Assess the Effectiveness of Self-Instructional Module on Knowledge regarding Effects of Junk Food on Mental Health among the Undergraduate Students at Selected Colleges

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Abstract: *The purpose of the present study was to assess the effectiveness of self-instructional module on knowledge regarding effects of junk food on mental health among the undergraduate students at selected colleges. A pre- experimental one group pre-test post-test research design was used. 100 samples (100-experimental group) of simple random sampling technique was used. The pre-test knowledge score was 11.19 (1.44) and post-test knowledge score was 23.15 (1.75). The statistics value of the paired t test was 63.99. The p value less than 0.0 shows significant difference in the knowledge scores. Result shows that self-instructional module was effective to provide knowledge regarding effects of junk food on mental health among the undergraduate students at selected colleges.*

Keywords: Junk food, Mental health and Undergraduate students

1. Introduction

A In today's world scenario, junk food has become a prominent feature of diet for adolescents' students. The rapidly changing food consumption pattern and diet transition emerging in the society due to economic growth and new life style choices.[1] Good nutrition is very essential in development of all both physically and mentally. Children must know what they eat, it affects their growth and behaviour. Today many adolescents' like to eat junk food but they are unaware of harmful effects of junk food on their health as well as mental health.[2]

Junk foods have no or very less nutritional value and irrespective of the way they are marketed, they are not healthy to consume. Mental health encompasses the emotional and behavioural areas of health and impact various areas of life including personal relationship and physical health. Psychological development of adolescents' such as independence and acceptance by peers may affect adolescents' food choices and nutrient intake, which places them to adopt unhealthy eating behaviours "like addiction to junk foods". Coming toIndian junk food, locally called "chat", these mostly include the Samosas, Kachoris, Panipuris / golgappas are fried items with various filling within an outer layer made of refined flour. In India even, Chinese food sold in road side stalls are also considered as Junk food, because they contain high amount of Monosodium Glutamate (MSG) which is a flavour enhancer & this Monosodium Glutamate (MSG) is recognized as a health hazard if taken in larger quantities because it causes lots of physical hazards like headache, nausea, weakness, wheezing, enema, change in heart rate, burning sensation & difficulty in breathing. It not only affects to the physical health but also shows an impact on psychological health of an individuals. The finding of a new study out of Oxford University in the U.K. which revealed that processed junk food consumption can lead to aggression, irritability, depressive tendency & even violent tendencies. Consumption of fast foods has become almost a global phenomenon.[3]

World's adolescents' population is 1200 million persons or about 20% of the total population faces a series of serious nutritional challenges. At these stage caloric and protein requirements are maximal but poor eating habits leads to nutritional challenges. The main nutrition problems affecting adolescents' populations worldwide include, under nutrition and obesity.[4]

2. Review of Literature

Review of literature are classified as follow:
- Studies related to changing trends in adolescents eating pattern
- Studies related to factors influencing junk foods.
- Studies related to prevalence of junk food consumption and effects of junk foods on health among adolescents.
- Studies related to the effects of junk food on mental health

Manasi parad et al (2019) scholastic performance, test anxiety dietary intake and their interrelationship in urban and rural adolescents. the objective of the study to study the association of test anxiety, scholastic performance and dietary intake in urban and rural adolescents. tools used multiple choice questionnaire. Spearman rank correlation coefficient was used to assess association between variables. result of the study was the man test anxiety score for urban vs. rural adolescents was similar (58 +- 12urban boys vs. 58+- 12rural boys, p>0.1 and 57+- 11urban girls and 57+-12 rural girls, p>0.1) conclusion of the study was test anxiety scholastic performance and junk food consumption are interrelated.[5]

Andrew p smith et AL (2018) conducted cross sectional study Energy drink, caffeine, junk food, breakfast, depression and academic attainment of secondary school students. Aim of the study to examine association between consumption of Energy drink, caffeine and junk food and academic attainment of secondary school students. sample of the study was school children 3071. the result of the study concluded that consumption of energy drink causes low academic achievement, similarly poor attainment of those who consumed energy drinks reflecting breakfast junk food omission and depression.[6]

Ghadeer Alsaffar et al (2018) conducted cross-sectional study to examine the relationship between fast food consumption and mental health among female adolescents in Saudi Arabia. Data was collected from 417 female students aged 15 to 18 years who were randomly selected from high schools from three main cities in the Eastern Province. The students were invited to participate in the study via a mobile messaging application with a link to the self-administered electronic questionnaire which was distributed by their teachers to assess fast food consumption and mental health. Chi-square test was used to determine the association between categorical variables and ANOVA was used for categorical dependent variables. A total of 76.5% of respondents ate fast food, and 69.5% did so once or twice per week. The percentage of abnormal internalizing and externalizing scores was 7.4 and 5.5, respectively. There was a significant association between internalizing disorder and family history of violence and mental illness (p<0.05). Fast food consumption frequency was significantly associated with internalizing and externalizing disorders. A significant association was also found between duration of consumption and externalizing disorders.[7]

Karl Peltzer et al (2017) conducted cross sectional study Dietary behaviour, psychological well-being and mental distress among adolescents in Korea. The aim of this investigation was to assess associations between dietary behaviours and psychological well-being and distress among school-going adolescents in Korea. 65,528 school-going adolescents (Mean age = 15.1 years, SE = 0.02; age range 12–18 years) are selected for the study. Positive dietary behaviours (regular breakfast, fruit, vegetable, and milk consumption) were negatively associated with perceived stress and depression symptoms. Unhealthy dietary behaviours (consumption of fast food, caffeine, sweetened drinks and soft drinks) were associated with perceived stress and depression symptoms. Conclusions: The study found strong cross-sectional evidence that healthy dietary behaviours were associated with lower mental distress and higher psychological well-being. It remains unclear, if a healthier dietary behaviour is the cause or the sequela of a more positive well-being.[8]

T Burrow et Al (2016) conducted study to assess the effect of dietary intake and behaviour on school aged children's academic achievement. sample selected between aged of 5-18 years. Study conducted to cross sectional in design (n=33) and studied children ages >10 years, with very few reports in younger age group. The dietary outcome most commonly reported to have positive association with academic achievement were: breakfast consumption (n=12)

global diet quality / meal patter (n=7), whereas negative association reported with junk food / fast food (n=9).[9]

Jim E banta (2015) Done a cross sectional study examine association between mental health and intake of junk food among the children's using 11,190 completed survey from representative sample of California parents of children 5-11year of age. analysis done by health interview survey. Mental health was measured by using a shorten version of strength and difficult questionnaire. date belong to children (n=11,190) of age 5-11 years. result estimated that 3.7 million children 180,000(4.9%) had poor mental health. children with poor mental health consumed more soda /sweeter drinks (0.6vs0.45 serving per day, p=0.024). French fries /fried potatoes (0.27vs0.14 serving per day 0.003) and fast food /junk food2.02vs1.38serving per week p=0.009) compare to children with good mental health. Logistic regression found Poor Mental health to be significantly associated with consumption of food like French fries /fried potatoes /junk food. study conclude that children with poor mental health are more likely to consume calories dense diet but nutrient poor food compare to their counterparts.[10]

J Zara et al (2014) conducted cross sectional survey of daily junk food consumption, irregular eating mental and physical health and parenting style of British secondary school children. Study explored the relationship between (daily junk food consumption, irregular eating) and self-reported mental and physical health. Sample selected for the study was 10645 participants between the aged of 12 - 16yearsr result of the study was 2.9% of the sample reported never eating regular and while 17.2% reported daily consumption of junk food. Parenting was associated with healthier eating behaviour and better mental and physical health in comparison to other parenting style.[11]

3. Problem Statement

A study to assess the effectiveness of self-instructional module on knowledge regarding effects of junk food on mental health among the undergraduate students at selected colleges

4. Objectives of the study

1) To assess the pre-test knowledge regarding effects of junk food on mental health among undergraduate students at selected colleges.
2) To assess the effectiveness of self- instructional module on knowledge regarding effects of junk food on mental health among the undergraduate students at selected colleges.
3) To assess the post-test knowledge regarding effects of junk food on mental health among undergraduate students at selected colleges.
4) To find out the association between pre-test knowledge score regarding effects of junk food on mental health among undergraduate students with their selected demographic variables at selected colleges.

5. Hypothesis

H_0- There is no significant difference between pre-test and post-test knowledge score regarding the effects of junk food on mental health among undergraduate students.

H_1- There is a significant difference between pre-test and post-test knowledge score regarding the effects of junk food on mental health among undergraduate students.

H_2- There is significant association between the pre-test knowledge score regarding effects of junk food on mental health with their selected demographic variables among undergraduate students.

6. Methodology

Research approach- a quantitative evaluative research approach is used in the study.

Research design: pre-experimental one group pre-test and post-test research design

Variables under study:
(1) Independent variable: self-instructional module on effects of junk food on mental health. (2) Dependent variable: knowledge of undergraduates regarding effects of junk food

Setting: The study was conducted in selected colleges of Jalgaon district.

Population: In this study, the population includes undergraduates. **Target population** consists of undergraduates in selected colleges. **Accessible population** undergraduates present at the time of data collection.

Sample and sampling technique:

Sample: In the present study sample is undergraduates from selected colleges.

Sample size: The sample size for the present study is 100 undergraduates who fulfil the set inclusion criteria.

Sampling technique: A probability simple random sampling technique.

Inclusion criteria-
Undergraduates included in the study those who are
- Able to read and write English.
- Willing to participate in the study
- Other than health care professionals
- Present at the time of data collection.

Exclusion criteria-
Undergraduates excluded from the study those who are -
- Having health issue at the time of data collection

7. Result

For the data analysis and interpretation, various methods have been used by researcher that are descriptive and inferential statistics ware widely used. In that frequency and mean percentage were calculated, 30 questions are analysed based on the response of participant regarding effects of junk food on mental health A structured questionnaire is used for data collection. The analysis was done with the help of descriptive & inferential statistics.

SN	Data analysis	Method	Remark
1.	Descriptive statistics	Frequency & percentage	To describe the distribution of demographic variables
		Mean, median, standard deviation	To determine the knowledge of undergraduate student of selected colleges regarding effects of junk food on mental health.
2.	Inferential statistics	Paired "t" test	Assess the effectiveness of self-instructional module
		Chi- square test	Association between level of pre- test knowledge score with demographic variables

The analysis of data is organized and presented under the following heading

Section I
Deals with analysis of demographic data of the undergraduate students at selected colleges in terms of frequency and percentage.

Table 1 (A): Frequency & percentage distribution of undergraduate students at selected colleges in terms of frequency and percentage

Sr. No.	Variable	Groups	Frequency	Percentage
1	Age	16-17	0	0.00
		18—19	0	0.00
		20 & above	100	100.00
2	Gender	Male	53	53.00
		Female	47	47.00
		Transgender	0	0.00
3	Education of Father	Illiterate	12	12.00
		Primary school	18	18.00
		Secondary school	38	38.00
		Graduate and above	32	32.00
4	Education of the mother	Illiterate	9	9.00
		Primary school	57	57.00
		Secondary school	34	34.00
		Graduate and above	0	0.00
5	Occupation of the father	Government service	37	37.00
		Private service	51	51.00
		Business	10	10.00

| | | Labor/ daily wages | 0 | 0.00 |
| | | Unemployed | 2 | 2.00 |

Table 1 (B): Frequency & percentage distribution of undergraduate students at selected colleges in terms of frequency and percentage

Sr. No.	Variable	Groups	Frequency	Percentage
6	Occupation of the mother	Government service	14	14.00
		Private service	13	13.00
		Business	19	19.00
		Homemaker	54	54.00
7	Family income per month	Below 10,000	2	2.00
		10,001- 20,000	40	40.00
		20,001- 40,000	21	21.00
		Above 40,000	37	37.00
8	Type of family	Nuclear family	69	69.00
		Joint family	31	31.00
		Extended family	0	0.00
		Single parent family	0	0.00
9	Area of residence	Urban	69	69.00
		Rural	31	31.00
10	Monthly pocket money given by parents	0 – 1000	0	0.00
		1001 – 2000	0	0.00
		2001 – 3000	43	43.00
		3001 and above	57	57.00

Section II

Deals with analysis of data related to assessment of the knowledge regarding effects of junk food on mental health among the undergraduate students at selected colleges in terms of frequency and percentage.

Table 2: General assessments of Knowledge – Pre-Test

Pre-Test	Groups		Frequency	Percentage
	Poor	0-10	38	38.00
	Average	11-20.	62	62.00
	Good	21-30	0	0.00
Knowledge	Minimum		8	
	Maximum		14	
	Average (SD)		11.19 (1.44)	

Table 3: General assessments of Knowledge – Post Test

Post Test	Groups		Frequency	Percentage
	Poor	0-10	0	0.00
	Average	11-20.	12	12.00
	Good	21-30	88	88.00
Knowledge	Minimum		19	
	Maximum		27	
	Average (SD)		23.15 (1.75)	

Table 4: General assessments of Knowledge - Pre Vs Post Test

	Groups		Pre-Test		Post-Test	
			Frequency	Percentage	Frequency	Percentage
Knowledge	Poor	0-10	38	38.00	0	0.00
	Average	11-20.	62	62.00	12	12.00
	Good	21-30	0	0.00	88	88.00
Knowledge	Minimum		8		19	
	Maximum		14		27	
	Average (SD)		11.19 (1.44)		23.15 (1.75)	

Section III

Deals with analysis of data related to the effectiveness of self-instructional module on knowledge regarding effects of junk food on mental health among the undergraduate students at selected colleges in terms of average pre and post-test.

Table 5: Comparison of the pre and post-test Knowledge among the undergraduate students at selected colleges

Test	N	Mean	S.D.	t value	P value
Pre-Test	100	11.19	1.44	63.99	0.000
Post-Test	100	23.15	1.75		

Section IV

Deals with analysis of data related to the association of knowledge regarding the effects of junk food on mental health with selected demographic characteristics of undergraduate students at selected colleges.

Table 6 (A): Association of knowledge score in relation to demographic variables

Variable	Groups	Pre-Test Knowledge		Chi-Square	d.f.	p value	Significance
		Poor	Average				
Age	16-17	0	0	* Cannot compute Chi-Square			
	18—19	0	0				
	20 & above	38	62				
Gender	Male	14	39	6.42	1	0.011	**Significant**
	Female	24	23				
	Transgender	0	0				
Education of Father	Illiterate	3	9	0.99	3	0.80	Not Significant
	Primary school	7	11				
	Secondary school	15	23				
	Graduate and above	13	19				
Education of the mother	Illiterate	2	7	1.08	2	0.58	Not Significant
	Primary school	23	34				
	Secondary school	13	21				
	Graduate and above	0	0				
Occupation of the father	Government service	16	21	0.98	3	0.81	Not Significant
	Private service	18	33				
	Business	3	7				
	Labor/ daily wages	0	0				
	Unemployed	1	1				

Table 6 B: Association of Knowledge Score in Relation to Demographic Variables

Variable	Groups	Pre Test – Knowledge		Chi-Square	d.f.	p value	Significance
		Poor	Average				
Occupation of the mother	Government service	6	8	0.45	3	0.92	Not Significant
	Private service	4	9				
	Business	7	12				
	Homemaker	21	33				
Family income per month	Below 10,000	2	0	6.33	3	0.10	Not Significant
	10,001- 20,000	14	26				
	20,001- 40,000	11	10				
	Above 40,000	11	26				
Type of family	Nuclear family	25	44	0.29	1	0.58	Not Significant
	Joint family	13	18				
	Extended family	0	0				
	Single parent family	0	0				
Area of residence	Urban	23	46	2.05	1	0.15	Not Significant
	Rural	15	16				
Monthly pocket money given by parents	0 – 1000	0	0	0.31	1	0.57	Not Significant
	1001 – 2000	0	0				
	2001 – 3000	15	28				
	3001 and above	23	34				

8. Discussion

The findings of the study have been discussed with reference to the objectives of the study & with findings of the other studies.

With regard to the demographic's variable in the study all 100% of undergraduate students at selected colleges from 20 and above years of age and no one of students from the age group 16-17 years and 18-19 years. 53% of them were males, 47% were females and no one from the transgender group. 38% were educated up to Secondary school, 32% of the fathers of the undergraduate students were from the group graduates and above, 18% were educated up to primary school, and 12% of the fathers were illiterate, 57% were educated up to primary school, 34% were educated up to Secondary school, above and 9% of the mother were illiterate and no one of the mother of the undergraduate students were from the group graduates, 51% were in private service, 37% of the fathers were in government service, 10%

had own business and 2% of them were unemployed, 54% of them were Homemaker,19% had own business,14% of the mothers were in government service and13% were in private service. 40% of students from group 10001-20000 Rs, 37% of the students had family income above Rs 40000 per month, 21% from the group 20001-40000 and 2% of them from group below 10000, 69% of them from nuclear families, 31% from the joint families and no onefrom the extended and single parent family group. 69% of them from urban area and 31% from the rural area, 57% of them answered Rs 3001 and above per month and 43% of the undergraduate students answered Rs 2001-3000.

Finding regard to description of effectiveness ofself-instructional module on knowledge regarding effects of junk food on mental health among the undergraduate students at selected colleges had average knowledge score at the time of pre-test was 11.19 with standard deviation of 1.44. The minimum score of knowledge was 8 with maximum score of 14 and average knowledge score at the time of post-test was

23.15 with standard deviation of 1.75. The minimum score of knowledge was 19 with maximum score of 27. The test statistics value of the paired t test was 63.99 with p value 0.00. The p value less than 0.05, hence H_1 is accepted. Shows that, self-instructional module on knowledge regarding effects of junk food on mental health among the undergraduate students was effective. The chi-square test was conducted to see the association of knowledge regarding the effects of junk food on mental health with selected demographic characteristics of undergraduate students at selected colleges. For the demographic variable gender, the p value of the association test with knowledge was less than 0.05, hence H_2 is accepted.

9. Conclusion

The findings of present study show that the comparison of pre-test and post-test knowledge score in result showed that there was a significant gain in knowledge scores of the effect of junk food on mental health after giving self-instructional module at 0.05 level (t-63.99, p<0.05) in experimental group. This result shows that the self-instructional module was effective.

The study findings concluded that the undergraduate students were had poor knowledge regarding effects of junk food on mental health. The self-instructional module had great potential for accelerating the awareness regarding knowledge of junk food on mental health.

10. Future Scope

Nursing Practice
Nurses are key personnel of a health team, who play a major role in the health promotion and maintenance, nursing is a practicing profession, so the investigator, generally integrates findings in to practice. Nurses are uniquely qualified to bring information on effect of junk food on mental to public. Nurses especially have a huge responsibility to begin addressing the effects of junk food on mental health because it will have a vast impact on the nursing profession.

Nursing Education
Its emphasis that adequate knowledge owned by the nurses may help to update themselves on the recent advancements, which in turn helps the nurses to give health education for people who are seeking medical care and in the community. The student nurses from schools and colleges of nursing should be encouraged to attend workshops and seminars regarding effects of junk food on health and mental health.

Nursing Administration
Staff development program in any organization is the prime responsibility of the nurse administrator. Support the current scientific evidence from research conducted by health institutes, higher education institutes and documents which showing the importance of knowledge regarding effect of junk food on mental health to exists to reduce the ill effects on mental health and advance the nursing profession through the development and support of prevention programs.

Nursing Research
Nursing research is the means by which nursing profession is growing. There is a need for extended and intensive nursing research in the area of knowledge regarding effect of junk food on mental health for students and society to improve their knowledge for better service. The research design, findings and the tool can be used as avenues for further research. This study will serve as a valuable reference material for future investigators.

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