

## AWARENESS ON FOREIGN BODY ASPIRATION AMONG MOTHERS OF UNDER-FIVE CHILDREN OF A COMMUNITY

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### ABSTRACT

**Background:** Foreign Body Aspiration (FBA) is the fourth leading cause of accidental death for children under five years of age. FBA is a life-threatening emergency and needs urgent intervention. Mother is the primary caregiver for the child who can prevent, identify and get prompt treatment of FBA for their children. The objective of the study was to assess awareness on FBA among mothers of under five children.

**Method:** A descriptive cross-sectional study was conducted among 84 mothers of under-five children based on inclusion criteria using non-probability convenience sampling technique. A self-developed structured questionnaire was used using face to face interview technique to collect the data. Data was collected from 16<sup>th</sup> Jan.2022-14<sup>th</sup> Feb.2022. Data analysis and interpretation was done using descriptive and inferential statistics.

**Findings:** The findings showed that majority of the respondents 52.4% had poor level of awareness on FBA. The findings of the study showed low level of awareness on causes, signs and symptoms, preventive measures, management, complications. Majority of the respondents (91.7%) replied male child as risk gender & 89.3% respondents answered 1-5 years children having maximum chances of FBA. There is no significant association between level of awareness and Socio-demographic variables.

**Conclusion:** More than half of the respondents had poor level of awareness on FBA. Therefore, study emphasizes on need to create more awareness about causes, signs and symptoms, prevention, management and complications among mothers of under-five children.

**Key words:** Awareness, Foreign Body Aspiration

### INTRODUCTION

Foreign body aspiration (FBA) is a perilous condition with a high mortality rate particularly if intervention is delayed. Kids who are less than three years of age are at higher danger of FBA <sup>1</sup>. Choking or foreign body airway obstruction (FBA) occurs when a foreign body such as food, coins, or toys partially or completely obstruct the passage of air from the upper airway into the trachea <sup>2</sup>.

Foreign bodies in the pediatric airway is an emergency condition with a high morbidity and mortality rate. Morbidity ranges from 10 to 20% worldwide and this pathology accounts for up to 7% of accidental deaths in children under 4 <sup>3</sup>.

According to the National Safety Council, in 2016 the rate of fatal choking in American children <5 years of age in the general population was 0.43 per 100,000. However, a previous study analyzing non-fatal choking data of children under the age of 14 has revealed a comparatively higher rate of 20.4 per 100,000 population. 55.2% of these non-fatal choking cases in children <4 years of age<sup>4</sup>.

A descriptive cross-sectional study conducted in Department of ENT, Gomal Medical College/ DHQ Teaching Hospital, Pakistan, 105 children with suspected FBA was included and found that FBA was present in 22.10% of age group 0-2 years, 63.95% of age 2-5 years and 13.95% of age 5-14 years<sup>5</sup>.

Parental awareness regarding signs and symptoms of aspiration is important in the initiation of treatment. It has been found to reduce the incidence of FBA and minimize the risk of complications related to delayed diagnosis such as pneumonia and bronchiectasis<sup>1</sup>.

A study conducted to assess the knowledge on FBA among 60 toddler mothers in selected urban community Jaipur, 95% of them had inadequate knowledge on FBA, 1.67% moderate and 3.33% had adequate knowledge<sup>6</sup>.

A descriptive cross-sectional study conducted at Tribhuvan University Teaching Hospital from April 2010 to March 2016, among children of age up to 15 years with suspected foreign body aspiration with the total of 26,294 children, the prevalence of foreign body aspiration among them was found to be 98 (0.37%)<sup>7</sup>.

A descriptive cross-sectional study was carried out in Nepalgunj Medical college at Nepalgunj, a referral center for Midwestern and far western region of Nepal. Altogether 211 cases were recorded out of which 118 were male and 93 were female. Commonest age group irrespective of type and site of foreign body was less than 5 years (50.2%) of total cases followed by 5-15 years (22.7%), 15-30 years (18.9%), and more than 30 years (8.0%)<sup>8</sup>.

Mother remains with their children most of the time and takes care of them therefore increased awareness in mother plays an important role in prevention of children's morbidity & mortality from foreign body. Therefore, this study might be helpful to assess the awareness of mother on foreign body aspiration.

## **MATERIAL AND METHODS**

A descriptive cross-sectional research design was used to find out the level of awareness on FBA among mothers of under-five children of a community in Sunsari in ward no.4 Non probability convenience sampling technique was used to find out the level of awareness on FBA among mothers of under-five children of community in Sunsari. The total sample size was 84.

Self-developed structured questionnaire which consists of socio-demographic information & awareness on FBA (Meaning, Risk group and Causes, Signs and Symptoms, Prevention, Management, First-Aid, Complications) was used.

### **Ethical Considerations**

Formal administrative approval was obtained from Manmohan Memorial Institute of Health Sciences, Institutional Review Committee (IRCs) and Itahari, Sub-Metropolitan city. Verbal and written informed consent were obtained from each participant.

### **Data Analysis:**

Face to face interview technique was used to collect data by researcher herself by using self-developed structured questionnaire. Data was analyzed using Statistical Package of Social Science (SPSS) software version 26. Data was analyzed using descriptive & inferential statistics.

## RESULTS

Table 1 shows that majority of the respondents (85.7%) were Hindu. Majority of the respondents (73.8%) educational level was secondary level education. Most of the respondents (71.4%) belonged to joint family. Majority of the respondents (64.3%) were of Brahmin/Chhetri ethnicity. Most of the respondents (63.1%) were of age  $\leq 28$  years. More than half of the respondents (58.3%) had only one child. Nearly half of the respondents (46.4%) were homemaker.

In this study, majority of respondents (79.8%) had correctly stated blockage of airway due to foreign object to meaning of FBA. Almost all of the respondent (95.2%) recognized batteries as a most dangerous foreign body a child can aspirate. Majority of the respondents (86.9%) stated that swallowing foreign body is lethal. Findings of the study showed that most of the respondents (91.7%) answered male child having maximum chances of FBA than female (8.3%). Majority of respondents (89.3%) answered 1-5 years children has maximum chances of FBA. More than half of the respondents (59.5%) identified small toys as a cause of FBA.

In present study about 89.3% recognized difficulty breathing, 70.2% difficulty talking, 50.0% choking and 16.7% coughing as sign & symptom of FBA. Majority of the respondent (89.3%) recognizes cyanosis as a symptom that is worrisome in terms of airway compromise. All of the respondents (100%) responded that the correct position for feeding child in sitting up comfortably as a preventive measure of FBA.

**Table 1: Respondent's Socio-Demographic Information**

Variables	Number	n =84
		Percentage
<b>Age (Completed in years)</b>		
$\leq 28$ years	53	63.1
$>28$ years	31	36.9
(Mean $\pm$ SD) (27.57 $\pm$ 4.99) Min : 20 years, Max : 42 years		
<b>Religion</b>		
Hindu	72	85.7
Kirant	12	14.3
<b>Ethnicity</b>		
Dalit	9	10.7
Janajati	20	23.8
Madhesi	1	1.2
Brahmin/Chhetri	54	64.3
<b>Education</b>		
Basic level Education	16	19.0
Secondary Education	62	73.8
Higher Education	6	7.1
<b>Occupation</b>		

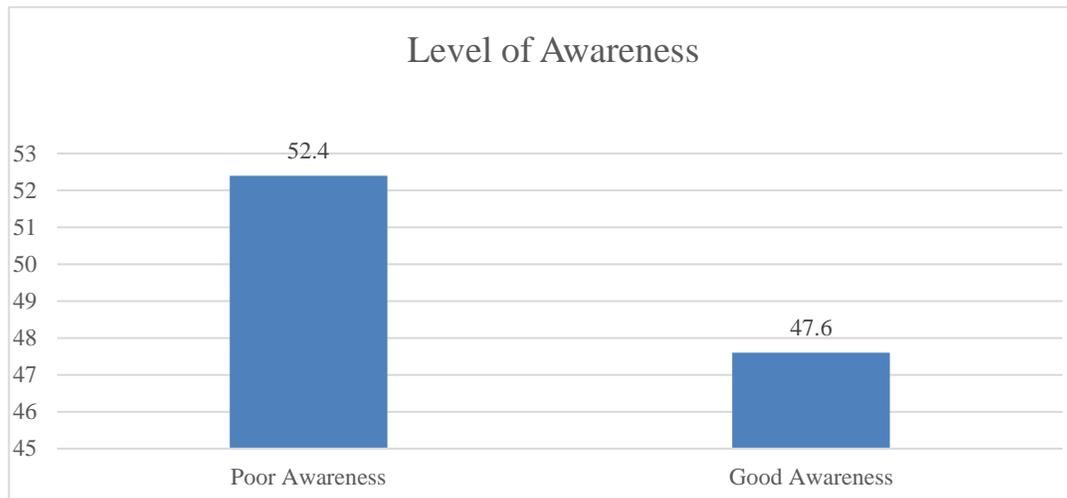
Agriculture	24	28.6
Business	3	3.6
Homemaker	39	46.4
Service	16	19.0
Student	2	2.4
<b>Type of family</b>		
Nuclear	24	28.6
Joint	60	71.4
<b>Number of Children</b>		
1	49	58.3
2-3	33	39.3
> 3	2	2.4

In the study, almost all of the respondents (97.6%) identified that the child should be taken to hospital immediately for treatment of FBA. Most of the respondent (94.0%) stated quick repetitive blows as a management of FBA. Majority of the respondents (88.1%) identified that face down over forearm, supporting head and neck is a position child should be placed for back slap. Majority of the respondents (77.4%) identified down towards head as a correct motion for back slap. Only 26.2% of the respondents identified inward and upward as a correct motion for abdominal thrusts. Only 26.2% of respondents replied correctly as position right above the navel as a placement of fist for abdominal thrusts. Only 23.8% of the respondents correctly responded starting CPR as response if victim becomes unresponsive.

Regarding first aid management, majority of the respondents 81.0% identified immediate management by dislodging airway as a first aid management. The present study shows that majority of the respondents (84.5%) responded that first aid should be initiated within 4 minutes.

Only 23.8% responded starting CPR if victims become unresponsive as a management. Almost all of the respondents (95.2%) identified death as a complication of FBA. Majority of respondents (85.7%) responded multi organ failure as a cause of death. Most of the respondents (90.5%) responded family and friends as a source of information. In this study, 52.4% of the respondents had poor awareness, 47.6% of the respondents had good awareness on FBA.

Table 2 illustrates that there is no significant association between level of awareness & socio-demographic characteristics.



**Figure 1: Level of awareness on FBA**

**Table 2: Association between Respondent's level of Awareness and Socio-demographic characteristics (n=84)**

Variables	Level of Awareness		P-value
	Poor Awareness (%)	Good Awareness (%)	
<b>Age( in years)</b>			
≤ 28	25(47.2)	28(52.8)	0.260
> 28	19(61.3)	12(38.7)	
<b>Religion</b>			
Hindu	39(54.2)	33(45.8)	0.537
Buddhist	5(41.7)	7(58.3)	
<b>Ethnicity</b>			
Brahmin/Chhetri	27(50.0)	27(50.0)	0.361
Others (Dalit, Janajati, Madhesi, Islam)	17(56.7)	13(43.3)	
<b>Education</b>			
Secondary or below	42(53.8)	36 (46.2)	0.418*
College or higher degree	2(33.3)	4(66.7)	
<b>Occupation</b>			
Unemployed	20(50.0)	20(50.0)	0.827
Employed	24(54.5)	20(45.5)	
<b>Type of family</b>			
Nuclear	14(58.3)	10(41.7)	0.629
Joint	30(50.0)	30(50.0)	
<b>Number of children</b>			
1-3	42(51.2)	40(48.8)	0.495*
>3	2(100.0)	0(0.0)	

\*: P-value obtained from Fisher's Exact Test

## DISCUSSION

In this study most of the respondents (63.1%) were of age  $\leq 28$  years. Majority of the respondents (85.7%) were Hindu. Majority of the respondents (64.3%) were of Brahmin/Chhetri ethnicity. Majority of the respondents (73.8%) educational level was secondary level education. Out of 84 respondents, only 13.1% of the respondent's children were exposed to FBA. In this study, 52.4% of the respondents had poor awareness, 47.6% of the respondents had good awareness on FBA which is similar to the study conducted in Mangalore among 150 mothers showing 52.7% respondents had good awareness<sup>9</sup>.

In the present study majority of respondents (89.3%) were aware of 1-5 years children having maximum chances of FBA which is contradictory to a study conducted in Qassim, Saudi Arabia with 60.8% response<sup>1</sup>. Most of the respondents (91.7%) answered male child has maximum chances of FBA.

More than half of the respondents (59.5%) identified small toys and nuts (36.9%) as a cause of FBA which is contrast to the study conducted in where 80% of the respondents identified small toys and 76% identified nuts as a cause of FBA. This might be due to difference in educational status where only 7.1% of the respondents had higher level of education in the present study whereas the study conducted in Saudi had 44.1% with the higher educational status<sup>10</sup>.

Regarding symptoms of foreign body aspiration, present study shows that about 89.3% recognized difficulty breathing, 70.2% difficulty talking, 50.0% choking and 16.7% coughing as a symptom of FBA however the study conducted in Qassim, Saudi Arabia shows different result that only 33% responded difficulty breathing, 44.7% difficulty talking, 19.5% choking, 10.4% coughing as a symptom of FBA<sup>1</sup>.

Majority of the respondents (86.9%) stated that swallowing foreign body is lethal similar to the study conducted in Turkey that stated 77.47% response for swallowing foreign body is lethal<sup>11</sup>. The present study depicts that 47.6% respondents responded that continuous supervision of child as a preventive measure of FBA, followed by avoid giving high risk foods such as nuts, seeds, small fruits i.e. 35.7%, avoid child talking, laughing, playing while eating 44.0%.

Among 84 respondents most of the respondent (94.0%) identified quick repetitive back blows, followed by consulting to the doctor immediately i.e. 8.3%, Abdominal thrusts i.e. 3.6% as a management of FBA but in contrast the research conducted in Eastern province of Saudi Arabia showed that only 27.3% identified quick repetitive back blows, 45.1% consulting to the doctor immediately, 91.4% abdominal thrusts as a management of FBA<sup>12</sup>.

Regarding first aid management in the present study majority of the respondents 81.0% identified immediate management by dislodging airway as a first aid management. The present study shows that majority of the respondent (84.5%) responded that first aid should be initiated within 4 minutes which is similar to research conducted in Turkey with 85.76% response<sup>11</sup>.

Only 23.8% responded starting CPR if victims become unresponsive as a management which is contradictory to a study conducted in western region Saudi where 48.9% responded starting CPR if victim becomes unresponsive as a management<sup>13</sup>. Almost all of the respondents (95.2%) identified death as a complication of FBA. Majority of respondents (85.7%) responded multi organ failure as a cause of death. Study revealed no statistical association between level of awareness and socio-demographical variables like educational status, number of children etc. However, the result is contrast to the study conducted in Qassim,

Saudi where there is significant association between level of awareness and educational status and number of children<sup>1</sup>.

## CONCLUSION

Based on findings of the study more than half of the respondents have poor level of awareness. Respondents have poor level of awareness regarding causes, signs and symptoms, preventive measures, management, complications. However, respondents have good level of awareness on meaning, risk group, first aid management of FBA. In this study, there is no association between level of awareness and Socio-demographic characteristics.

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