# "EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING FIRST AID MANAGEMENT OF HEAD INJURY AMONG THE STUDENTS IN SELECTED COLLEGES OF KAMRUP,ASSAM:AN EVALUATIVE STUDY"

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**ABSTRACT**

**BACKGROUND:**

Traumatic brain injury (TBI) happens when a sudden, external, physical assault damages the brain. It is one of the most common causes of disability and death in adults. TBI is a broad term that describes a vast array of injuries that happen to the brain. The damage can be focal (confined to one area of the brain) or diffuse (happens in more than one area of the brain). The severity of a brain injury can range from a mild concussion to a severe injury that results in coma or even death. An emergency can happen at any time or any place. An emergency is a situation demanding immediate action. The first critical step in any emergency depends on presence of someone who will take appropriate action. The goal of the first aid course is to train the person on basics of first aid that will help them to recognize and respond to any emergency appropriately. This response may help to save a life. Every human being has a right to learn first aid. It is the sacred duty of each first aider to spread this message till every citizen of the country learns the methods of first aid. Young

people are fitter to execute the first aid. First aid training is of value in both preventing and treating sudden illness or accidental injury and in caring for a large number of people caught in a natural disaster.

## OBJECTIVES OF THE STUDY:

1. To assess the pre test and post test knowledge score regarding first aid management of head injury among the students in selected colleges of Kamrup,Assam before and after administration of structured teaching programme.

2. To evaluate the effectiveness of structured teaching programmed on knowledge regarding first aid management of head injury among the students in selected colleges of Kamrup,Assam

3. To find out the association between pre test knowledge score with selected demographic variables in selected colleges of Kamrup,Assam

## METHODS AND MATERIALS:

Pre experimental design(one group pretest-posttest design) was used in this study to accomplish the objectives. Probability multistage sampling technique was used for obtaining the adequate sample for the study. Study was undertaken on 90 college students in selected colleges of Kamrup,Assam. Students were selected based on their inclusive criteria. Pre test knowledge regarding first aid management of head injury was checked using structured knowledge questionnaire and on the same day structured teaching programme regarding first aid management of head injury was administered. The post test was conducted on the 7th day in the same manner. Self report was the technique used for it.

## RESULTS:

Study shows that majority of the students i.e. 32(35.6%) belongs to 19 years of age, 29(32.2%) belongs to 20 years of age, 22(24.4%) belongs to 21years of age,6(6.7%) belongs to 22years of age and only 1(1.1%) of the students belongs to 18 years of age; majority of the students i.e. 54(60%) were male , 36(40%) were female and 0(0%) were transgender. Majority i.e. 35(38.9%) of the students from commerce stream, 31(34.4%) students from arts stream and 24(26.7%) students from science stream background. majority of the students i.e. 65(72.2%) belongs to nuclear family and only 25(27.8%) students belongs to joint family;90(100%) of students were not attended any first aid training on head injury before; majority of the students i.e. 76(84.4%) students were never encountered an head injury and 14(15.6%)students were encountered an head injury before. In the pretest, majority i.e. 74(71.11%) had moderate knowledge ,23 (25.56%) had inadequate knowledge and 3(3.33%) had adequate knowledge. In the post test majority i.e.50 (55.56%) had adequate knowledge and 37(41.11%) had moderate and 3(3.33%) had inadequate knowledge. The Study shows that the pretest mean score of knowledge was 9.66±3.34 and the post test mean score of knowledge was 15.61±3.61. The mean difference score was 5.95. The calculated paired "t" test value of value of t=10.542 was statistically significant at p<0.001 level. This clearly infers that after the administration of STP regarding first aid management of head injury among students was found to be effective in improving the level of knowledge in the post test. The association was statistically tested by fisher exact test and analysis depicted that there is

demographic variable age **(p=0.002)** had statistically significant association with pretest level of knowledge regarding first aid management of head injury among the college students at p<0.01 level. The other demographic variables did not show statistically significant association with pretest level of knowledge regarding first aid management of head injury among the college students. The study concluded that the structured teaching programme was effective in bringing the desired changes in the knowledge of college students on knowledge regarding first aid management of head injury. Hence it can be used as an effective teaching strategy among the college students to spread the health messages.

**CONCLUSION:**

Based on the analysis of the findings of the study, the following inferences were drawn. There was evident increase in the knowledge in all areas including in the study after administration of structured teaching programme on knowledge regarding first aid management of head injury among the students in selected colleges. Thus it was proved that structured teaching programme was an effective teaching method for improving knowledge regarding first aid management of head injury.

**KEY WORDS: Knowledge, First Aid Management, Structured Teaching Programme, Effectiveness**

### 1. INTRODUCTION:

Traumatic brain injury (TBI) happens when a sudden, external, physical assault damages the brain. It is one of the most common causes of disability and death in adults. TBI is a broad term that describes a vast array of injuries that happen to the brain. The damage can be focal (confined to one area of the brain) or diffuse (happens in more than one area of the brain). The severity of a brain injury can range from a mild concussion to a severe injury that results in coma or even death.

Primary brain injury refers to the sudden and profound injury to the brain that is considered to be more or less complete at the time of impact. This happens at the time of the car accident, gunshot wound, or fall.

Secondary brain injury refers to the changes that evolve over a period of hours to days after the primary brain injury. It includes an entire series of steps or stages of cellular, chemical, tissue, or blood vessel changes in the brain that contribute to further destruction of brain tissue .

An emergency can happen at any time or any place. An emergency is a situation demanding immediate action. The first critical step in any emergency depends on presence of someone who will take appropriate action. The goal of the first aid course is to train the person on basics of first aid that will help them to recognize and respond to any emergency appropriately. This response may help to save a life .

First aid is the immediate care given to a person who has been injured or suddenly become ill. It includes self-help and home care, if medical assistance is not available or is delayed. It also includes well selected words of encouragement, evidence of willingness to help and promotion of confidence by demonstration of competence .

Every human being has a right to learn first aid. It is the sacred duty of each first aider to spread this message till every citizen of the country learns the methods of first aid. Young people are fitter to execute the first aid. First aid training is of value in both preventing and treating sudden illness or accidental injury and in caring for a large number of people caught in a natural disaster.

As we are approaching the 21st century the need for "First aid" is necessary due to the alarming increase in road traffic accidents, fire accidents, suicidal attempts etc. The current statistics shows that globally over 20 million people are injured or crippled and over one million killed due to road traffic crashes each year. Developing countries account for more than 85% of all fatalities and over 90% of disability adjusted life year (DALYs) loss due to road traffic injuries. According to global burden of disease study, deaths from injuries are projected to rise and road traffic accidents are expected to account for most of this increase.

Motor vehicle accidents rank ninth in order of disease burden and are projected to be ranked third in the year 2020. More than 50% of global mortality due to road traffic accidents occur among young adults, aged 15 – 44. These lives could be saved and disability minimized if the general public is aware how to give first aid.

- Traumatic brain injuries are a leading cause of morbidity, mortality, disability and socio economic losses in India and other developing countries.
- Yearly 1,00,000 lives lost with 1million suffering from severe head injury
- According to WHO(2021), Nearly 1.5 to 2 million persons are injured and 1 million death every year in India. After traumatic brain injury, patients in coma for greater than 1 week and aged 45 years or younger have a potential for good recovery and gains in function continue for years after the injury.

## 2. NEED OF THE STUDY:

The world has become an uncertain and a risky place. Accidents and risk have become an inherent part of our life. Occurrence of accidents is not casual, it is only become of hast, ignorance, carelessness, childhood and old age, forgetfulness and unusual courage. We have to think about the accidents and should make us capable for taking immediate action. Making better choice to deal with the situations help to save the life, as life is valuable. Safety has become very important in our daily life.

In developed countries, every year serious trauma experiences about 3% of the total population. Trauma affects significantly more male (60%) of the total number of injured 4% of them being permanently disabled and 1.5% die. It is important to note that death and disability due to trauma affecting mostly young adult segment of the population people aged 16-45 years. Many of us might have heard the accidents and emergency situations in television and movies which have taken place anywhere in the world, when we see in the real life, each individuals reaction and response to the emergency or accident scene is different. Some may be

confident enough to save the life by using the available services or resources. Some may be in panic and behave strangely in the emergency situation.

According to the WHO(May 16,2023)- Traumatic brain injury is a major source of health loss and disability worldwide, globally the annual incidence of TBI is variably estimated at 27 to 69 million

According to WHO(2022), It is estimated that nearly 1.5 to 2 million persons are injured and 1 million succumb to death every year in India. Road traffic injuries are the leading cause (60%) of TBIs followed by falls (20%-25%) and violence (10%). Alcohol involvement is known to be present among 15%-20% of TBIs at the time of injury.

According to G Plus news(jun27,2023), from January to may 2023,Assam witnessed a total of 3191 accidents, marking significant 10.07 % increase compared to the same period 2022,where 2899 accidents were recorded.

### 3. OBJECTIVES :

1. To assess the pre test and post test knowledge score regarding first aid management of head injury among the students in selected colleges of Kamrup,Assam before and after administration of structured teaching programme.
2. To evaluate the effectiveness of structured teaching programmed on knowledge regarding first aid management of head injury among the students in selected colleges of Kamrup,Assam
3. To find out the association between pre test knowledge score with selected demographic variables in selected colleges of Kamrup,Assam

### 4. METHODS AND MATERIALS:

Pre experimental design(one group pretest-posttest design) was used in this study to accomplish the objectives using Probability multistage sampling technique was used for obtaining the adequate sample for the study. Study was undertaken on 90 college students in selected colleges of Kamrup,Assam. Students were selected based on their inclusive criteria. Pre test knowledge regarding first aid management of head injury was checked using structured knowledge questionnaire and on the same day structured teaching programme regarding first aid management of head injury was administered. The post test was conducted on the 7$^{th}$ day in the same manner.

### 5. DESCRIPTION OF THE TOOL:

The tools used for the study consisted of two sections:

**Section I: -Demographic variables**: Age, gender, stream, type of family, attended first aid training of head injury before, ever encountered an head injury

**Section II:-Structured knowledge questionnaire**: This part of the tool consisted of 24 questions (each question had one correct answer out of the four options). The questions were divided into the following headings:

**Scoring key**: Each question had only one correct answer. For every correct response a score of I mark was given and a score of 0 mark for incorrect response. Hence the maximum score was 24 and the minimum score was 0.

To interpret the level of knowledge, the scores were converted to percentage and were categorized as follows:

1.  Inadequate knowledge ≤33%  (≤8 score ).
2.  Moderate knowledge- ≥34%-66% (9– 16score).
3.  Adequate   knowledge ≥ 67% (17 - 24 score).

### 6.   DATA COLLECTION PROCEDURE:

The data collection was scheduled from 28$^{th}$ September to 19$^{th}$ October, 2023. According to the feasibility of the study and availability of the sample, three colleges were selected. A formal written permission was obtained from the respective Principals of the selected colleges for conducting the research study by the investigator before the collection of the data.

The investigator visited the colleges on the given respective dates and was introduced to the students who fulfilled the pre-determined selection criteria. The investigator explained the purpose of her study and she assured them of the confidentiality and anonymity to get their co-operation and prompt responses during data collection.

A written informed consent was also taken from the 90 students who fulfill the selection criteria. 3.3% were taken from each college i.e. 28 students were taken from Beltola College, 23 students were taken from Karmashree Hiteswar Saikia College, 39 students were taken from Pragjyotish College.

Then the pre-test knowledge questionnaire was administered which took 30-45 minutes to complete in average. A structured teaching programme was given on the same day after completion of the pre-test respectively. The students interacted and cooperated well with the investigator and were satisfied with the information they got.

Post-test was administered to the same group of students using the same knowledge questionnaire on the 7th day after giving structured teaching programme respectively.

**7.  RESULT:**

**SECTION-I**

- **Frequency and percentage distribution of college students according to their demographic variables.**

**Table 1:** Frequency and percentage distribution of demographic variables of college students.

**n = 90**

| Demographic Variables | Frequency (f) | Percentage (%) |
|---|---|---|
| **Age in years** | | |
| 18 | 1 | 1.1 |
| 19 | 32 | 35.6 |
| 20 | 29 | 32.2 |
| 21 | 22 | 24.4 |
| 22 | 6 | 6.7 |
| **Gender** | | |
| Male | 54 | 60.0 |
| Female | 36 | 40.0 |
| Transgender | - | - |
| **Stream** | | |
| Arts | 31 | 34.4 |
| Science | 24 | 26.7 |
| Commerce | 35 | 38.9 |
| **Type of family** | | |
| Nuclear | 65 | 72.2 |
| Joint | 25 | 27.8 |
| **Have you ever trained in first aid training on head injury before?** | | |
| Yes | - | - |
| No | 90 | 100.0 |
| **Have you ever encountered an head injury?** | | |
| Yes | 14 | 15.6 |
| No | 76 | 84.4 |

The table 1 portrays that most of the college students, 32(35.6%) were aged 19 years, 54(60%) were male, 35(38.9%) were pursuing graduation in commerce, 65(72.2%) belonged to nuclear family, 90(100%) were never trained before in first aid training on head injury and 76(84.4%) were never encountered an head injury.

## SECTION-II

- **Assessment of knowledge of the student regarding the first aid management of head injury**

**Table 2:** Frequency and percentage distribution of pretest and post test level of knowledge regarding first aid management of head injury among the college students.

**n = 90**

| Level of Knowledge | Pretest | | Post Test | |
|---|---|---|---|---|
| | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Inadequate knowledge (≤33%) | 23 | 25.56 | 3 | 3.33 |
| Moderate knowledge (34 – 66%) | 74 | 71.11 | 37 | 41.11 |
| Adequate knowledge (>=67%) | 3 | 3.33 | 50 | 55.56 |

The table 2 findings show the frequency and percentage distribution of pretest and post test level of knowledge regarding first aid management of head injury among the college students.

It shows that in the pretest, 74(71.11%) had moderate knowledge, 23(25.56%) had inadequate knowledge and 3(3.33%) had adequate knowledge regarding first aid management of head injury.

After the STP, 50(55.56%) had adequate knowledge, 37(41.11%) had moderate knowledge and 3(3.33%) had inadequate knowledge regarding first aid management of head injury.

## SECTION-III

- **Assess the effect of structured teaching programmed on knowledge regarding first aid management of head injury**

**Table 3:** Effectiveness of STP on knowledge regarding first aid management of head injury among the college students.

$H_1$:-There is significant difference in the mean pre test and post test knowledge score regarding first aid management of head injury following structured teaching programme at p<.0.001 level of significant.

$H_{01}$:− There is no significant difference in the mean pre test and post test knowledge score regarding first aid management ofhead injury following structured teaching programme at p<0.001 level of significant.

**n = 90**

| Variables | TOTAL SCORE | RANGE OF SCORES | Mean | S.D | Mean Difference | Paired "t" test and p-Value |
|-----------|-------------|-----------------|------|-----|-----------------|------------------------------|
| Pretest | 24 | 3-18 | 9.66 | 3.34 | 5.95 | t = 10.542 p=0.0001, S*** |
| Post Test | 24 | 5-21 | 15.61 | 3.61 | | |

***p<0.001, S – Significant

The table 3 shows that the pretest mean score of knowledge was 9.66±3.34 and the post test mean score of knowledge was 15.61±3.61. The mean difference score was 5.95. Range of score from 3-18 during the pre test and range of score from 5-21 during the post test and total score for pre test and post test was 24. The calculated paired "t" test value of value of t=10.542 was statistically significant at p<0.001 level. So, $H_1$ was accepted and $H_0$ was rejected. This clearly infers that after the administration of STP regarding first aid management of head injury among students was found to be effective in improving the level of knowledge in the post test.

## SECTION-IV

- **Association between pretest knowledge with selected demographic variables such as age in years, gender, stream, type of family, have you ever trained in first aid training on head injury before, have you ever encountered an head injury.**

**Table 4:** Association of pretest level of knowledge regarding first aid management of head injury among the college students with their selected demographic variables.

- $H_2$:-There is a significant association between knowledge score with selected demographic variables at p<0.05 level of significant.

- $H_{02}$:-There is no significant association between knowledge score with selected demographic variables at p<0.05 level of significant.

n = 90

| Demographic Variables | Inadequate | | Moderate | | Adequate | | Chi-Square p-value / Fisher Exact test p-value |
|-----------------------|------------|-----|----------|-----|----------|-----|------------------------------------------------|
| | f | % | f | % | f | % | |
| **Age in years** | | | | | | | |
| 18 | 0 | 0 | 1 | 1.1 | 0 | 0 | p=0.002 S** |
| 19 | 5 | 5.6 | 27 | 30.0 | 0 | 0 | |
| 20 | 15 | 16.7 | 14 | 15.6 | 0 | 0 | |
| 21 | 3 | 3.3 | 17 | 18.9 | 2 | 2.2 | |

| Demographic Variables | Inadequate | | Moderate | | Adequate | | Chi-Square p-value / Fisher Exact test p-value |
|---|---|---|---|---|---|---|---|
| | f | % | f | % | f | % | |
| 22 | 0 | 0 | 5 | 5.6 | 1 | 1.1 | |
| **Gender** | | | | | | | |
| Male | 11 | 12.2 | 40 | 44.4 | 3 | 3.3 | p=0.208 |
| Female | 12 | 13.3 | 24 | 26.7 | 0 | 0 | N.S |
| Transgender | - | - | - | - | - | - | |
| **Stream** | | | | | | | |
| Arts | 6 | 6.7 | 25 | 27.8 | 0 | 0 | p=0.504 |
| Science | 6 | 6.7 | 17 | 18.9 | 1 | 1.1 | N.S |
| Commerce | 11 | 12.2 | 22 | 24.4 | 2 | 2.2 | |
| **Type of family** | | | | | | | p=0.071 |
| Nuclear | 14 | 15.6 | 50 | 55.6 | 1 | 1.1 | N.S |
| Joint | 9 | 10.0 | 14 | 15.6 | 2 | 2.2 | |
| **Have you ever trained in first aid training on head injury before?** | | | | | | | - |
| Yes | - | - | - | - | - | - | |
| No | 23 | 25.6 | 64 | 71.1 | 3 | 3.3 | |
| **Have you ever encountered an head injury?** | | | | | | | p=0.852 |
| Yes | 3 | 3.3 | 11 | 12.2 | 0 | 0 | N.S |
| No | 20 | 22.2 | 53 | 58.9 | 3 | 3.3 | |

**p<0.01, S – Significant, p>0.05, N.S – Not Significant

**INTERPRETATION:**

The table 4 shows the association of pre test level of knowledge regarding first aid management of head injury among the college students with their selected demographic variables. The data presented in table represents the following:

**1) Age in years:** The table shows that the obtained p value was 0.002, since p value is less than 0.05 level of significance, so we reject the null hypothesis which shows that there was a significant association between age and pre test level of knowledge.

**2) Gender:** The table shows that the obtained p value was 0.208, since p value is greater than 0.05 level of significance, we accept the null hypothesis which shows that there was no significant association between gender and pre test level of knowledge.

**3)Stream:** The table shows that the obtained p value was 0.504, since p value is greater than 0.05 level of significance, we accept the null hypothesis which shows that there was no significant association between stream and pre test level of knowledge.

**4)Type of family:** The table shows that the obtained p value was 0.071, since p value is greater than 0.05 level of significance, we accept the null hypothesis which shows that there was no significant association between type of family and pre test level of knowledge.

**5) Have you ever attended first aid training on head injury before:** The table shows that there is one range of data i.e no one had attended first aid training on head injury before.

**6)Have you ever encountered an head injury:** The table shows that the obtained p value was 0.852, since p value is greater than 0.05 level of significance, we accept the null hypothesis which shows that there was no significant association between ever encountered an head injury and pre test level of knowledge.

## 8. CONCLUSION:

Based on the analysis of the findings of the study, the following inferences were drawn:

Out of 90 college student's most of the 32(35.6%) were aged 19 years, 54(60%) were male, 35(38.9%) were pursuing graduation in commerce, 65(72.2%) belonged to nuclear family, 90(100%) were never trained before in first aid training on head injury and 76(84.4%) were never encountered an head injury.

In the pretest, majority i.e. 64(71.11%) had moderate knowledge ,23 (25.56%) had inadequate knowledge and 3(3.33%) had adequate knowledge. In the post test majority i.e.50 (55.56%) had adequate knowledge and 37(41.11%) had moderate and 3(3.33%) had inadequate knowledge.

The mean knowledge score in pre-test was 9.66 with standard deviation of 3.34. In post-test the mean knowledge score was 15.61 with standard deviation of 3.61

The effectiveness of structured teaching programme was statistically tested by paired 't' test. The calculated paired 't' test value of t=10.542 and p=0.0001. Since p value is less than 0.001, $H_0$ was rejected and $H_1$ was accepted which infers that there was significant difference between mean pre test knowledge score and post test knowledge score among the college student regarding first aid management of head injury. This showed that the administration of structured teaching programmed on knowledge regarding first aid management of head injury was found to be effective in improving the post-test level of knowledge which was also evident from the increase in the mean score from 9.66 to 15.61

The association was statistically tested by fisher exact test and analysis depicted that there is demographic variable age **(p=0.002)** had statistically significant association with pretest level of knowledge regarding first aid management of head injury among the college students at p<0.05 level.

The other demographic variables did not show statistically significant association with pretest level of knowledge regarding first aid management of head injury among the college students.

The study concluded that the structured teaching programme was effective in bringing the desired changes in the knowledge of college students on knowledge regarding first aid management of head injury. Hence it can be used as an effective teaching strategy among the college students to spread the health messages.

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