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Knowledge, Attitude and Practices (KAP) related to *Pandu Roga* (Iron Deficiency Anaemia) among Adolescent Girls attending Ayurveda Tertiary Care Hospital and Nearby Schools - A Survey

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ABSTRACT

Introduction: According to Ayurveda, depletion of *Rasa* and *Rakta Dhatu* results in yellowish-white discoloration of body known as *Pandu Roga*. Its features resemble with IDA (Iron Deficiency Anaemia). It is very common among female adolescents. UNICEF observed that more than half of population of adolescent girls in India are anemic. Lack of knowledge is one of the most significant reason for nutritional problems like anaemia. **Aim:** To evaluate the level of knowledge, attitude and practices regarding *Pandu Roga* (Iron Deficiency Anaemia) among female adolescents. **Material and Methods:** In this study 200 adolescent girls aged between 10 to 16 years visiting *Kaumarabhritya* OPD, A.I.I.A hospital and nearby government schools were assessed on the basis of a 'Knowledge, Attitude and Practices (KAP) Questionnaire' regarding *Pandu Roga* (IDA). **Result:** It was found that most of the screened adolescents had poor knowledge of *Pandu Roga* (IDA), its causes, prevention and management. **Discussion:** *Pandu Roga* (IDA) is a dangerous health problem globally, if not attended in time may result into grave outcomes, hence emphasis should be made on its prevention in addition to the cure. **Conclusion:** There is a need to focus on various health education programs for prevention of nutritional problems like IDA.

Key words: *Pandu Roga*, *Anaemia*, *KAP Questionnaire*, *Adolescent Girls*.

INTRODUCTION

As per Ayurveda texts, pallor on skin is the prominent diagnostic feature of *Pandu Roga* which occurs due to vitiation of *Pitta Pradhana Tridosha*, which in turn causes loss of *Varna* (skin texture and colour), *Bala* (strength), *Sneha* (luster), *Oja Guna* with deficiency of *Rakta* (blood) and *Meda* (Fat) *Dhatu*.^[1] Due to resemblance in sign and symptoms, *Pandu Roga* is

commonly correlated with Iron Deficiency Anemia (IDA). Anemia is a serious public health problem worldwide.^[2] Adolescents, especially girls, are more prone for nutritional deficiency disorders amongst Indian population.^[3] Prevalence of anemia in adolescent school girls in India is 60% to 90%.^[4] As per W.H.O, body needs more iron during rapid growth phase or menstruation; thus, adolescent girls are at a greater risk of developing iron deficiency anemia.^[5] According to the National Family Health Survey-III, 56% of adolescent girls aged 15-19 years suffer from some form of anemia.^[6] Dietary knowledge and access to resources are important to improve the health and nutrition in a sustainable way.^{[7],[8]} Adolescence is the time to learn and adopt healthy habits as a preventive measure from many health and nutritional problems later in life. Health education in schools plays an essential role in increasing the knowledge of the students.^[9] Continuous practice of unhealthy food habits leads to serious effects upon health status of an individual.^[10] Previous researches found poor

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knowledge and attitude regarding healthy eating patterns leading to unhealthy eating practices.^[11] According to a study, knowledge, attitude and practices regarding healthy nutritional status has shown importance in prevention of nutrition related health problems; and such studies are still very few in number in developing countries.^[12] Improvement in knowledge, attitude and practices of adolescents is very important in order to develop a society which is conscious towards having healthier population.^[13] So, the present study aimed at investigating appropriate knowledge, attitude and practices (KAP) regarding *Pandu Roga* (IDA) among female adolescent in the O.P.D and nearby schools of All India Institute of Ayurveda (AIIA), Delhi.

MATERIALS AND METHODS

A cross-sectional study was conducted among 200 adolescent school girls in the age group of 10-16 years in O.P.D and nearby schools of AIIA, Delhi. After taking permission from head of the school, students were interviewed by using a pre-designed, validated Knowledge, Attitude and Practices (KAP) questionnaire.^[14] The questionnaire was divided into three parts, namely knowledge (9 questions), attitude (6 questions) and practices (3 questions). Some more questions were added to the validated KAP questionnaire as the same questionnaire was found insufficient to assess KAP as per the Indian scenario. The added questions were also validated by peers. So, after addition, the KAP questionnaire consisted of 35 multiple-choice questions knowledge (20 questions), attitude (9 questions) and practices (6 questions). The responses were assessed using percentage analysis.

RESULTS

Table 1: Knowledge question answer characteristics and response of the participants

Characteristics		Response	
		N	%
K.1 Have you heard about Iron deficiency anaemia?	Yes	85	42.5
	No	115	57.5

K.2 How you can recognize someone who has anaemia?	Know	26	13
	Don't know	174	87
K.3 Consequences of iron deficiency anaemia for infants and young children?	Know	26	13
	Don't know	174	87
K.4 Consequences of iron deficiency anaemia for pregnant women?	Know	19	9.5
	Don't know	181	90.5
K.5 Causes of iron deficiency anaemia?	Know	60	30
	Don't know	140	70
K.6 Prevention of anaemia?	Know	55	27.5
	Don't know	145	72.5
K.7 Iron rich foods easily absorbed?	Know	39	19.5
	Don't know	161	80.5
K.8 Foods that decreases iron absorption?	Know	37	18.5
	Don't know	163	81.5
K.9 Foods that increases iron absorption?	Know	47	23.5
	Don't know	153	76.5
K.10 The disease anaemia denotes deficiency of blood in the body?	Yes	144	72
	No	56	28
K.11 Can the disease occurs at any age?	Yes	110	55
	No	16	8
	Don't know	74	37
K.12 Is the disease contagious?	Yes	24	12
	No	37	18.5
	Don't know	139	69.5

K.13 Nutrients deficiency mainly iron deficiency is the cause of anaemia?	Yes	79	39.5
	No	15	7.5
	Don't know	106	53
K.14 Excessive bleeding is also a cause of the disease?	Yes	65	32.5
	No	26	13
	Don't know	109	54.5
K.15 Anaemia is more prevalent in female population as compared to male population?	Yes	41	20.5
	No	22	11
	Don't know	137	68.5
K.16 Anaemia mainly occurs during adolescent and pregnancy?	Yes	34	17
	No	21	10.5
	Don't know	145	72.5
K.17 Light yellow or whitish discoloration is the main symptom of the disease?	Yes	84	42
	No	28	14
	Don't know	88	44
K.18 Fatigue, weakness, dyspnoea and headache are also seen in IDA?	Yes	86	43
	No	18	9
	Don't know	96	48
K.19 Blood investigation shows haemoglobin deficiency in IDA?	Yes	54	27
	No	11	5.5
	Don't know	135	67.5
K.20 Is the disease curable?	Yes	93	46.5
	No	11	5.5
	Don't know	96	48
N - No. of girls, % - No. of girls in percentage.			

Table 2: Attitude question answer characteristics and response of the participants

Characteristics		Response	
		N	%
A.1 How likely do you think you are to be iron deficient/anaemic?	Not likely	81	40.5
	Not sure	114	57
	Likely	5	2.5
A.2 How serious do you think iron deficiency anaemia is?	Not serious	22	11
	Not sure	125	62.5
	Serious	53	26.5
A.3 How good do you think it is to prepare meals with iron rich foods?	Not good	17	8.5
	Not sure	103	51.5
	Good	80	40
A.4 How difficult is it for you to prepare meals with iron rich foods?	Difficult	66	33
	So-so	94	47
	Not difficult	40	20
A.5 How confident do you feel in preparing meal with iron rich food?	Not confident	45	22.5
	Ok/so-so	130	65
	Confident	25	12.5
A.6 How much does you like the taste of iron rich food item	Dislike	27	13.5
	Not sure	91	45.5
	Like	82	41
A.7 Intake of balanced diet, nutrients mainly iron containing food items are helpful for prevention and cure of IDA?	Yes	50	25
	No	17	8.5
	Don't know	133	66.5
A.8 Is it necessary to consult a physician if symptoms of IDA are	Yes	95	47.5
	No	105	52.5

seen?			
A.9 Have you ever felt the symptoms of IDA?	Yes	26	13
	No	78	39
	Don't know	96	48
N - No. of girls, % - No. of girls in percentage.			

Table 3: Practice question answer characteristics and response of the participants

Characteristics		Response	
		n	%
P.1 Heme iron intake yesterday?	Know	47	23.5
	Don't know	153	76.5
P.2 Do you consume vit-c rich fruits usually?	Yes	105	52.5
	No	95	47.5
If yes in p.2 question P.2.1 Do you consume vit-c rich fruits daily?	Yes	92	46
	No	108	54
P.2.2 When do you usually eat fresh citrus fruits?	Before meal	37	18.5
		25	12.5
	During meal	34	17
	After meal	52	26
	Other		
P.3 Do you consume tea/coffee usually?	Yes	81	40.5
	No	119	59.5
If yes in p.3 question P.3.1 Do you consume tea/coffee daily?	Yes	64	79.01
	No	17	20.9

P.3.2 When do you usually drink tea/coffee?	2hr before meal	30	37.03
		2	2.46
	Direct before meal	4	4.93
		1	1.23
	During meal	4	4.93
		40	49.38
	Direct after meal 2hr after meal No time		
P.4 Do you take balanced and nutritious diet regularly for prevention of the disease?	Yes	94	47
	No	38	19
	Don't know	68	34
P.5 Do you discuss regarding IDA with people around you?	Yes	62	31
	No	138	69
P.6 Are you in habit of taking green leafy vegetables and fruits regularly?	Yes	104	52
	No	50	25
	Don't know	46	23
N - No. of girls, % - No. of girls in percentage.			

DISCUSSION

It is stated that achieving the desired change of behavior towards nutrition and health depends upon gaining sufficient knowledge, change in attitude and developing good practices related to nutrition and health.^[15] In this study, 42.5% girls had heard about iron deficiency anaemia which is higher than observation made in a study by Monika Singh et.al.^[16] But it was not compatible with another study.^[14] Percentage of girls having knowledge regarding causes and prevention of anaemia were higher than the previous study.^[14] 23.5% were aware regarding food items that increases iron absorption which was lower than the previous study observation.^[14] 13% of girls were aware of the consequences of iron

deficiency anaemia in infants and young children which was lower than the previous observation.^[14] It was observed that less than fifty percent of girls were aware of the causes, pathology, consequences, prevention and treatment of iron deficiency anaemia. As this study was conducted on the population living in urban slum areas, major subjects involved in the study belongs to low socio-economic status and illiterate parents. Thus, they don't grow under the shelter of good health education programs. 11% thought IDA as a non-serious disease which was lower than the observation made in the previous study.^[14] Percentage of girls having habit of consuming Vit-C rich fruits and tea/coffee usually was lower than the previous observations.^[14] 52% of girls were in habit of taking green leafy vegetables and fruits regularly. Regarding attitude and practices, it was observed that most of the girls were in undesirable direction. As, during adolescence children spent their day time in school and tuitions thus, remains in the habit of consuming excessive outside food items hence, remain devoid of healthy and nutritious food items. These habits of irrational and under-nutritious eating practices make them more prone for the diseases like *Pandu Roga* (IDA). The observations of this study vary from the previous studies as KAP depends on various factors like, environment, socio-economic status, parental education, school education, other health education programs imparted in the particular area. And all these factors may vary from place to place.

CONCLUSION

Lack of knowledge leads to incorrect attitude and practices which is one of the most significant reason for nutritional problems like anaemia. The magnitude of *Pandu Roga* (IDA) as a health problem is high and can be controlled by increasing awareness and the promotion of correct attitudes and practices. Due to lack of awareness, health education programs and facilities need to be imparted at home, school and community level to all age groups especially to adolescent girls.

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