

# Effect of an Awareness Program on Knowledge about Junk Food Related Neurocysticercosis among College Students in a Selected College, West Bengal

**Bangasri Barman**

*Clinical Nurse, Chittaranjan Seva Sadan and Sishu Sadan Hospital, Kolkata*

## ABSTRACT

**Introduction:** Neurocysticercosis, a severe form of cysticercosis affecting the central nervous system, is a potentially dangerous systemic infection caused by *Cysticercus cellulosae*, the larval stage of *T. solium*.

**Aims:** To effect of an awareness program on knowledge about junk food related neurocysticercosis among college students in a selected college, W.B.

**Setting and Design:** Pre experimental one group pre-test post-test research design was adopted for the study to collect the data from the student in a selected Asutosh college of West Bengal.

**Results:** Result show that the mean and standard deviation post-test students behaviour score  $583.25 \pm 37.98$  (Q1-20) and  $174.69 \pm 3.39$  (Q21-26) was significantly higher than the mean Pre- test students behaviour score  $489.25 \pm 24.97$  (Q1-21)  $111.23 \pm 2.44$  (Q21-26). The obtained mean difference was found to be statistically significant as evident from 't' value of 3.46 (for Q1-20) and 3.09 (for Q21-26) for df 65 at 0.05 level. It means that the obtained mean difference between mean score of both control group students behaviour during the study was a true difference and not by chance.

**Conclusion:** From this study it is revealed that awareness program on knowledge about junk food related neurocysticercosis among college students is necessary to educate them regarding NCC and preventive. From this study it is revealed that awareness program on knowledge about junk food related neurocysticercosis among measures.

**Keyword:** -Junk food, Neurocysticercosis, Awareness programme, knowledge, students

## INTRODUCTION

Neurocysticercosis (NCC) a severe form of cysticercosis affecting the central nervous system, is a potentially dangerous systemic infection caused by *Cysticercus cellulosae*, the larval stage of *T. solium*. Humans acquire this infection by ingestion of *T. solium* eggs from fecal contaminated soil, water or improperly cleaned, raw or undercooked vegetables.<sup>1</sup>

Neurocysticercosis is a well recognized global and common parasitic disease during these days. The common symptoms associated with NC are epilepsy, loss of consciousness, headache, abnormal behavior etc. Patients with these symptoms are often referred to the imaging centre for diagnosis for NC through CT scan/ MRI of the brain, as NC is an abnormality which is better

diagnosed by the introduction of CT scan and MRI than any previous recognized radiological procedures in the brain.<sup>2</sup>

In the developing world, NCC, infection of the central nervous system with the *T. solium* larvae, is the most common cause of acquired epilepsy. Because of globalization, many clinicians in industrialized countries who are unfamiliar with NCC are now faced with managing this disease. Adult tapeworms shed proglottids, and each proglottid contains approximately 1000 to 2000 eggs. Once the hexacanth embryo reaches the parenchyma it forms cysticerci which undergo four stages of involutions.<sup>3</sup>

Prevalence rates in the United States have shown immigrants from Mexico, Central and South America, and

Southeast Asia account for most of the domestic cases of cysticercosis.<sup>4</sup>The disease is world-wide in distribution, though major endemic regions are the world's poorer countries where families raise free-roaming pigs that are able to ingest human faeces. The world-wide prevalence of NCC still remains to be known, though, initiatives are underway to determine the burden in endemic countries as well as in developed nations like USA. The estimated numbers of people suffering from epilepsy due to NCC are as high as 0.31-4.6 million in sub-Saharan Africa, 0.45-1.35 million in Latin America, 1 million in India and 0.3-0.7 million in China.<sup>5</sup>

*T. solium* cysticercosis was added by WHO to the list of major Neglected Tropical Diseases with NTD roadmap goals of making available a validated strategy for control and elimination of *T. solium* taeniasis/ cysticercosis and those interventions to be scaled up in selected countries by 2020.<sup>6</sup>

In India, it is prevalent in all states, with WHO estimating NCC to be the cause of epilepsy in up to 50% of Indian patients who present with partial seizures. In a community survey in Vellore in southern India, among those suffering from active epilepsy, NCC was found in 28% by CT scan and 13% by the enzyme-linked immunoelectron transfer blot. Overall, 34% of patients were diagnosed with NCC. Moreover, there was no significant difference in prevalence of NCC in urban and rural areas. In Puducherry in south India, seroprevalence was observed to be 16% in patients with epileptic seizures and 6% in blood donors when tested for both antibodies and antigens. In Chandigarh in northern India, overall seroprevalence in the general population was found to be 17%, with 24% in slum areas, 20% in rural and 8% in organized urban sectors, with only 8% of the seropositive individuals having history suggestive of NCC.<sup>5</sup>

WHO programmes for the control of neglected tropical diseases and of mental health are also steering the development of evidence based standard guidelines for diagnosis and treatment of *T. solium* neurocysticercosis to support clinical management and inform national policies and programmes.<sup>6</sup>

### OBJECTIVES

Most of college student are having out side food. They love to have first food then home made food. Some

are escape breakfast because of having fast food, some habituated to have only fast food.

### OBJECTIVES :

1. To identify the knowledge about junk food related neurocysticercosis before and after exposure to awareness programme among college students.
2. To identify the effect of an awareness programme in term of changes of knowledge.
3. To determine the association between knowledge about junk food related neurocysticercosis with selected socio demographic variables.

### OPERATIONAL DEFINITION:

**Neurocysticercosis:**-It is form of cysticercosis and is the most worm infection of the central nervous system.

**Junk food :**junk food is food lacking in nutritional value and frequently high calories, sugar or fat. Junk food consumption alters brain activity in a manner similar to addictive. Junk food included soft drinks, roll, noodles, burgers, pizzas, French fries , fried fast food.

**Junk food related neurocysticercosis:** junk food is food lacking in nutritional value and frequently high calories,sugar or fat. Junk food consumption alters brain activity in a manner similar to addictive drugs like cocaine and heroin. Due to junk food form of cysticercosis and is the most worm infection of the central nervous system.

**Awareness programme:**A planned programme designed to increase awareness of junk food related neurocysticercosis and it will be delivered with the help of PPT.

**Knowledge:** It refers to the written response on knowledge regarding junk food related neurocysticercosis and will be measured Questionnaire on knowledge of junk food related neurocysticercosis.

**College students:** It include the students of both sex study in 1<sup>st</sup> year.

### HYPOTHESIS :

**H1-The mean post test knowledge score of adolescents about junk food related neurocysticercosis is significantly higher than the mean pre test knowledge score of college students at 0.05 level of**

significant.

**H2-There is association between pretest knowledge about junk food related neurocysticercosis and selected socio- demographic variables of college students.**

**REVIEW OF LITERATURE**

1.To assess the knowledge of college student about junk food related problem

2. To assess the knowledge of college student about neurocysticercosis:

**RESEARCH METHODOLOGY**

**Research approach** -A quantitative research approach was adopted for the study .

**Research design:** Pre experimental one group pre-test post-test research design was adopted for the study to collect the data from the student in a selected college W.B.

**Table 1: One group pre and post-test research design**

GROUP	PRE-TEST	TREATMENT	POST TEST
RE	O1 (Dependent variable)	X (Independent variable)	O2 (Dependent variable)
RE	Knowledge of college student	Planned teaching programme about junk food related neurocysticercosis	Knowledge of college student

**SETTING:-**The study was conducted in a Asutosh college, West Bengal

**POPULATION:-**The population included both sex for the study includes students who are studying in a selected college, W.B.

**SAMPLE SIZE:-**Total sample size of the study was 114 students.

**SAMPLE TECHNIQUE:-** Purposive sampling technique was used for selecting sample.

**INCLUTION CRITERIA:-**

Only college students

1<sup>st</sup> year students(both sex).

Willing to participate in the study.

Available during the study period.

**EXCLUSIVE CRITERIA:-**

who are not willing to participate in the study.

who are not available during the study period.

Students who are taken food from home

**CONTENT VALIDITY OF KNOWLEDGE QUESTIONNAIRE**

The knowledge questionnaire with the blueprint, list of questions and answer key, criteria checklist was given to five experts for establishment of content validity. Among five experts one is General medicine, two are paediatricians & two are nursing experts. Suggestions were given to change the options of the knowledge questionnaire.

**RELIABILITY:**

Inter Rater

**METHODS OF DATA COLLECTION**

**Table 2 Data Collection tools &technique**

SL NO	Data collection tool	Variable to be measure	Techniques
1	Questionnaire on junk food related neurocysticercosis	Part-A .Socio-demographic .Practice Profile Part-B Knowledge	Questioning

## RESULT

### SECTION-1

This section described the characteristics of students in terms of their age, sex, religion, place of residence, education, occupation, income, diet history. Frequency and percentage distribution of sample subjects are given in fig.

#### 1. Age in a year

The mean age (mean ± s.d.) of the respondents was 18.92±1.29 years with range 18 – 20 years and the median age was 18.7 years.

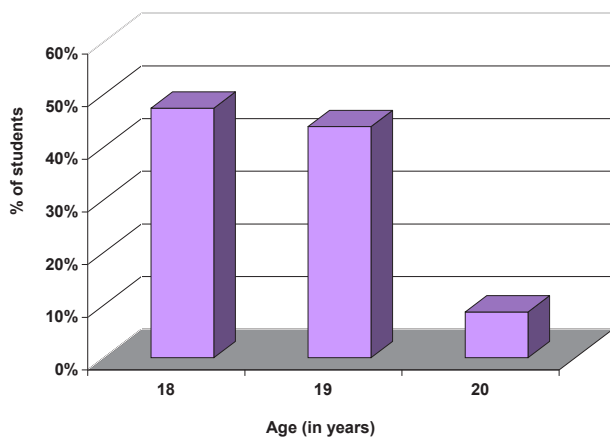


FIG 1: Most of the respondents (91.2%) were in the age group between 18 – 19 years which was significantly higher than other age group (Z=11.59;p<0.001).

#### 2. Distribution of the respondents according to their place of residence

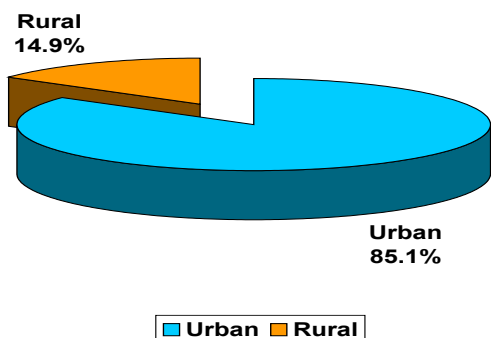


FIG 2: Proportion of respondent from urban area (85.1%) were significantly higher than rural area (14.9%) (Z=9.89;p<0.001).

#### 3. Distribution of dietary habit of the respondents

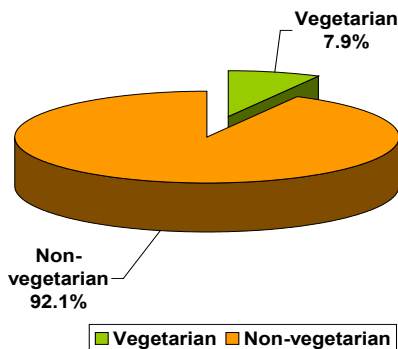


Fig 3: 92.11% of the respondents were non-vegetarian which was significantly higher than that of vegetarian (7.89%) (Z=11.87;p<0.0001).

### SECTION III

Table 3: Comparison of pre-test and post-test marks obtained by the participants

Question	Pre-test	Post-test	t-test	p-value
Q1-20 (mean±s.d.)	489.25±24.97	583.25±37.98	3.46	<0.01*
Q21-26 (mean±s.d.)	111.23±2.44	174.69±3.39	3.09	<0.01*

\*Statistically Significant

t-test showed that the mean marks of the participants improved significantly at post-test as compared to pre-test for all answers (p<0.01).

### CONCLUSION

The present study is aimed to effect of an awareness program on knowledge about junk food related neurocysticercosis among college students in a selected college of West Bengal. Neurocysticercosis is form of cysticercosis and is the most worm infection of the central nervous system. 114 students were selected for this study by using simple random sampling technique . Questionnaire tool used on junk food related neurocysticercosis for the study was Comparison of pre-test and post-test marks obtained by the participants.

This chapter deals with the following conclusions drawn from the study.

Comparison of pre-test and post-test marks obtained by the participants

Data given in result show that the mean and standard deviation post-test students behaviour score  $583.25 \pm 37.98$  (Q1-20) and  $174.69 \pm 3.39$  (Q21-26) was significantly higher than the mean Pre- test students behaviour score  $489.25 \pm 24.97$  (Q1-21)  $111.23 \pm 2.44$  (Q21-26). The obtained mean difference was found to be statistically significant as evident from 't' value of 3.46 (for Q1-20) and 3.09 (for Q21-26) for df 65 at 0.05 level. It means that the obtained mean difference between mean score of both control group students behaviour during the study was a true difference and not by chance.

#### **Relation to the other study**

Hospital-based case-control study was conducted at a tertiary referral hospital in northwest India. Total sample size of the study was of 214. Patients with NCC were more close to water source ( $P = 0.01$ ), eat nonvegetarian food ( $P < 0.001$ ), and often eat in restaurants ( $P < 0.001$ ). Pigs were seen more in and around the NCC patients' houses than the control subjects residential areas ( $P = 0.001$ ). Total 15% of the NCC close to slaughter houses, while only 2.7% of the control group stayed near a slaughter house ( $P = 0.002$ ). Unhygienic practices, nonvegetarian food, and eating in restaurants were the risk factors for NCC in this study. There is an opportunity for prevention of NCC using public education.

#### **NURSING IMPLICATIONS**

The result of the study shows that the effect of an awareness program on knowledge about junk food related neurocysticercosis among college students is altered. So, the study has several implications for nursing education, nursing practice, nursing administration and nursing research.

#### **NURSING PRACTICE**

Nurses are the key persons of the health team, who play a major role in health promotion and maintenance. Nursing care is an art and science in providing a quality care.

#### **NURSING ADMINISTRATION:**

Nurse administrators can plan and conduct a short term educational programme for students as well as nurses to improve their knowledge on NCC aspects.

#### **NURSING EDUCATION:**

Maximum college students are eat out. It is the urgent need to educate the blooming upcoming nurse in regards to prevention of junk food related NCC.

#### **NURSING RESEARCH:**

Professions growth is determined only through the research activities. Nursing is an evolving and independent profession. From this study it is revealed that awareness program on knowledge about junk food related neurocysticercosis among college students is necessary to educate them regarding NCC and preventive measures.

#### **Conflict of Interest- Nil**

**Statement of informed consent :-** Patients have a right to privacy that should not be infringed without informed consent. Given the information is essential for scientific purposes and the students gives written informed consent for publication.

**Ethical Clearance-** Taken from Members of Hospital Ethical Committee

#### **PROTECTION OF HUMAN RIGHTS:**

-Ethical Clearance is obtained from the institutional ethical committee.

-Permission will be obtained from principal of a selected college, West Bengal.

-Consent will be obtained from the college student who are willing to participate in the study.

#### **Source of Funding- Self**

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