

AN OBSERVATIONAL STUDY TO ASSESS THE COMPLIANCE AND OUTCOMES ASSOCIATED WITH NATIONAL DEWORMING PROGRAMME, IRON AND FOLIC ACID SUPPLEMENTS PROVIDED TO SCHOOL CHILDREN

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ABSTRACT

Anemia is one of the prevailing nutritional health problems in adolescent boys and girls affecting worldwide. Deworming and iron supplementation are critical components of many school health programmes to prevent anaemia among school children. The aim of this study is to assess the compliance rate, reasons for non compliance and outcomes of national deworming programmes and iron supplements provided in 4 government schools. A total of 400 students were included in the study. All relevant data were collected and documented in a pretested, predesigned and semi structured questionnaire. About 54.2% were girls and 45.8% were boys. About 67.7% of students reported to consume 6 tablets per week regularly and 32.3% were considered to be non compliant. Among 129 children, the reasons quoted for non compliance were 40.3% side effects, 6.9% absentees, 12.4% powdery tablets, 6.4% not prescribed by the doctor and 34.1% unpalatable. In this study about 69.8% of students reported an improvement in sense of well being, reduction in tiredness and weight gain as major benefits from the consumption of iron and folic acid tablets. Thus, the National deworming program, Iron and folic acid supplementation ensured good compliance among school children.

KEYWORDS: Deworming, compliance, iron and folic acid supplements, adolescent.

INTRODUCTION

Anaemia is a common nutritional health problem, worldwide affecting both developed and developing countries. About 1 billion school age children are estimated to live in areas with stable transmission of at least one soil transmitted helminths,^[1] while approximately 600 million preschool and school children globally are estimated to suffer from anaemia. An estimated 56% adolescent girls and 30% adolescent boys in India are anaemic, according to third national family health survey.^[2]

Anaemia results into decreased concentration, weakness, menstrual irregularities affecting physical and mental health. The most common causes of iron deficiency anaemia are wrong dietary habits, menstrual loss of blood and hermetic infections.^[3] Thus, deworming and iron supplementation are critical components of many school health programmes to eradicate and prevent helminthiasis and anaemia among school children.

Compliance to deworming, iron and folic acid supplement may increase school attendance and improve educational outcomes.^[4] Study conducted by Prasad J D

et.al, reported major reasons for non compliance of deworming, iron and folic acid supplements were absentees, powdery tablet and side effects. Benefits of compliance were improved sense of wellbeing, reduction in breathlessness, tiredness, and increase in appetite. Thus, there is a necessity to assess the compliance and outcome of deworming, iron and folic acid supplements provided among school children.

In this study we have determined the rate of compliance, adverse effects and reasons for non compliance for deworming, iron and folic acid supplements after providing health education to prevent anaemia and helminthiasis.

MATERIALS AND METHODS

Study area and design

An observational study was conducted in 4 government high schools, North Mysuru, Mysuru district, Karnataka, India, from January 2019 to March 2019. All adolescent school children aged 11 to 15 years were enrolled as study participants.

Data collection

The students were interviewed using a pretested, predesigned and semi structured questionnaire. Information was collected about demographic details like name, age, gender and class type.

Permission was obtained from Block educational officer, North Mysore and Principals of schools for conducting the study.

Statistical analysis

Data were entered and analysed in the computer using SPSS version 20.0. Results were compiled as means and percentages and showed in form of graphs and tables.

Ethical considerations

Ethical clearance was obtained from the Institutional Ethics Committee, Mysore Medical College and Research Institute. Data were collected after students signed a written informed consent.

Table 2 : Knowledge about symptoms of anaemia and the tablets they are consuming.

Variable	Options	Boys (n = 183)	Girls (n = 217)	Total (n = 400)
Symptoms of anaemia	Tiredness	89	149	238
	Breathlessness	49	38	87
	loss of appetite	45	30	75
Tablets	Iron and folic acid	127	184	311
	Albendazole	56	33	89

Side effects of Iron and Folic acid supplementation

The majority of students (65.7%) did not have any side effects. Remaining reported side effects like nausea and

RESULTS**Gender and mean age distribution**

Out of 400 students, there were 183(45.8%) boys and 217 (54.2%) girls. Mean age of 183 boys was ± 13.5 years and 217 girls was 13 years, as shown in table 1.

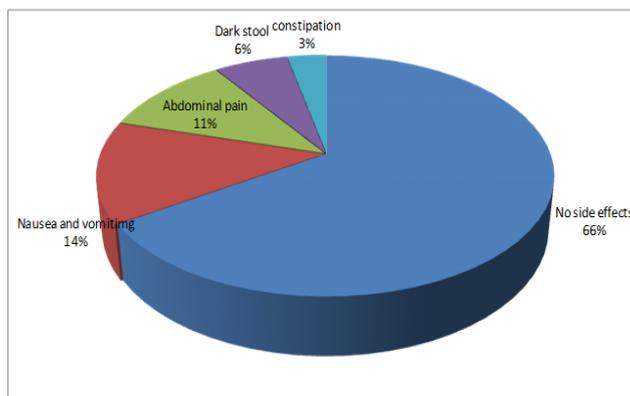
Table 1: Gender and mean age distribution.

Characteristics	Frequency	Mean
Boys age	183	13.5
Girls age	217	13

Knowledge about symptoms of anaemia and tablets consumed by students

Majority of participants answered correctly about symptoms of anaemia as tiredness, breathlessness and loss of appetite, also were aware that tablet contains albendazole, iron and folic acid as shown in table 2.

vomiting (13.6%), abdominal pain (11%), dark stools (6.2%) and constipation (3.3%) as shown in figure 1.

**Figure 1: Side effects due to Iron and folic acid supplement.****Tablets consumed in a week**

About 271(67.7%) of students reported to consume 6 tablets per week and were considered to be compliant. 129 (32.3%) students who consumed less than 6 tablets

per week were considered to be non compliant. There were no significant difference between boys and girls as shown in table 3.

Table 3: Number of tablets students consumed in a week according to gender.

Options (tablets consumed per week)	Boys (n= 183)	Girls (n = 217)	Total (n = 400)
0 – 2	33 (18%)	26(11.9%)	59(14.8%)
3 – 5	31(16.9%)	39(18%)	70(17.5%)
6	129(70.4%)	142(65.4%)	271(67.7%)

Reasons for non compliance

The reasons for non compliance reported by 129(32.2%) non compliant students were due to side effects 52(40.3%), absentees 9(6.9%), powdery tablet 16 (12.4%), not prescribed by a doctor 8(6.2%) and unpalatable 44(34.1%) as shown in figure 2.

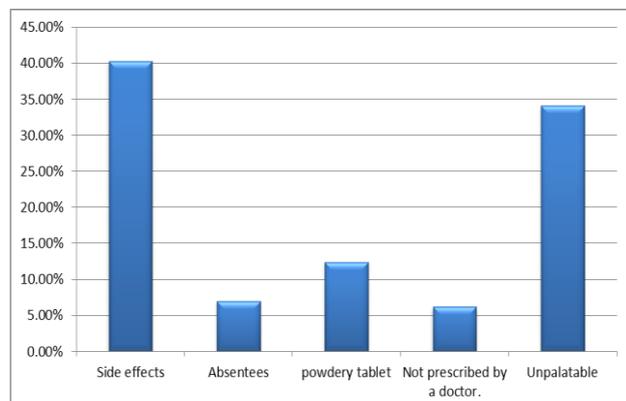


Figure 2: Reasons for non compliance.

About 279(69.8%) participants showed an improve in sense of wellbeing, reduction in tiredness and weight gain as major benefits from iron and folic acid tablets consumed.

DISCUSSION

In this study 54.2% were girls and 45.8% were boys. In case of both boys and girls mean age was 13 years. This is similar to the study done by Dhikale et.al,

Majority of students were aware about anaemia and its symptoms. About 87.7% of students know that iron and folic acid supplements are used to treat anaemia. About 82% were aware about albendazole tablet and its method of consumption.^[5]

About 263(65.7%) of students did not experience any adverse effects and the remaining 137(35.2%) students reported nausea and vomiting(13.6%), abdominal pain(11%), dark stools(6.2%) and constipation (3.3%) for iron and folic acid tablets.

Majority of 57.7% students reported to consume 6 tablets per week and were considered to be compliant. About 32.3% students showed non compliance to IFA tablets. But in case of deworming tablets every student had consumed albendazole first dose on February as a part of National deworming programme. Our findings are very contrasting to the study done by Sarada A K and Thilakan in Kannur, India,^[6] which shows 3/4th of students not consumed iron and folic acid supplements. 32.3% of study participants were not consuming IFA tablets and the quoted reasons were due to side effects, absentees, powder tablet, not prescribed by a doctor and unpalatable. This is similar to the study done by Dhikale et.al in Pondicherry, India.^[7]

CONCLUSION

The programme has assured good compliance to IFA and deworming tablets consumption among school children. However, to strengthen the National deworming programme further, awareness about side effects on IFA tablets consumption and health education components for students regarding good hygiene habits, iron rich diet should be strengthened. Regarding the supply the IFA tablets should be ensured of good quality.

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