure 16: Neck



Dental Problems

Approximately a quarter of the students had dental problems while only about 10% had problems of the oral cavity, with hardly any gender wise discrepancies, *Figure 17*.

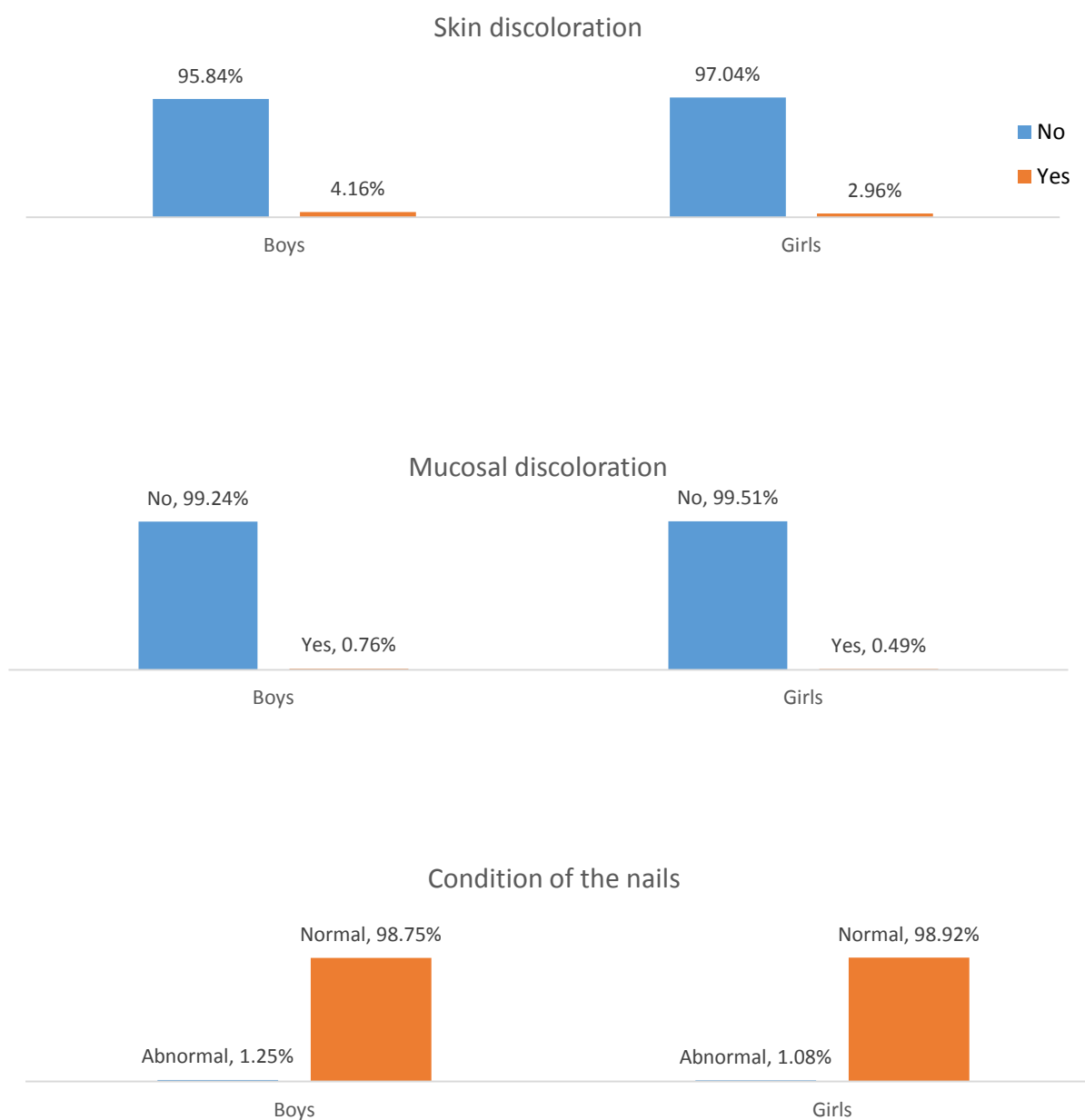
Figure 17: Dental problems



Skin, Mucosa and Nails

The condition of the skin, mucosa and nails of most of the students was good, only a minor proportion of them showed any problems. Aside from a slight discrepancy between girls and boys with skin conditions; which showed that fewer girls had skin conditions when compared to boys, there was not much difference between them, *Figure 18*.

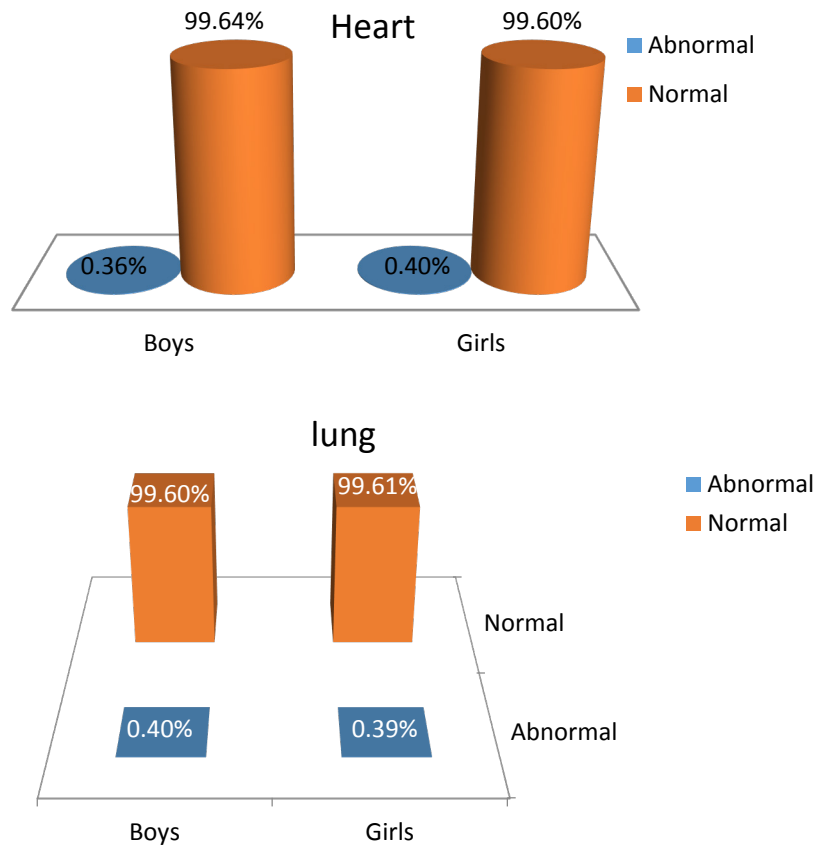
Figure 18: Skin, Mucosa and Nails



Heart, lung and Abdomen

It is with some relief we note that, only less than 0.5% had any heart, lung, or abdominal problems. Among those who had heart problems, congenital heart diseases and arrhythmias were common; and bronchial asthma was the predominant lung problem, *Figure 19*. Ophthalmologic and dental consultations were the most commonly sought consultations, followed by ENT, dermatological consultations and then the rest, *Figure 20*.

Figure 19: Heart Lungs and Abdomen



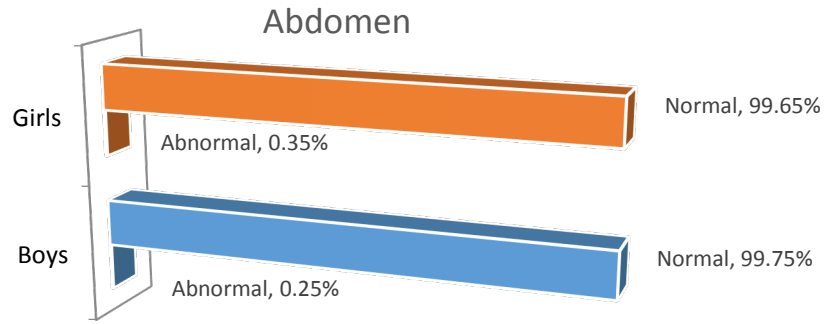
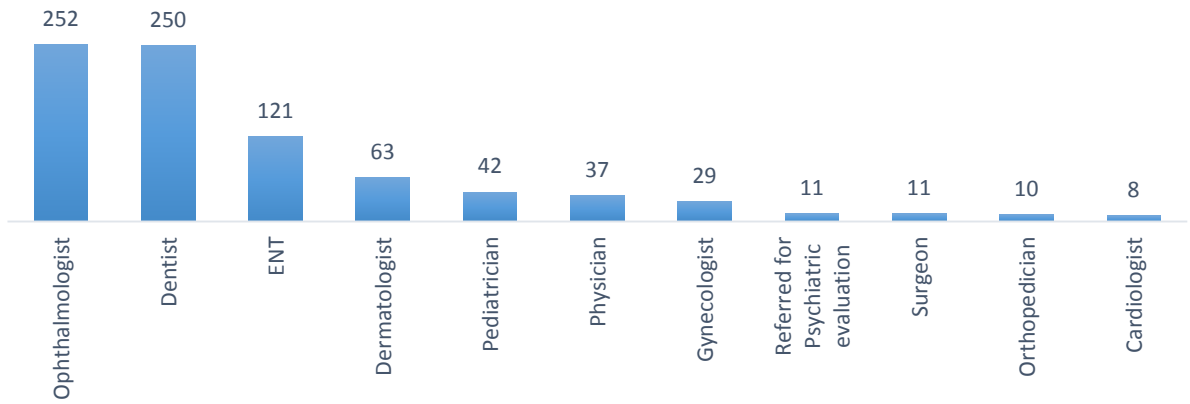


Figure 20: Specialist referral



Discussion and Recommendations

The general demographics such as height and weight and gender was evenly distributed, this is a good indication that in general, there is equal treatment of girls and boys. The fact that the number of girls and boys enrolled in schools across Maldives show such uniformity is a good sign of progress and increase in social awareness.

When we look at the general health indicators we see that even though the average haemoglobin level is within the normal range; about 30% of boys and 45 % of girls are anemic, indicating a clear area for further analysis and intervention. A small qualitative analysis of the nutritional habits of adolescent children may give us the information we need in order to prepare for a large scale survey on the nutritional habits of children in this age group; which may be the key to increasing the haemoglobin levels of the these adolescents. The average GRBS is 88.62 mg/dl, which could be because a proportion of students may have the habit of skipping breakfast. This too needs to be further assessed. Like many countries, Maldives too may be headed towards a future with increased problems with nutrition, our current analysis shows that among adolescents about half of the student population has got weight problem, either being overweight or being underweight. It can also be seen that among those who fall outside the normal range, most of the male population tend to be on the overweight side whereas the female tend to be underweight. Unhealthy, inactive lifestyles with unbalanced or poor nutrition may be the cause of this and as such warrants further exploration. Medical history of the students show that a sizable proportion had a medical history, this reason for such a large number of students having a medical condition could be made clearer by getting information on recent medical history. The current figure encompasses, any and all medical problem, such as; injury or illness, surgical history, chronic medical conditions, physical abnormalities, allergy to drugs and all types of diseases.

Majority of medical problems were vision disorders and dental problems, followed by bronchial asthma, dermatological problems and ENT problems. Tonsillectomy and appendectomy were the most common surgical procedure done. The extremities revealed problems such as muscle pain, joint pain, deformities, weakness, Synovitis and problems with mobility of the joints. Notable diseases among those getting treatment for chronic conditions include, thalassaemia, allergies, arthritis, asthma, eye and ENT conditions, renal problems, mental disorders, and epilepsy. About 5% of the students had some sort of visual problem so it is important to explore this further in order to determine whether there are any measures that could be taken in the future to decrease this number. A quarter of students had sort of dental problem, chief among which was dental caries. We don't have the habit of seeing a dentist on a regular basis in Maldives and this can be seen reflected in the number of dental problems seen among

the adolescent student population. Strong efforts need to be done in order to change behavior of both the students and their parents if we are to decrease the number of students with dental problems. Setting aside the poor dental, skin care seems quite adequate as about 95% of students had good skin condition. This is a step in the right direction but the remaining 5% should not be forgotten.

To reiterate, the results indicate that the primary focus of our attention should be nutrition and physical health. It can be inferred from this survey that the adolescent students are not eating an adequate balanced diet or they are eating too much junk food resulting in being, either underweight or overweight. A proper balanced diet and a healthy life style need to be incorporated into their life. The reasons for their low hemoglobin levels too need further exploration.

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