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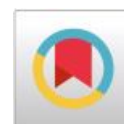**A knowledge Repository**

Social

A TOOL CONSTRUCTION AND STANDARDIZATION OF NUTRITION KNOWLEDGE OF HIGH SCHOOL STUDENTS

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Abstract

In the present study, Nutrition knowledge scale has been constructed and standardized of the High School Students. This scale consists of 54 statements. The simple random sample technique was used for this study. The sample consists of 50 High School Students are randomly selected from the Kancheepuram Districts. The 't' value was sued to standardize the tool and finally 29 statements were retained for the final study.

Keywords: Nutrition Knowledge, High School Students.

1. Introduction

The World Health Organization has stated that nutrition is an input to and foundation for health and development. Proper nutrition makes people stronger and more productive. Healthy eating habits lead to a stronger immune system, less illness, and better health. Proper and healthy nutrition is a fundamental key to a better quality of life (WHO, 2007).

2. Definition of Nutrition Knowledge

Nutrition knowledge, broadly defined, refers to knowledge of concepts and processes related to nutrition and health including knowledge of diet and disease, foods representing major sources of nutrients, and dietary guidelines and recommendations. (Axelson & Brinbery, 1992; Mckinnon, Giskes, & Turrell, 2014; Moorman, 1996; Parmenter & Wardle, 1999).

The nutrition knowledge acquired throughout school life is a factor of interaction between the school curriculum, school environment, the family and community (FAO 2005b).

3. Objectives of the Study

The objective of the present investigation to develop a tool to measure the nutrition knowledge of high school students. As there is no suitable tool available for the purpose the investigator has constructed and validated one in order to realize her objectives. The Nutrition Knowledge Inventory (NKI) is a two point scale. i.e. 'Yes' and 'No' type.

Pilot Study
This inventory of 54 statements intended for pilot study was administrated to the sample, 50 high school students studying in the Kancheepuram district. Then their responses have been scored carefully and the marks secured by all the students have been arranged in the descending order from the highest score to lowest score. Then, they were subjected to item analysis.

Item Analysis
The next step in the standardization of nutrition knowledge inventory after pilot study is to find out the 't' value of each statement which forms the basis for item selection in order to build up the final inventory.
The two point scale calls for 'Yes' or 'No' response to each statement. For positive statements one is given to 'Yes' response and zero is given to 'No' response. The scoring scheme is reversed for the negative statements.

Table 1: Scoring key of the inventory according to the nature of items

Nature of the Items	Yes	No
Positive: 1, 2, 3, 4, 8, 10, 12, 13, 14, 15,16, 17, 18, 20, 24, 25, 26, 27, 29, 30, 31, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 53, 54.	1	0
Negative: 5, 6, 7, 9, 11, 19, 21, 22, 23, 28, 32, 38, 40, 46.	0	1

Table 2: Nutrition Knowledge Inventory Dimension wise according to the nature of items

Dimension	Nature of the Items		Total
Factors Regarding Source of Nutrition	Positive	1, 2, 3, 4, 8, 10, 12, 13, 14, 15, 16, 17	17
	Negative	5, 6, 7, 9, 11	
Factors Regarding Deficiency of Nutrients	Positive	18, 20, 24, 25, 26	9
	Negative	19, 21, 22, 23	
Factors Regarding Food Habits	Positive	27, 29, 30, 31, 33, 34, 35, 36	10
	Negative	28, 32	
Factors Regarding Functions of Nutrients	Positive	37, 39, 41, 42, 43, 44, 45	9
	Negative	38, 40	
Factors Regarding Nutritional Techniques	Positive	47, 48, 49, 50, 51, 52, 53, 54	9
	Negative	46	
Total			54

Table 3: Nutrition Knowledge Inventory Dimension wise according to the Selected items

Dimension	Nature of the Items		Total
Factors Regarding Source of Nutrition	Positive	1, 2, 3, 10, 12, 13,14,15, 17	10
	Negative	6	
Factors Regarding Deficiency of Nutrients	Positive	18,24, 26	5
	Negative	22, 23	
Factors Regarding Food Habits	Positive	28, 29, 30, 33, 35	6
	Negative	32	
Factors Regarding Functions of Nutrients	Positive	39, 42, 45	4
	Negative	38,	
Factors Regarding Nutritional Techniques	Positive	47, 48, 49, 50	4
	Negative		
Total			29

Items Selection

To select the items to from the final draft of the Nutrition Knowledge Inventory, the difficulty index of the each item was analyzed. According to Edwards (1957), "the value of 't' is a measure of the extent to which a given item differentiates between the high and low groups. If the 't' value is equal to or greater than 1.96, it indicates that the average response of the high and low groups to a statement differs significantly, provided here are 14 or more subjects in the high group and also in the low group".

The 't' value for all the 54 items of the NKI were obtained to select the items for the final draft. Out of 54 items, 29 items were found to be selected as having 't' value more than 1.96. They are given in table – 3.

Table 4: Items selected for the draft of the NKI based on their 't' value between upper and lower group

Item No.	't' Value	Remarks	Item No. in the final draft of Nutrition knowledge
1	**2.482**	**Selected**	**1**
2	**6.904**	**Selected**	**2**
3	**2.280**	**Selected**	**3**
4	1.385	Not Selected	-
5	1.000	Not Selected	-
6	**2.687**	**Selected**	**4**
7	0.694	Not Selected	-
8	0.806	Not Selected	-
9	1.749	Not Selected	-
10	**2.687**	**Selected**	**5**
11	1.794	Not Selected	-
12	**2.687**	**Selected**	**6**
13	**3.606**	**Selected**	**7**
14	**2.280**	**Selected**	**8**
15	**3.122**	**Selected**	**9**

16	1.000	Not Selected	-
17	**2.110**	**Selected**	**10**
18	**2.280**	**Selected**	**11**
19	0.322	Not Selected	-
20	1.000	Not Selected	-
21	0.366	Not Selected	-
22	**4.163**	**Selected**	**12**
23	**2.121**	**Selected**	**13**
24	**2.280**	**Selected**	**14**
25	0.000	Not Selected	-
26	**2.687**	**Selected**	**15**
27	1.472	Not Selected	-
28	**2.876**	**Selected**	**16**
29	**3.122**	**Selected**	**17**
30	**2.482**	**Selected**	**18**
31	1.000	Not Selected	-
32	**2.121**	**Selected**	**19**
33	**2.110**	**Selected**	**20**
34	1.000	Not Selected	-
35	**3.122**	**Selected**	**21**
36	0.434	Not Selected	-
37	0.000	Not Selected	-
38	**2.463**	**Selected**	**22**
39	**2.687**	**Selected**	**23**
40	0.694	Not Selected	-
41	0.806	Not Selected	-
42	**3.606**	**Selected**	**24**
43	1.000	Not Selected	-
44	0.563	Not Selected	-
45	**2.110**	**Selected**	**25**
46	0.694	Not Selected	-
47	**3.122**	**Selected**	**26**
48	**2.121**	**Selected**	**27**
49	**2.280**	**Selected**	**28**
50	**4.163**	**Selected**	**29**
51	0.694	Not Selected	-
52	1.385	Not Selected	-
53	0.366	Not Selected	-
54	0.563	Not Selected	-

Here, the investigator has mentioned 29 selected statements in below table - 5

Table 5:

S.No	STATEMENTS	YES	No.
Factors Regarding Source of Nutrients			
1	Carbohydrates are major source of energy for muscle work.		
2	Sugars, sweets and unenriched refined cereals provide calories only.		
3	Sugar occurs naturally in grapes and other fruits.		
4	Butter has less fat.		
5	Vitamin-D is naturally available from sun light.		
6	Oils, Nuts and Whole grams are the richest sources of the Vitamin-E.		
7	Dates are rich in iron.		
8	Amaranth, Jaggery, Liver, Rice flakes are rich in iron.		
9	Green leafy vegetables are low in calories.		
10	Vitamin-C is available in orange.		
Factors Regarding Deficiency of Nutrients			
11	Night blindness is due to Vitamin-A deficiency.		
12	Osteoporosis is not a calcium related health problem.		
13	Scurvy is not related to Vitamin-C.		
14	Mouth ulcers and cracked lips are the symptoms of vitamin B2 deficiency.		
15	Low iodine level in our diet leads to learning difficulties during childhood.		
Factors Regarding Food Habits			
16	Carbonated drinks are good for human health.		
17	Lack of increased protein intake during illness will result in delayed wound healing.		
18	To reduce Cholesterol level, it is more important to eat less saturated fat.		
19	Iodised salt is not good for health.		
20	We have to take minimum three litres of water per day.		
21	It is harm eating junk foods		
Factors Regarding Functions of Nutrients			
22	Body growth can take place without protein.		
23	High calorie intake leads to obesity.		
24	Iron absorption is enhanced by Vitamin-C.		
25	Iodine is necessary for the normal growth and development of human brain.		
Factors Regarding Nutrition Education			
26	Pressure cooking saves nutrients.		

27	In stewing method, loss of nutrients is avoided as water used for cooking is not discarded.		
28	Steamed foods like idli and idiappam contain less fat and are easily digested.		
29	Parboiling of rice reduces the loss of vitamin B.		

Reliability

In order to establish the reliability of nutrition knowledge inventory, the spilt – Half method was used. The reliability of nutrition knowledge inventory was found to be 0.95. Hence, nutrition knowledge inventory was considered as reliable.

Validity

The index of validity which is the square root of the reliability was found to be 0.97. Hence, nutrition knowledge inventory selected for the study was considered to be highly valid.

4. Conclusion

The investigator is hopeful that this inventory would be helpful to measure the level of Nutrition Knowledge in the high school students. Hence, this tool will be very useful for the investigator to measure to what extent the level of Nutrition Knowledge is in the High School Students and it may be utilized and extended in the same for the future researchers.

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