

## Assessment Mothers Awareness toward Care of their Children Suffering From Hearing Loss

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### Abstract

**Background:** Children who have hearing impaired need exceptional attention from their families, especially from mothers, as they are the most person contact with their children from birth and throughout life. **Aim:** The study aimed to assess the mothers' awareness towards care of their children suffering from hearing loss. **Design:** A descriptive design utilized in carrying out this study. **Setting:** The study conducted at the at hearing test unit at Hearing and Speech Institute outpatient clinics in Imbaba which affiliated to General Organization for Teaching Hospitals and Institutes, MOH, in Cairo. **Sample:** A convenient sample composed of 150 mothers having children suffering from hearing loss who attend to the previously mentioned setting. **Tools:** It consisted of three tools. (1) A pre-designed questionnaire sheet which consist of two parts: part(1) to assess characteristics of study subjects, part (2) to assess mothers' knowledge about hearing loss, (2) Mothers' reported practices regarding care of their children suffering from hearing loss and (3) Mothers attitude regarding care of their children suffering from hearing loss. **Results:** More than two thirds of the studied mothers have unsatisfactory knowledge about hearing loss and less than two thirds of them had inadequate reported practices regarding care of their children. In addition, less than three quarters of the studied mothers had positive attitude toward care of their children suffering from hearing loss. **Conclusion:** Based on the study findings, can be concluded that, there are strong positive correlations between mothers' total knowledge, total reported practices and total attitude regarding care of their children suffering from hearing loss. **Recommendation:** Conducting an educational programs for mothers to upgrade their knowledge, reported practices and communication with children suffering from hearing loss.

**Key words:** Hearing Loss, Awareness, Mothers, Children.

### Introduction

Hearing loss is commonly known as deafness. It is a hidden disability; it is difficult to identify a child with hearing loss until interacting with noticing hearing aids. Hearing loss or deafness is a major disabling condition worldwide. The etiology of hearing loss range from congenital to acquired, and includes common and preventable childhood infections like otitis media, meningoencephalitie and malnourishment( mainly lack of Vitamin A and Iodine), and these mainly affect poor families. The morbidity and burden of hearing loss on the children and their parents is enormous (Lorna et al., 2017).

Non-genetic causes of hearing loss include infections during pregnancy (such as cytomegalovirus, rubella and toxoplasmosis); diseases (e.g. meningitis, measles, mumps and chronic otitis media); birth conditions as asphyxia,

low weight and hyperbilirubinemia; and head injury. Irrespective of cause, hearing loss at birth or early in life that goes undiagnosed impacts on development of speech and hearing, education and the individual's social-emotional development (WHO, 2018).

Screening for the early detection of health problems is an integral part of public health care system. The term covers all types of examinations and does not consider the speed or accuracy. This definition points to a public health management process in which an investigation is triggered by an administrative system and not a patient initiative. In this way, screening is a process by which child may have diseases or disorders that are undetected or identified as the finding of asymptomatic cases (Lorna et al., 2017).

Early detection of hearing loss and early use of hearing aids or cochlear implants are critical for the development of speech, hearing, and attitude skills in children with hearing loss. In fact, infants identified with a hearing loss before the onset of the critical period of hearing development around six months of age who received a hearing aid or cochlear implant and habilitation services for a year later to develop hearing skills similar to those of children of the same age who have normal hearing (Kutz et al., 2015).

Mothers of children with a hearing loss have reported benefits from this peer support. In order for the most benefit from support programs to occur, there must be encouragement between mothers in order to inform others about the health care system, advocacy, and the best resources available to them and their children (Mukara et al., 2017).

### **Significance of the Study**

There is no doubt that children are the corner stone of society whether healthy or having disability. So that, it is important for everyone to realize that children with hearing loss are an integral part of their community and have the right to communicate in it. Those children should not feel they aren't desired from their community in general and the family in particular or feel that they are stigma among other children. Children who have hearing impaired need exceptional attention from their families, especially from mothers, as they are the most person contact with their children from birth and throughout life.

Hearing is one of the fifth senses which blessed by God to us and it's important for children to know and recognize what surrounding in their environment; so, any disturbance in this sense may lead to delay in speech and affect their interaction and understanding others. From this point, mothers' awareness is very important as it helps their child by early detection and intervention that reflect on their physical and communication development. When mothers have awareness about needs of their children with hearing loss, they will have healthy bond with their children and being able to engage in communication with them.

### **Aim of the study**

This study aimed to assess the mothers' awareness towards care of their children suffering from hearing loss.

#### **Research Questions:**

- 1- What are levels of mothers' knowledge towards hearing loss?
- 2- What are mothers' reported practices towards their children with hearing loss?
1. What are levels of communication with children suffering from hearing loss?

### **Subject and Methods**

#### **Research Design**

A descriptive design used to assess the mothers' awareness towards care of their children suffering from hearing loss.

#### **Study Settings**

The study conducted at Hearing Test Unit at outpatient clinics in Hearing and Speech Institute in Imbaba, which affiliated to General Organization for Teaching Hospitals and Institutes, MOH in Cairo. This unit prepared and specialized in measuring the degree of hearing and speech training.

#### **Subjects**

A convenient sample composed of 150 mothers having children suffering from hearing loss who attend to the previously mentioned setting over a six months period.

#### **Tools of data collection**

Data collected through used the following tools:

**Tool(1)Pre-Designed interview Questionnaire:** It was designed by the researcher and written in simple Arabic language based on scientific literature review to gather data in relation to the following parts:

- Part I.** It concerned with characteristics of:
- Mothers which including: Age, education, occupation, residence and marital status.
  - Children which including: Age, gender, education, ranking and degree of hearing loss.

**Part II.** It was adapted from Dudda et al. (2017), it assess mothers'level knowledge about hearing loss it included 28 questions about:

Early identification of hearing loss, causes, risk factors and early interventions.

#### ❖ Scoring system:

According to the responses obtained from the mothers, a scoring system was as the following, items were scored as one for each **correct answer** and zero for each **incorrect answer**. The total score of the questionnaire items equals 28 grads. The mothers' scores summed up and divided by the number then converted to percentage and accordingly the total mother's knowledge will be classified into:

- **Satisfactory** knowledge = less than 50%.
- **Unsatisfactory** knowledge = 50% and more.

**Tool (2) Mothers' reported practice:** It was adapted from instructions of **Hearing and Speech Institute (2006)**; it concerned with mothers care practices for their children suffering from hearing loss, consists of four parts (39 steps):

- Physical practice(3 items)
- care of hearing aids (7 items).
- Use of hearing aids (8 items).
- Communicating practices (18 items).
- Follow up practice (3 items)

#### ❖ Scoring system:

According to the responses obtained from the mothers a scoring system was as the following, each step was done scored one and zero for each step did not done, then the mothers scores was summed up and converted to percentage and accordingly the total mothers' reported practice was classified into:

- **Adequate**  $\geq 60\%$
- **Inadequate**  $<60\%$

**Tool(3) Mother attitude during practices with their children suffering from hearing loss:**

It was developed by the researchers to assess mothers' attitude regarding care of their children suffering from hearing loss. It consists of two responses (12 trend):

- Positive Attitude (6 trend).
- Negative Attitude (6 trend).

#### ❖ Scoring system:

According to the mothers' responses were measured on a 5-point Likert scale ranging

from "1= always, 2= frequently, 3= sometimes, 4= rarely, and 5= never " respectively. The scores of items were summed-up and the total divided by the number of the items. These scores were converted into a percent score and accordingly the total mothers' attitude was classified into:

- Positive attitude  $\geq 50\%$
- Negative attitude  $<50\%$

### I. Operation Design

The operational design for this study consisted of three phases, namely preparatory phase, pilot study, and fieldwork.

#### Preparatory Phase

This phase included reviewing of literature related to mothers' awareness towards care of their children suffering from hearing loss. This served to develop the study tools for data collection. During this phase, the researcher also visited the selected places to be acquainted with the personnel and the study settings. Development of the tools was under supervisors' guidance and experts' opinions considered.

#### Content and Face Validity and Reliability:

A group (5) of the experts in field of pediatric nursing to test its content validity ascertained content validity and applicability, Reliability was don used test-retest .

Items	Cronbach alpha
Interview questionnaire sheet	0.86
Mothers' reported practices sheet	0.86
Mothers' attitude sheet	0.90

#### Pilot Study

Pilot study carried out on 10% (15 mothers) having children suffering from hearing loss who attends to the previously mentioned setting to test the applicability of the constructed tools and the clarity of the included questions related to hearing loss. The pilot has also served to estimate the time needed for each subject to fill in the questions. According to the results of the pilot , some corrections such as rephrasing and added questions performed as needed. The pilot participants were excluded from the main study (165 sample).

### Fieldwork

The actual field work of this study was carried out over 6 months period stated from the beginning of September 2019 till the end of February 2020 .The researcher was available two days/week the previously mentioned setting shift .Each mother was interviewed individually to gather the necessary data of the study. Regarding the illiterate mothers the interview take more time as they need more explanation about tool items. The mothers were asked to give their responses according to the study tools. the required time to collect data from each mother about 30 -45 minutes.

### II. Administrative Design

Approval obtained through on issued letter from the Dean of Faculty of Nursing, Ain Shams University to directors of the Hearing and Speech Institute outpatient clinics in Imbaba. The researcher then met the Institute director and explained the purpose and the methods of the data collection.

### Ethical Consideration

The research approval obtained from the faculty ethical committee before starting the study. Verbal approval obtained from the mothers before inclusion in the study; a clear and simple explanation given according to their level of understanding, physical and mental readiness. They secured that all the gathered data was confidential and used for research purpose only. The mothers informed that they are allowed to choose to participate or not in the study and they have the right to withdraw from the study at any time.

### IV. Statistical Analysis

Data collected from the studied sample was revised, coded and entered using. PC. Computerized data entry and statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 22. Data were presented using descriptive statistics in the form of frequencies, percentages. Chi-square test ( $\chi^2$ ) used for comparisons between qualitative variables and correlation coefficient was used to test correlation between variables. Statistical significant was considered at p-value <0.05.

### Results:

**Table (1):** shows that 51.3% of studied mothers were in the age group  $25 \leq 35$  years with age mean age  $32.7 \pm 1.62$  years and 38.7% of them had primary education. Regarding the occupation more than half (55.3%) of the studied mothers were housewife.

**Table (2):** shows that 37.3% of the studied children were in the age group < 5 years with mean age  $4.3 \pm 0.8$  years and less than half (44.7%) of them were Illiterate and ranking as third and more in their families.

**Figure (1):** shows that 35.4%, 31.3%, and 10% of the studied children have moderate, severe and profound degree of hearing loss respectively, while 23.3% of them have mild hearing loss.

**Figure (2):** shows that more than two thirds (67.3%) of the studied mothers had unsatisfactory knowledge about hearing loss, while 32.7% of them had satisfactory knowledge.

**Figure (3):** shows that, 60% of the studied mothers had inadequate reported practices related to care of their children suffering from hearing loss, while 40% of them had adequate reported practices.

**Figure (4):** shows that, 71.3% of the studied mothers had positive attitude toward care of their children suffering from hearing loss, while 28.7% of them had negative attitude.

**Table (3):** illustrates that there are statistical significant differences between age, level of education and occupation of the studied mothers' and their knowledge, about hearing loss ( $p < 0.001$ ), while there is no statistical significant difference between residence and marital status, of the studied mothers and their knowledge about hearing loss.

**Table (4):** illustrates that there are statistical significant differences between age, level of education and occupation of the studied mothers and their reported practice related to care of their children suffering from hearing loss , while there are no statistical significant differences between residence and marital status, of the studied mothers and their reported practices related to care of their children suffering from hearing loss.

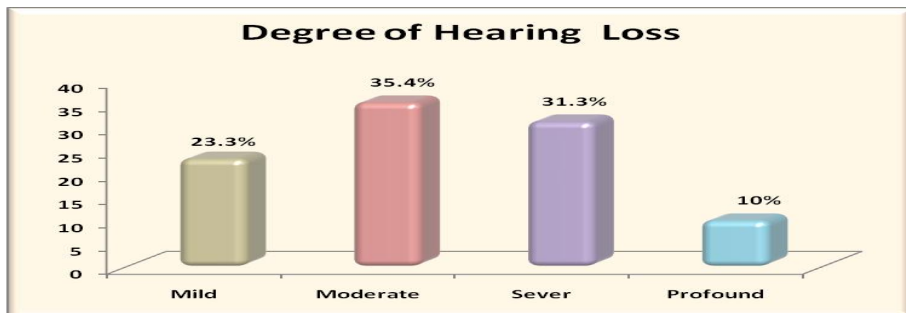
**Table (5):** illustrates that there are statistical significant differences between age, level of education, occupation and residence of the studied mothers and their attitude toward their children suffering from hearing loss ( $p < 0.01$ ), while there is no statistical significant difference between marital status of the studied mothers and their attitude toward their children suffering from hearing loss.

**Table (1):** Distribution of studied mothers according to their characteristic (no=150).

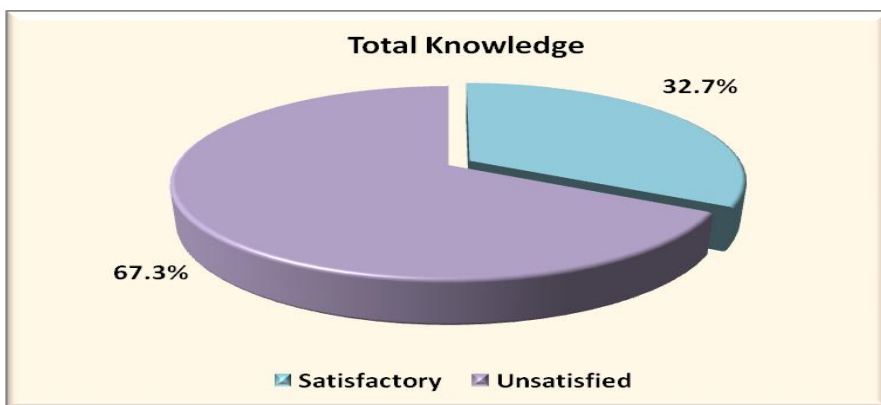
Mothers' Characteristics	No.	%
<b>Age in year</b>		
<25 years	23	15.3
25≤35 years	77	51.3
35≤45 years	38	25.3
≥45 years	12	8.1
Mean± SD	32.7±1.62	
<b>Level of education</b>		
Illiterate	34	22.7
Primary school	58	38.7
Preparatory school	33	22.0
Secondary school	20	13.3
University education	5	3.3
<b>Occupation</b>		
House wife	83	55.3
Employee	67	44.7

**Table (2):** Distribution of studied children' according to their characteristic (no=150).

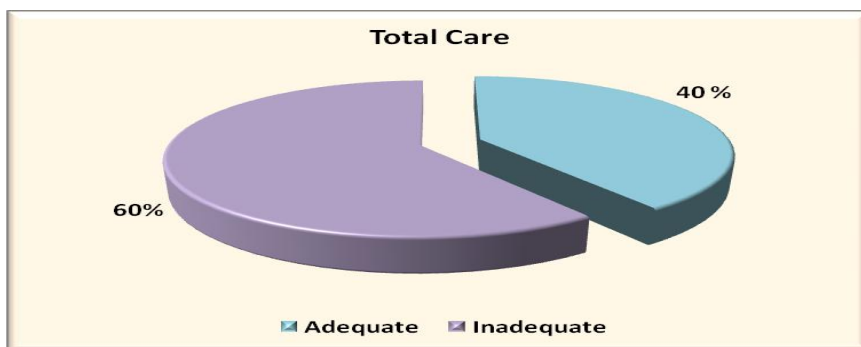
Children' characteristics	No.	%
<b>Age in year</b>		
<5 years	56	37.3
5≤10 years	36	24
10≤15 years	31	20.7
15 years& more	27	18
Mean± SD	4.3 ± 0.8	
<b>Gender</b>		
Male	63	42
Female	87	58
<b>Level of education</b>		
Illiterate	67	44.7
Primary school	49	32.7
Preparatory school	32	21.3
Secondary school	2	1.3
<b>Ranking</b>		
First	45	30
Second	38	25.3
Third& more	67	44.7



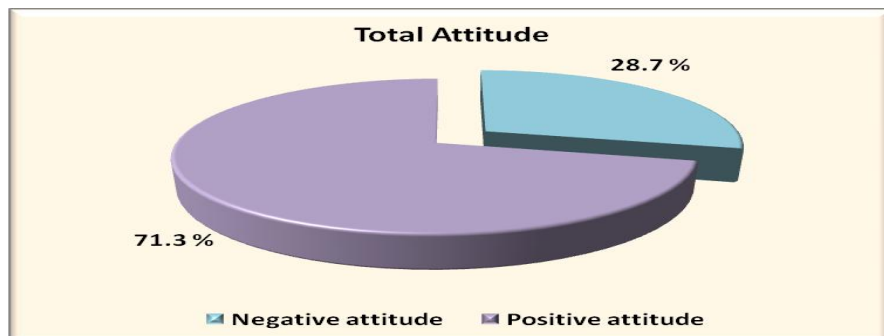
**Figure (1):** Distribution of studied children according to their degree of hearing loss (no=150).



**Figure (2):** Distribution of studied mothers according to their total knowledge about hearing loss (no=150).



**Figure (3):** Distribution of studied mothers according to their total reported practices related to care of their children suffering from hearing loss (no=150).



**Figure (4):** Distribution of studied mothers according to their total level of attitude toward care of their children suffering from hearing loss (no=150).

**Table (3):** Relation between mothers' characteristics and their knowledge about hearing loss.

Mother's Characteristics	Mother's Level of Knowledge				$\chi^2$	P Value
	Satisfactory (no=49)		Unsatisfactory (n=101)			
	No.	%	No.	%		
<b>Age in years</b>						
<25 years	15	30.6	8	7.9	26.81	<b>0.0001**</b>
25≤35years	12	24.5	65	64.4		
35≤45 years	19	38.8	19	18.8		
≥45 years	3	6.1	9	8.9		
<b>Educational level</b>						
Illiterate	4	8.2	54	53.5	45.19	<b>0.0001**</b>
Primary school	8	16.3	26	25.7		
Preparatory school	15	30.6	5	5.0		
Secondary school	19	38.8	14	13.9		
University education	3	6.1	2	0.9		
<b>Occupation</b>						
House wife	9	18.4	58	57.4	20.36	<b>0.0001**</b>
Employee	40	81.6	43	42.6		
<b>Residence</b>						
Urban	39	79.6	75	74.3	0.51	0.47
Rural	10	20.4	26	25.7		
<b>Marital status</b>						
Married	39	79.6	71	70.3	2.18	0.33
Divorced	7	14.3	16	15.8		
Widow	3	6.1	14	13.9		

(\*\*) Highly Statistical significant difference at  $p < 0.01$

**Table (4):** Relation between mothers' characteristics and their reported practices related care of their children suffering from hearing loss.

Mother's Characteristics	Mother's Level of reported practices				$\chi^2$	P Value
	Adequate (n=60)		Inadequate (n=90)			
	No.	%	No.	%		
<b>Age in years</b>						
<25 years	3	5.0	20	22.2	57.11	<b>0.0001**</b>
25≤35years	16	26.7	61	67.8		
35≤45 years	33	55.0	5	5.6		
≥45 years	8	13.3	4	4.4		
<b>Educational level</b>						
Illiterate	3	5	55	61.1	72.71	<b>0.0001**</b>
Primary school	10	16.7	24	26.7		
Preparatory school	16	26.7	4	4.4		
Secondary school	28	46.6	5	5.6		
University education	3	5	2	2.2		
<b>Occupation</b>						
House wife	20	33.3	47	52.2	5.19	<b>0.02*</b>
Employee	40	66.7	43	47.8		
<b>Residence</b>						
Urban	45	75.0	69	76.7	0.05	0.81
Rural	15	25.0	21	23.3		

(\*Statistically significant at  $p < 0.05$  (\*\* Highly Statistical significant difference at  $p < 0.01$ )

**Table (5):** Relation between mothers' characteristics and their total attitude toward their children suffering from hearing loss.

Mother's Characteristics	Mother's Level of Attitude				$\chi^2$	P Value
	Negative attitude (n=43)		Positive attitude (n=107)			
	No.	%	No.	%		
<b>Age in years</b>						
<25 years	12	27.9	11	10.3	17.16	<b>0.0001**</b>
25≤35years	11	25.6	66	61.7		
35≤45 years	15	34.9	23	21.5		
≥45 years	5	11.6	7	6.5		
<b>Educational level</b>						
Illiterate	5	11.6	53	49.5	26.92	<b>0.0001**</b>
Primary school	9	20.9	25	23.5		
Preparatory school	10	23.3	10	9.3		
Secondary school	15	34.9	18	16.8		
University education	4	9.3	1	0.9		
<b>Occupation</b>						
House wife	33	76.7	34	31.8	25.09	<b>0.0001**</b>
Employee	10	23.3	73	68.2		
<b>Residence</b>						
Urban	18	41.9	96	89.7	38.52	<b>0.0001**</b>
Rural	25	58.1	11	10.3		

\*\* Highly Statistical significant difference at  $p < 0.01$

### Discussion:

The WHO established resources for preventing, detecting and managing ear and hearing disorders for an individual. The worldwide newborn hearing screening programs provide

effective early intervention for congenital and early onset hearing loss (WHO, 2017).

Concerning the characteristic of studied mothers, the result of the current study revealed that, about half of studied mothers were in the age



group  $25 \leq 35$  years with mean age  $32.7 \pm 1.62$  years and more than one third of them had primary education. Regarding the occupation more than half of the studied mothers were house wives. These results disagree with the result of **Elbeltafy et al., (2019)**, who studied the hearing loss-related knowledge and attitude toward neonatal hearing screening among Egyptian parents and found that most participants were in the age group between 30–40 years old, had graduated from a university.

Concerning the characteristic of studied children, the results of the present study revealed that, more than one quarter of the studied children were in the age group between  $\leq 5$  years with mean age of them  $4.3 \pm 0.8$  years, more than half of the studied children were females almost half of them were illiterate and one third of them ranking as third child in their family. This study was in the same line with **Gad-Allah et al., (2012)**, who found that, the birth order of half of children were between the 1<sup>st</sup> and last sibling and last sibling.

Concerning the degree of hearing loss of children, the result of current study revealed that, about one third of the studied children have moderate and severe degree of hearing loss respectively. This result was in agreement with **Francis et al., (2018)**, who study the hearing impairment among children referred to a public audiology clinic as two thirds and one quarter of children, have mild and moderate hearing impairment, respectively.

Regarding total knowledge of studied mothers about hearing loss, the results of the present study revealed that, more than two thirds of the studied mothers have unsatisfactory knowledge about hearing loss. This finding is in consistent with **Elbeltafy et al., (2019)**, who found that half of the parents had a good level of knowledge about hearing loss.

Regarding total reported practices regarding care of children suffering from hearing loss, the current study revealed that, almost two thirds of the studied mothers give inadequate care practices regarding their children suffering from hearing loss. The current finding disagreement by **Khalaf et al., (2015)**, who mentioned in their study that, the majority of parents had positive care-seeking practices and most of them preferred to seek treatment from a medical doctor.

Concerning the mothers' attitude toward their children suffering from hearing loss, the findings of the present study revealed that, more than two thirds of the studied mothers had positive attitude toward their children suffering from hearing loss. This result was in an agreement with the result of **Sayed et al., (2018)**, In their study title the Assessment of psychological disorders in Egyptian children with hearing impairment, as the reported that, the high percentage of the parents showed a positive attitude toward neonatal hearing loss.

Concerning the relation between mothers' characteristics and their knowledge about hearing loss, the current study revealed that, there are statistical significant differences between age, level of education and occupation of the studied mothers and their knowledge, about hearing loss, while there are statistical insignificant differences between residence and marital status, of the studied mothers and their knowledge about hearing loss. This study was in the same line with **Elbeltafy et al., (2019)**, who found that no significant association between parents' knowledge and attitude toward hearing loss and their socio-demographic characteristics.

Concerning the relation between mothers' characteristics and their care for their children suffering from hearing loss, the findings of the present study revealed that, that there are statistical significant differences between age, level of education and occupation of the studied mothers and their care practice for their children suffering from hearing loss, while there are statistical insignificant differences between residence and marital status, of the studied mothers and their care practice for their children suffering from hearing loss. This finding was similar to the study conducted by **Munoz et al., (2015)**; who found that, that there was association between parents' demographic data and their knowledge and attitude toward infant hearing loss.

Concerning the relation between mothers' characteristics and their attitude toward their children suffering from hearing loss, the current study revealed that, there are statistical significant differences between age, level of education, occupation and residence of the studied mothers and their attitude toward their children suffering from hearing loss, while there is statistical insignificant difference between marital status, of the studied mothers and their attitude toward their children suffering from hearing loss. This finding

was consistent with the study demonstrated by **Lam-Cassettari., (2015)**, who studied the enhancing parent child communication and parental self-esteem with a video-feedback intervention mode of communication at home, the best predictor, was the auditory found that, there was only a significant association between the age of parents and their attitude toward the child wearing of hearing aids. This finding can be explained by the fact that, there is better decision making with increasing age.

### **Conclusion:**

Based on the study findings it was concluded that, more than two thirds of the studied mothers had unsatisfactory knowledge about hearing loss and almost two thirds had inadequate reported practices regarding to care of their children suffering from hearing loss and about three quarters of the studied mothers had positive attitude regarding to their children suffering from hearing loss. Finally, there are strong positive correlations between mothers' total knowledge, total reported practices and total attitude regarding care of their children suffering from hearing loss.

### **Recommendations:**

Based upon the results of the current study the following recommendations suggested:

- Educational programs are necessary to upgrade the mothers' level of knowledge, practices with children suffering from hearing loss
- Periodic hearing screening for early identification should done for children before 6 months of age.
- Replication of this study on a larger probability sample from the different geographical locations at the Arab Republic of Egypt and further research.

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