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## **A study to assess the knowledge on shaken baby syndrome among health workers and care givers of under 2 year's children in the selected hospital of Uttara Kannada with view to impart health education**

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### **Abstract**

Shaken baby syndrome is a serious brain injury, resulting from forcefully shaking an infant or toddler. It's also known as abusive head trauma, shaken impact syndrome, inflicted head injury or whiplash shaken infant syndrome. A descriptive design was used for this study. 100 samples were selected by purposive sampling method. Data was collected by the structured questionnaire which is designed to assess the knowledge regarding shaken baby syndrome. The data collected was analyzed using descriptive statistics. The findings revealed that the mean knowledge score of health workers was 13.92 and the care givers were 12.28 in Ankola.

**Result:** This study reveals that care givers 14% had good knowledge, 64% had average knowledge and 22% had poor knowledge and in the health care workers 28% had good knowledge, 64% had average knowledge and 8% had poor knowledge on shaken baby syndrome.

**Conclusion:** The overall findings of the study revealed that there was average knowledge regarding shaken baby syndrome among health workers and care givers in Ankola.

**Keywords:** Shaken baby syndrome, knowledge, health care workers, care givers

### **Introduction**

"Babies are very fragile, they need to be handled with care and when a child is shaken violently it can cause one of two things DEATH or a lifetime DISABILITY"<sup>[1]</sup>. Shaken baby syndrome is also known as shaken impact syndrome. It was first discovered by John Cattley in 1974. It is a serious form of abuse inflicted upon a child. Babies have very weak neck muscles that cannot fully support their proportionately large heads. Severe shaking causes the baby's head to move violently back and forth, resulting in serious and sometimes fatal brain injury. These forces are exaggerated if the shaking is interrupted by the baby's head hitting a surface. Shaken baby syndrome destroys a child's brain cells and prevents his/her brain from getting enough oxygen<sup>[2]</sup>. Shaken baby syndrome occurs frequently in infants younger than 6 months old, yet can occur up to the age of 5. If a baby is forcefully shaken, their fragile brain moves back and forth inside the skull. This causes bruising, swelling and bleeding. One in every four babies shaken, dies. The rest have to deal with the injuries and symptoms that will affect the rest of their innocent lives<sup>[3]</sup>. Shaken baby syndrome is recognized as the most dangerous and exclusive form of child abuse. Moreover, it is the leading cause of death or long-term neurological disability in infants younger than 2 years of age. Shaken baby syndrome is caused by shaking and is considered to be completely preventable<sup>[4]</sup>.

### **Materials and Methods**

#### **Research design**

The research design is blueprint for conducting the study that maximizes control over factors that can interfere with the validity of the findings. It is an overall plan investigator used to obtain the valid answer to research questions. Research design used for present study was descriptive research design.

## Subjects

In the present study, 50 samples of health care workers and 50 samples are care givers of under 2 years children in the selected hospitals of Uttar Kannada, were selected through purposive sampling technique.

## Data collection tool

An questionnaire was designed and developed by the researcher after an extensive review of literature, discussion with the experts and based on the investigator's personal experience to collect data about the subjects. The tool consists of the following parts,

### Section I

It consisted of 8 items describing the socio-demographic variables such as age group, gender religion, marital status, educational status, number of children, monthly income.

### Section 2

It included true or false questions to assess levels of health care workers and care givers under 2 year children knowledge regarding shaken baby syndrome. The questionnaire was constructed with a total number of 20 items. Each item has true or false options, for correct answer the score was one and wrong answer the score is zero. The total score was 20.

## Methods

### Administrative approval

Administrative approval for study was obtained from the Medical officer of Dr. Kamal & R.N Nayak. Hospital & MRC, Ankola, and Christa Mitra Ashram Hospital Ankola, Uttar Kannada. The letter explains the purpose of the study to sought her cooperation before starting the data collection. The agreement and the aim of the study were explained to each subject.

### Validity of the tool

The tool was validated by the experts those are. Dr. Jathar [MBBS, diploma in pediatric] of Durga clinics Ankols, Dr. Manjunath [ MBBS] of R. N. Nayak Hospital & MRC, Ankola and Mr. Ganesh Naik [Msc in pediatrics] and Mr. Manjunath naik [Msc in psychiatrics] of KLE Institute of Nursing Science's Ankola. And by the members of the research committee of KLES Institute of Nursing Sciences, Ankola. All the experts were requested to review and verify the tool. Modifications of the items were made on the basis of suggestions and comments experts.

## Ethical consideration

- Ethical approval was obtained from the medical officer Dr. Kamal & R.N Nayak. Hospital & MRC, Ankola, And Christa Mitra Ashram Hospital Ankola, Uttar Kannada to conduct the research.
- Issues of voluntary participation, confidentiality, anonymity, and consent as well as data security were considered and addressed with potential.

## Field work

### Operational phase

The initial data collection was conducted from 15<sup>th</sup> September 2021 to 18<sup>th</sup> September 2021 after getting permission from medical officer and study setting 50 health care workers and 50 samples are care givers of under 2 years children were elicited, after met the inclusion criteria. The investigators get written consent after explaining the importance and purpose of the study. Structured questionnaire was used for initial data collection. Each sample took about 5minutes to fill biosocial and knowledge questionnaire.

## Results & Discussion

The present study was undertaken to assess knowledge on shaken baby syndrome among health workers and care givers of under 2 years children in the selected hospital of Uttara kannada with view to impart health education. The assessment of knowledge of care givers regarding shaken baby syndrome reveals that care givers 14% subjects had good knowledge 64% subjects had average knowledge 22% subjects had poor knowledge these findings were supported through study conducted by Riyadh, Saudi Arabia shows that a total 32.1% of parents had previously heard about SBS [35]. The assessment of knowledge of health workers regarding shaken baby syndrome revealed that 28% had good knowledge, 64% had average knowledge and 8% had poor knowledge. The findings of this study were supported through study conducted by Ursula Marcinkowska shows 43% have ever heard about shaken baby syndrome. 88% of Samples responded that SBS is a form of violence, but 57% realized that one time shaking can leads to death and only 19% indicated men were aggressors. 16% of medical staffs did not know how long it takes for the consequences of shaking a baby to be revealed [33].

### Section I: Distribution of sample characteristics according socio-demographic variables

**Table 1:** Frequency and percentage distribution of health care workers according to socio-demographic variables n=100

Sl. No	Socio-demographic Variable	Frequency(f)	Percentage%
1.	<b>Age Groups</b>		
	20-30 years	30	60%
	30-40 years	09	18%
	40-50 years	08	16%
	50-60 years	03	06%
	61 years n above	00	00%
2.	<b>Gender</b>		
	Male	02	04%
	Female	48	96%
3.	<b>Religion</b>		
	Hindu	39	78%
	Christian	09	18%
	Muslim	02	04%

	Others	00	00%
4.	<b>Marital Status</b>		
	Married	21	78%
	Unmarried	29	58%
	Widow/ Widower	00	00%
	Separated/Divorced	00	00%
5.	<b>Education Status</b>		
	Diploma (GNM & ANM)	30	60%
	Degree (BSC Nursing)	13	26%
	Post graduate (MSC Nursing)	07	14%
6.	<b>Number of Children</b>		
	Nil	31	62%
	One	13	26%
	Two	05	10%
	Three and above	01	02%
7.	<b>Monthly income</b>		
	Below Rs. 10,000	19	38%
	Rs. 10,000-Rs.20,000	21	42%
	Rs.20,000 and above	10	20%

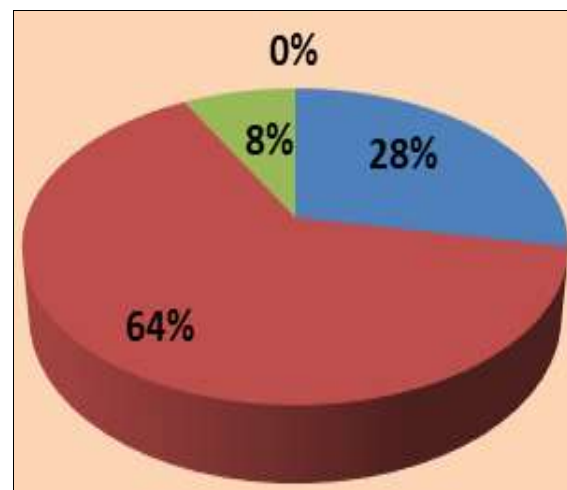
**Section II:** Analysis and interpretation of the findings related to the knowledge of the health care givers regarding shaken baby syndrome in Ankola.

**Table 2:** Mean, Median, Standard Deviation and Range of knowledge scores of subjects regarding shaken baby syndrome N=100

Area of Analysis	Mean	Median	Standard Deviation
Knowledge	13.92	13	2.4145

**Table 3:** Frequency and percentage distribution of level of knowledge scores of subjects regarding shaken baby syndrome N=100

Knowledge scores	Score Range	Frequency (f)	Percentage (%)
Good	16-20	14	28%
Average	11-15	32	64%
Poor	06-10	04	08%
Very Poor	00-05	00	00%



**Fig 1:** Knowledge score

**Table 4:** Frequency and percentage distribution of care givers according to socio-demographic variables n=100

Sl. No	Socio-demographic Variable	Frequency(f)	Percentage%
1.	<b>Age Groups</b>		
	20-25 years	09	18%
	25-30 years	24	48%
	30-35 years	10	20%
	35-40 years	07	14%
2.	<b>Gender</b>		
	Male	04	08%
	Female	46	92%
3.	<b>Religion</b>		
	Hindu	49	98%
	Christian	00	00%
	Muslim	01	02%
	Others	00	00%
4.	<b>Marital Status</b>		
	Married	50	100%
	Unmarried	00	00%
	Widow/ Widower	00	00%
	Separated/Divorced	00	00%
5.	<b>Education Status</b>		
	Illiterate	00	00%
	Primary	06	12%
	High school	14	28%
	Graduation	25	50%
	Post-graduation	05	10%
6.	<b>Occupation</b>		
	House wife	31	62%

	Agriculture	03	06%
	Coolie	08	16%
	Government job	06	12%
	Private job	02	04%
7.	<b>Number of Children</b>		
	Nil	00	00%
	One	28	56%
	Two	21	42%
	Three and above	01	02%
8.	<b>Monthly income</b>		
	Below Rs. 10,000	22	44%
	Rs. 10,000-Rs.20,000	16	32%
	Rs.20,000 and above	12	24%

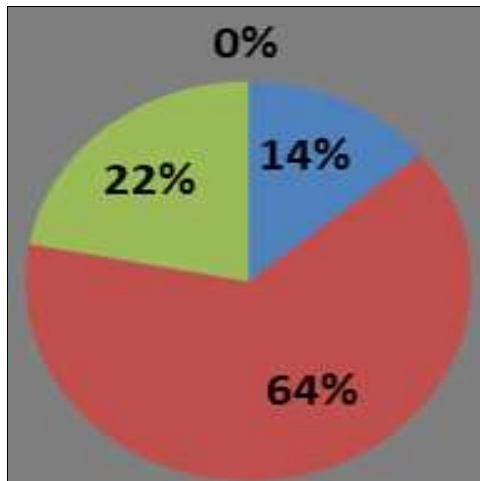
**Section III:** Analysis and interpretation of the findings related to the knowledge of the care givers regarding shaken baby syndrome in Ankola.

**Table 5:** Mean, Median, Standard Deviation and Range of knowledge scores of subjects regarding shaken baby syndrome N=100

Area of Analysis	Mean	Median	Standard Deviation
Knowledge	12.28	13	2.8582

**Table 6:** Frequency and percentage distribution of level of knowledge scores of subjects regarding shaken baby syndrome N=100

Knowledge scores	Score Range	Frequency (f)	Percentage (%)
Good	16-20	07	14%
Average	11-15	32	64%
Poor	06-10	11	22%
Very Poor	00-05	00	00%



**Fig 2:** Knowledge scores

**Equations**

**Statistical analysis**

The data obtained were analyzed in terms of the objectives of the study using descriptive and inferential statistics. Tabulation of data in terms of frequency, percentage, mean, median, standard deviation and range to describe the data.

$$\text{Mean} = \frac{\text{number of observation}}{\text{total score}}$$

$$\text{Standard deviation} = \sqrt{\frac{1}{n} \sum (x - \bar{x})^2}$$

$$\text{Chisquare} = \sum \frac{(O_i - E_i)^2}{E_i}$$

**Conclusions**

This study was conducted to assess knowledge on shaken baby syndrome among health workers and care givers of under 2 years children in the selected hospital of Uttara kannada with view to impart health education. This study was reveals that care givers 14% had good knowledge, 64% had average knowledge and 22% had poor knowledge and in the health care workers 28% had good knowledge, 64% had average knowledge and 8% had poor knowledge on shaken baby syndrome.

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