



# INTERNATIONAL JOURNAL OF PURE AND APPLIED RESEARCH IN ENGINEERING AND TECHNOLOGY

A PATH FOR HORIZING YOUR INNOVATIVE WORK



## SPECIAL ISSUE FOR NATIONAL LEVEL CONFERENCE "Technology Enabling Modernization of Rural India (TMRI- 2018)"

### COMPARASION OF GENERAL HEALTH PROBLEMS ASSOCIATED WITH DEFICIENCY OF SOME ELEMENTS IN ADOLESCENT GIRLS AND BOYS

DR. PRIYA VYAS<sup>1</sup>, AMIT TIWARI<sup>2</sup>

1.HOD (Science) VATSALYA PUBLIC SCHOOL, MANDSAUR (M.P.),

2.Asst. Prof. SURESH GYAN VIHAR UNIVERSITY, JAIPUR (RAJ.) INDIA

Accepted Date: 19/03/2018; Published Date: 01/04/2018

**Abstract:** According to World Health Organization, age range of 10-19 years is considered as adolescence. Adolescent constitute a large percentage in India. Adolescent girls and boys are more addicted to junk food or unhealthy life style. Use of electronic devices is affecting their mental health. The impact of unhealthy life style and their addiction for social media is making them unsocial and they are cutting off themselves from society and family. Due to these reasons now days, social, physical and mental health problems are continuously increasing in adolescent people. Major health problems in adolescent are associated with deficiency of vitamins and minerals which affects their life. In the present study we have focused on deficiency of some important elements in adolescence. The present study is survey based study; we have not gone for any medical testing because we are focusing on psychological behavior of adolescence, associated with element deficiency. Through the present study we have tried to do comparative survey on general health problems in adolescent girls and boys and make them aware about precautions and care they can have to reduce the risk of such health issues.

**Keywords:** Adolescence, healthy, disease and disease free State

Corresponding Author: PRIYA VYAS



PAPER-QR CODE

Access Online On:

[www.ijpret.com](http://www.ijpret.com)

How to Cite This Article:

Priya Vyas, IJPRET, 2018; Volume 6 (8): 32-40

## INTRODUCTION

Adolescence state begins with the onset of puberty leads to sexual maturation and continues through the transition state from childhood to young adulthood. Adolescent health is the range of approaches to preventing, detecting or treating young people's health and well being (1). Adolescence health is complex situation and it requires a comprehensive, biopsychosocial approach. People of this age group experience multiple health problems. Unhealthy situation in adolescence leads to improper development and growth. Use of drugs and alcohol and their addiction, sexual behavior, junk foods, addiction for social media, lack of physical activities and hormonal variations with other risk taking factors affect their mental and physical health. The impact of unhealthy life style and youth addiction for social media is making them unsocial and they are cutting off themselves from society and family. Adolescent health is also encompasses sexual and reproductive health (SRH) in young people (2). There is lack of awareness about harm associated with risk behaviors, and they do not know skills to protect themselves as well as they are lack of knowledge about how and where to seek help for their health concerns (3). In the present study we have done the comparative survey on general health problems in adolescent girls and boys and make them aware about precautions and care they can have to reduce the risk of such health issues. In the present study we have focused on deficiency of some important elements in adolescence.

## PLAN OF WORK

In the present study, adolescent students of age group 12-17 years studying grade 8<sup>th</sup>-12<sup>th</sup> in Mandsaur, Madhya Pradesh, India, were involved. Biology teacher has demonstrated them about different healthy, diseased and disease free condition, and also about cure and prevention from diseases. Students were investigated, if they have any disease or minor-major health problems. No specific disease were asked. This survey based study is presented on the basis of collection of health issues revealed by students. Reasons of diseases and which medicines if they are taking, was asked. Student's life style and regular diet were discussed. After collecting all above mentioned information, data is observed and comparative study on different diseases in girls and boys of 12-17 age groups was done.

## OBSERVATION

Students of age group 12-17 years of grade 8<sup>th</sup>-12<sup>th</sup> were involved in this general survey based study. 20 boys and 20 girls of each age group were involved and above enquiries were observed and discussed with them separately.

Common health problem in girls and boys which were revealed by students are categorized and these are deficiency of vitamins and minerals, digestive disorder, respiratory disorder, circulatory disorder, nervous disorder, ache or pain, different types of inflammation and allergies in them, hormonal variations, genetic disorder and some other problems too. In the present survey based study we observed that most of the adolescent people are deficient in calcium, vitamin D, protein, Iron, and vitamin A.

## RESULTS AND DISUSSION

Following health problems associated with deficiency of some materials were revealed by students. And we have compared them. Students have revealed that calcium, protein, hemoglobin/iron, vitamin D and vitamin A deficiency are more common in adolescence.

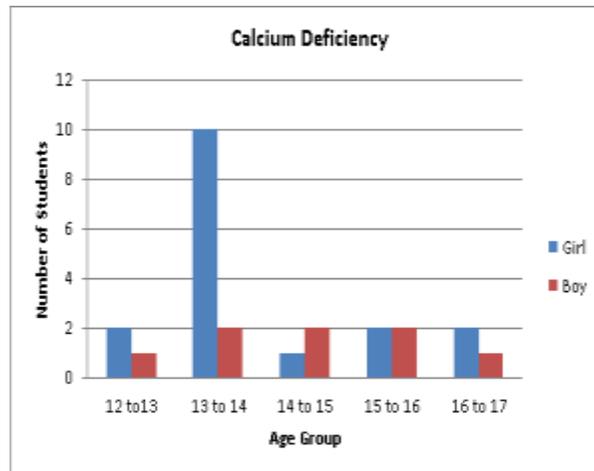
Through the present survey based study we came to know that some adolescence students were deficient in calcium, protein, hemoglobin, vitamin D and vitamin A. The reason may be lack of nutritious diet. Because it was shocking but many students accepted that they are used to eat junk food.

Calcium Deficiency:

Calcium is most important for bone mineralization, primarily related to bone health, which include formation and maintenance of the structure and rigidity of the skeleton. (4,5). Through the present study we could observe that out of 20 boys and 20 girls of each group, following number of students of each age group are deficient in calcium.(Table 1).

Age group (in years)	Girls number	Boys number
12-13	2	1
13-14	10	2
14-15	1	2
15-16	2	2
16-17	2	1

Table 1. Calcium Deficiency



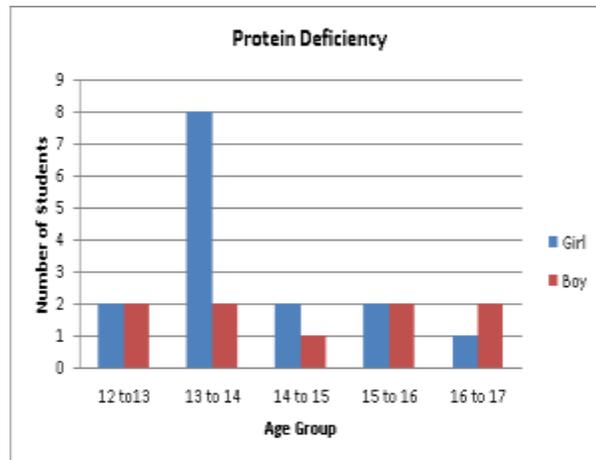
**Protein Deficiency :**

Protein is one of the most important nutrients for human body. 12 to 17 years need about 0.85 grams of protein for each kilogram of body weight. It is required for the growth and repair of muscles and tissues, and the production of enzymes and hormones. In case of too low calories, the body uses protein for energy, leaving less for its other roles (6).

Through the present study we could observe that out of 20 boys and 20 girls of each group, only one student of 16-17 age group has protein deficiency. (Table 2).

Age group (in years)	Girls number	Boys number
12-13	2	2
13-14	8	2
14-15	2	1
15-16	2	2
16-17	1	2

**Table 2. Protein Deficiency**



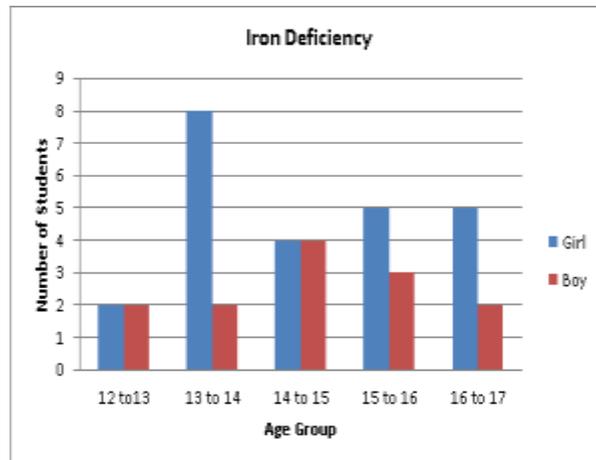
**Iron Deficiency:**

Currently, many adolescents consume unbalanced diets which may limit mineral intake leads to deficiency of iron. (7) Iron is important for muscle and blood formation. Iron is the major component of hemoglobin which is essential to carry oxygen around the body. Girls are particularly 'at risk' of developing iron deficiency as they begin to menstruate consequently, to anemia, a nutritional deficit of worldwide prevalence.

Through the present study we could observe that out of 20 boys and 20 girls of each group, following number of students of each age group are deficient in iron. (Table 3)

Age group	Girl	Boy
<b>12 to 13</b>	2	2
<b>13 to 14</b>	8	2
<b>14 to 15</b>	4	4
<b>15 to 16</b>	5	3
<b>16 to 17</b>	5	2

**Table 3. Iron Deficiency**



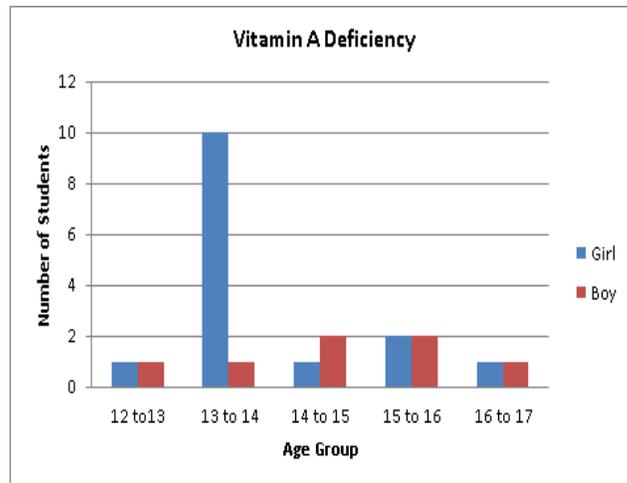
Vitamin A Deficiency:

An antioxidant vitamin A which naturally slow ageing, maintains healthy vision, neurological function, healthy skin, and more. This vitamin is also important for building strong bones, regulating gene regulation, maintaining healthy clear skin, facilitating cell differentiation, and supporting immune function.

Through the present study we could observe that out of 20 boys and 20 girls of each group, following number of students of each age group are deficient in vitamin A. (Table 4)

Age group	Girl	Boy
12 to 13	1	1
13 to 14	10	1
14 to 15	1	2
15 to 16	2	2
16 to 17	1	1

Table 4. Vitamin A Deficiency

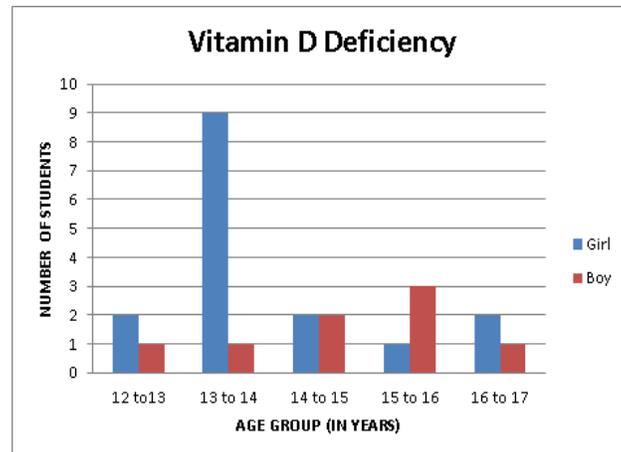


Vitamin D Deficiency:

Exposed skin to ultraviolet radiation from the sun, induce Vitamin D synthesis by the body. Vitamin D plays a important role in the growth, maintenance and repair of bones by regulating the body's absorption and metabolism of calcium. It also helps keep blood pressure in balance. It is required for the proper functioning of the immune and neurological systems It is called as wonder vitamin and it reduce the risk of diabetes, heart disease, high blood pressure, obesity, bone disorders like osteoporosis and certain types of cancer, including breast, prostate and colon cancer. "The Journal of Clinical Endocrinology and Metabolism," adolescents who are obese are at a higher risk of vitamin D deficiency resulting bone and muscle pain. (8) Through the present study we could observe that out of 20 boys and 20 girls of each group, following number of students of each age group are deficient in vitamin D.

Age group (in years)	Girls number	Boys number
12-13	2	1
13-14	9	1
14-15	2	2
15-16	1	2
16-17	2	1

Table 5. Vitamin D Deficiency



## CONCLUSION

Calcium functioning is associated with vitamin D. Present data discloses that most of the students who are calcium deficient are also vitamin D deficient, Protein deficiency is also linked with vitamin A and students who were anemic facing iron/hemoglobin deficiency are deficient in vitamin A.

The present study revealed that in adolescent students, in mineral category calcium deficiency is most common because of which bones are not so strong. In nutrient category, protein deficiency is common but observed only in a girl. Iron and vitamin A deficiency is the most common deficiency in mineral and vitamins category. Present comparative data discloses that girls of age group 13-14 years are more at risk level of these deficiencies.

For calcium and vitamin D, milk intake is the best option for adolescent group, for protein pulses, fish and egg, while for iron and vitamin A green leafy vegetables like spinach, guard, and fruits are the best source.

Proper nutritious and balanced diet along with proper healthy life style should be given to adolescent girls and boys to make them safe and healthy.

## REFERENCES

1. WHO 2017, recommendations on adolescent health: guidelines approved by the WHO Review, Geneva: World Health Organization
2. International technical guidance on sexuality education: An evidence-informed approach (PDF). Paris: UNESCO. 2018. p. 22. ISBN 978-92-3-100259-5.

3. Chown P, Kang M, Sancu L, Newnham V and Bennett D 2008, Adolescent Health: enhancing the skills of General Practitioners in caring for young people from culturally diverse backgrounds, NSW Centre for the Advancement of Adolescent Health and Transcultural Mental Health Centre.
4. Cobayashi F. Cálculo: seu papel na nutrição e saúde. *Compacta Nutr.* 2004;2:3-18.
5. Joint FAO/WHO Expert Consultation on Human vitamin and mineral requirements. Bangkok; 1998.
6. How Much Protein do Teens Need? February 28, 2017 by Catherine Atchison, Registered Dietitian [www.healthyfamiliesbc.ca/home/blog/how-much-protein-do-teens-need](http://www.healthyfamiliesbc.ca/home/blog/how-much-protein-do-teens-need).
7. Mesías M<sup>1</sup>, Seiquer I, Navarro MP. Iron nutrition in adolescence. *Crit Rev Food Sci Nutr.* 2013;53(11):1226-37. doi: 10.1080/10408398.2011.564333.
8. [healthyeating.sfgate.com](http://healthyeating.sfgate.com)