

Mothers' Knowledge and Attitude Regarding Early Detection of Hearing Loss among Their Infants in Port Said City.

Yosra Tarek El Sayed Shehata¹, Fatma El Emam Hafez², Magda Ali Mohamed³, Fatma Mohamed El Swerky⁴

B.Sc nursing¹, Assistant Professor of Family and Community Health Nursing, Faculty of Nursing, El Mansoura University, Egypt², Assistant Professor of Family and Community Health Nursing, Faculty of Nursing, Port Said University, Egypt³, Lecturer of Family and Community Health Nursing,⁴ Faculty of Nursing Port Said University, Egypt.

ABSTRACT

Background: Mothers' knowledge and attitudes about hearing loss have a significant role in the early discovery and effective treatment of childhood hearing impairment. **Aim:** this study assess mothers' knowledge and attitude about early detection of hearing loss of their infants in Port Said. **Subjects and Methods:** A descriptive cross-section **design. Setting:** this study was conducted at pediatric clinics and immunization rooms in primary healthcare facilities affiliated to Egypt healthcare authority in Port Said. **Subjects:** Non-Probability, Purposive sampling of 279 mothers whom selected from above mentioned settings. **Tools:** The data was collected using structured interviews and mothers' attitudes on infant hearing testing and early intervention. **The Results:** with a mean standard deviation of 32.22 7.49; 49.1% had overall fair knowledge of the causes and effects of hearing loss; 53.3% of respondents expressed a negative attitude toward the subject of hearing loss, whereas 70.6% recognized the value of early hearing loss detection. There was no statistically significant relationship between the mothers' opinions toward infant screening and early intervention for hearing loss and their knowledge of hearing loss screening. **Conclusion:** In general, more than half of the study's mom participants had a fair grasp of hearing loss, while roughly two thirds had a generally good attitude toward it. However, the mothers' knowledge of hearing loss was unrelated to their overall attitudes. **Recommendations:** The creation of public awareness campaigns must be taken into account in order to change parents' perceptions about and attitudes around infant hearing loss as well as neonatal screening and care.

Keywords: Attitude, Hearing loss, Knowledge

INTRODUCTION

Children with hearing loss have lower voice resolution, which interferes with their ability to understand speech and learn (*AlOtaibi et al., 2020*). The fourth most common handicap in the world today is hearing loss. Interpersonal communication, psychosocial welfare, prospects for academic and professional careers, financial independence, and quality of life are all hampered by disabling hearing loss. The World Health Organization (WHO) has determined that a hearing loss of more than 30 dB in the better-hearing ear is regarded as debilitating for newborns (babies between the ages of birth and 12 months) and children (0 to 14 years). Yet, a decreased threshold for hearing loss also has an adverse effect. For example, children with hearing loss of greater than 26 dB may have trouble understanding background noise or mild dialogue (*Neumann, Chadha, Tavartkiladze & White, 2019*).

All organisms' lives are significantly influenced by their senses. They influence how we experience the world, how we perceive it, how we interact with it, and how we perceive ourselves (*Marriage et al., 2017*). In 2010, there were 360 million people worldwide who had a debilitating hearing loss, up from 42 million in 1985. Among these, more than 7.5 million were children under the age of five. There are about 466 million permanently disabled individuals with hearing loss in the world, according to latest estimates. These individuals make up more than 6% of the world's population (*WHO, 2018*).

Numerous Arab countries, notably Yemen (51.8%), Iraq (17.6%), Saudi Arabia (16.8%), Kuwait (10.7%), and Qatar (5.2%), had high rates and incidences of hearing loss among children. Accurately estimating hearing loss in children Due to the lack of a widespread hearing screening program up to now and the reliance on academic research carried out at hospitals, it is challenging to detect hearing loss in Egypt. In a previous study, it was determined that 20.9% of youngsters in Egypt's Shebin El-Kom District had hearing loss (*Elbeltagy, Bakry & Waly, 2019*).

Ear infections (in particular, chronic suppurates otitis media), rubella, measles, mumps, meningitis, congenital CMV, ototoxic substances, and exposure to noise at work or play are typical risk factors for hearing loss. The bulk of these elements are important for infants (babies between the ages of one and twelve months) and young children. Also,

it's thought that more than 50% of all occurrences of congenital hearing loss in children are caused by inherited factors. Genes that are X-linked, autosomal dominant, or autosomal recessive can all result in genetic hearing loss. In some regions of the world, risk factors like rubella, measles, mumps, and meningitis have recently decreased, while others are rising (e.g., exposure to loud recreational noise) (WHO, 2018a).

Eighty percent of adults with permanent hearing loss reside in low- or middle-income nations, where chronic otitis media, filthy ears, unsafe birth and delivery practices, and a lack of immunization programs significantly raise the risk of children acquiring irreversible hearing loss. Furthermore, the global production of hearing aids only meets less than 3% of the demand in these countries. Lack of resources and sufficient services for the installation, maintenance, and repair of hearing equipment are further barriers (WHO, 2021). There are four basic ways that hearing loss affects children: First off, it hinders the growth of their communicative abilities, both receptive and expressive (speech and language). Second, linguistic obstacles that hinder learning lead to lower academic success. Children that have trouble communicating may feel isolated, lonely, or depressed. Finally, it may influence decisions you make regarding your career. (Haukedal et al, 2022).

These effects must be avoided by early identification of infant hearing loss and the start of rehabilitation therapy. Early detection and treatment of hearing loss reduces the risk of irreversible hearing loss and improves outcomes for expressive speech and language. A delayed diagnosis significantly impairs learning and restricts educational opportunities because schools are usually auditory-verbal settings (Hall, Hall, & Caselli, 2019). Early detection and intervention Early Hearing Loss Detection and Intervention (EHDI) is a comprehensive, multidisciplinary, national NHS program that focuses on early identification and intervention of hearing loss. The phrase "EHDI" refers to a proper diagnostic assessment and a family-centered approach to care after screening. EHDI programs are intended to identify and diagnose hearing loss in newborns and babies and to offer these people support as soon as feasible, according to the Joint Committee on Infant Hearing (JCIH, 2007) and the Health Professions Council of South Africa (HPCSA) (Alam, Satterfield, Mason, & Deng, 2016).

All newborns with proven, persistent hearing loss receive assistance through EHDI programs, which adopt a family-centered approach. Providing intervention to all infants with confirmed, permanent hearing loss is one of the other tenets of EHDI. Other tenets include access to hearing screening for all newborns, access to appropriate audiological and medical evaluation for all infants who refer upon initial and subsequent rescreening, and immediate access to high-quality technology for the child and family (Shearer, Shen, Amr, Morton, & Smith, 2019).

The hearing loss screening and intervention processes involve parents, particularly the mother. Their education and attitude undoubtedly have an impact on the choices people make. Their decisions about the infant's early detection and treatment of hearing loss could have a long-lasting effect. Since mothers are the ones who are closest to and spend the most time with their children, it is crucial for them to carefully study the infant and become familiar with all of its traits, especially its sense of hearing (Ching, et al. 2018).

A community health nurse diagnoses any hearing impairment and suggests the child for testing and logical audiototherapy. It plays a part in informing mothers about the condition and risk factors linked to hearing loss in the absence of routine screening, offering support and advice, directing them to the best referral sources, and attending scheduled appointments so that mothers are more aware of the significance of follow-up (Khan, Joseph, & Adhikari, 2018).

Significance of the study

Hearing loss has an effect on the whole family as well as society. 5% of the world's population, or more than 360 million people, suffer from debilitating hearing loss (328 million adults and 32 million children). A hearing loss of more than 40 dB in the ear with the better hearing is regarded as being debilitating in both adults and children. The majority of those who have significant hearing loss reside in low- and middle-income nations. Children make for 32 (9%) millions of those (Olusanya, Davis, & Hoffman, 2019). The prevalence of disabling hearing loss in children in Egypt is estimated to be 20.9% (Elbeltagya, Bakryb, & Waly, 2019).

In addition, numerous studies have demonstrated that mothers' attitudes and knowledge are crucial to the effectiveness of initiatives aimed at early hearing loss

detection and intervention. Poor awareness and attitudes concerning disabling hearing loss have been observed in studies conducted in underdeveloped nations, which are heavily impacted by superstition and cultural beliefs (Babik and Gardne, 2021). High dropout rates and lack of follow-up have been linked to inadequate knowledge of universal neonatal hearing screening (UNHS), comprehension of the results, and follow-up among new moms. So, research of mothers' opinions and worries about available baby hearing and HL screening choices is required.

AIM OF THE STUDY

The aim of the study was to assess mothers' knowledge and attitude about early detection of hearing loss of their infants in Port Said

Objectives to:

1. Identify mothers' knowledge about early detection of hearing loss of their infants in Port Said City.
2. Explore mothers' attitude about early detection of hearing loss of their infants in Port Said City.

SUBJECT AND METHOD

I. Research design

The study's descriptive cross-sectional design was employed.

Setting

This study was carried out in basic Primary healthcare facilities affiliated to Egypt health care authority in the Port Said city at children's clinics and immunization rooms. Elzehour district, Eldawahey district, Elarb district, Elmanakh district, and Elshark district are the five districts of Port Said. From each district, one main healthcare facility was randomly selected.

Type of sample

In the study, mothers of newborns (all women with infants) were chosen based on their relative ease of access to the aforementioned health care settings using non-probability, purposive sampling.

Sample size

The sample size was determined by using the following equation.

$$\text{Sample Size (n)} = \frac{Z^2}{\Delta^2} P (100 - P) \text{ (Dobson, 1984).}$$

Where

P: The expected percentage of hearing loss among children is estimated to be 20.9 % (Taha et al, 2010).

Z: A percentile of standard normal distribution determined by 95% confidence level = 1.96

Δ: The width of the confidence interval = 5.

The calculated sample size was 254 mothers. Due to the design effects (1.25) expected non-participating rate (10%).

Subjects

Non-probability, purposeful sample of 279 mothers was chosen; however, 28 of them were eliminated from the sample since they had participated in the pilot study.

Inclusion criteria

- Mothers had to agree to participate in the study, and mothers had to be available for data collection.
- Mothers' of infants age between (at birth – 12 months).

Exclusion criteria

- Infants had any physical or psychological or mental abnormalities.

Tools of data collection

To collect data for this study, the following two tools were used:

Tool I: Structured interview

This tool was adapted from (Belal, Elzeftawy and Soliman, 2019) and included four parts as following:

- **Part (1): Socio-demographic characteristics of the mothers:** included: (age, marital status, educational level, occupation, family income, number of children and home characteristics).
- **Part (2): Bio-socio-demographic characteristics of the infant:** which included (age, sex, birth order, type of delivery, birth complications, trauma of ear, ear infection and receiving any drugs).
- **Part (3): Medical history of infant family history:** included family history with problems such as: (hypertension, meningitis, otitis media, diabetes mellitus, hearing loss or impairment, infection during pregnancy, receiving any drugs during pregnancy and congenital malformation in the previous children).
- **Part (4): Mothers' knowledge about hearing loss screening** included (mothers' knowledge about definition, causes, consequences of hearing loss, level or degree of hearing loss, National health service (NHS) and related intervention, important of early detection of hearing loss).

Scoring system

Each question of the knowledge part was coded as "zero" for an incorrect answer or a "don't know", and "one" for the correct answer. The total score was obtained by summing the scores of all responses. According to (Belal, Elzeftawy, and Soliman, 2019).

The total score was categorized as following:

- Good knowledge: ≥ 70 % of the total score.
- Fair knowledge: 50% - < 70 % of the total score.
- Poor knowledge :< 50% of the total score.

Tool II: Mothers' attitude towards infant screening and early intervention of hearing loss

The tool adapted from (Olusanya, Ruben and Parving, 2006) was modified and used to collect the data of this part. It included (Attitude toward the hearing loss problem, preferred time of detected hearing loss, preferred screening method of hearing (as Otoacoustic Emission (OAE) and Brainstem Auditory Evoked Response (BAER) and early intervention of hearing loss.

The women's responses were ranked using three-point Likert scale (agree)= 2, (neutral) =1, (disagree) =zero.

The total score was obtained by summing responses of each statement of the used scale. According to (Olusanya, Ruben and Parving, 2006).

The total score was categorized as follow:

- Positive attitude: $\geq 60\%$ of the total score.
- Negative attitude : $< 60\%$ of the total score.

II. Operational design

The preparatory stage, tool content validity, pilot research, reliability, and fieldwork are all included in the operational design of this project.

Preparatory phase

Using books, papers, online periodicals, and websites like pumped, it involves reviewing the literature, diverse studies, and theoretical understanding of many facets of the topic , ...etc.

Content Validity

Face validity: The instrument was presented to a jury of five community health professionals from the nursing department at Port Said Universities. To determine the extent to which tools were intended to assess something, tool content validity was investigated. The tools' content coverage, item sequencing, clarity, applicability,

relevance, phrasing, length, format, and overall presentation were all scrutinized. Modifications were made.

Content reliability

Test reliability: The tool's dependability was tested to ensure its consistency. The internal consistency is calculated to determine the degree to which the tool's components measured the things they were designed to measure. The Cronbach's alpha coefficient was used to evaluate the tool's internal consistency. No reliability is indicated by a Cronbach's alpha value of 0.00, while perfect reliability is indicated by a coefficient of 1.00. A reliability coefficient of 0.70 is suitable, though. Using the Cronbach's Alpha test, the internal consistency was evaluated and revealed an 84% dependability rate.

Pilot study

Prior to beginning the actual data collecting, the pilot study was carried out approximately through one month from the beginning to the end of September 2021. 28 individuals (10%) were used to test the feasibility, objectivity, application, clarity, and sufficiency of the study tools and to identify any potential issues with the methodology. The pilot study was collected from the previous mentioned settings randomly according to the distribution of the primary health care centers in each district. The proposed statistical and data analysis techniques were put to the test using the findings of the pilot study. The tools were successfully completed, supporting the validity of the instrument.

Field Work

Data were gathered over the course of four months, from early November to the end of February 2021, after permission to move forward with the current study was received from responsible and authoritative parties. The researcher attended the study setting three days weekly (Saturday, Tuesday, Thursday) until the calculated sample size was obtained. After introducing themselves and outlining the study's objectives in the center director's office, the researcher was directed to the appropriate nurse. Each mother was questioned separately by the researchers to fill out the study's data collecting form; each participant was given a total of 45 to 60 minutes to complete it. The mother who had been studying was then acknowledged for their assistance.

II-Administrative design

The dean of the nursing faculty in Port Said city sent preliminary, official letters to the health directorate, the directors of the chosen children's clinics, and the immunization rooms requesting their cooperation and commitment to carry out the study

Ethical consideration

First of all, the Port-Said University Faculty of Nursing's Scientific Research Ethics Council authorized the research proposal on October 8, 2020–20. Second, the chosen settings from which the data were acquired gave their consent. Fourth, anonymity and voluntary participation in the study were assured. Third, a verbal agreement was gained from the studied moms following a clear explanation of the study's purpose. All study participants reaffirmed their commitment to secrecy, and researchers reaffirmed that the material would only be used for research.

III- Statistical analysis

The statistical program for social science (SPSS) version was used for both data entry and statistical analysis (24.0). For qualitative and quantitative variables, respectively, means and standard deviations were used to present the data using descriptive statistics. Using the chi-square test, qualitative categorical variables were compared. Fisher Exact and Monte Carlo Chi-square must be rectified when more than 20% of the cells have an expected count of under five. Also, among adolescent university students, the Pearson coefficient test was utilized to link aggressive behavior with psychosocial adjustment. Significance is measured by the P-value. The P-value cutoff for statistical significance was 0.05.

RESULTS

Table (1): Shows the socio-demographic characteristics of the investigated moms. There were 279 women in the study group, and fewer than half (44.4%) of them were between the ages of 30 and 40. Moreover, 59.9% of the moms who participated in the study were married. Regarding education, 27.6% of them claimed to have a bachelor's degree or above. Additionally, more than half of them (67.7%) were mothers who did not hold a job. When looking at monthly income, the majority (36.6%) of the mothers in the study did not have enough money. Also, the chart showed that 39.8% of the moms in the study had just one kid. Ultimately, it was discovered that 58.8% of the moms who had been surveyed resided in urban areas.

Table (2): demonstrates that 49.1% of the moms who participated in the study had a fair understanding of the causes and effects of hearing loss. As shown, fewer than seventy percent of the moms who participated in the study had overall fair understanding of the significance of early identification of hearing loss, and 58.1% had fair knowledge of hearing loss in general.

Table (3): shows that 53.3% of the moms who participated in the study had a negative attitude toward the issue of hearing loss and 73.5% preferred early detection of hearing loss. On the other side, 81.7% and 79.9% of the mothers who participated in the study had favorable attitudes toward their preferred hearing screening methods, which were early hearing loss intervention and brainstem auditory evoked response, respectively (BAER and OAE). The table also revealed that 64.2% of the mothers who participated in the study had an entirely favorable attitude regarding hearing loss.

As shown in Table (4), there was no statistically significant link between mothers' attitudes regarding infant screening and early intervention for hearing loss and their knowledge of hearing loss screening ($r=-0.029$).

Table (5): demonstrates that there was a statistically significant difference between the mothers' overall knowledge of hearing loss and their area of residence. At $p < 0.05$, no other statistically significant relationships could be found in the table.

Table (6): shows that there was a statistically significant difference between the mothers' overall attitude toward hearing loss and their household income. At p 0.05, no more statistically significant relationships could be found in the table.

Table (1): Distribution of the studied Moms according to Socio-demographic characteristics (n =279).

Items	No.	%
Age (years)		
<20	6	2.2
20-30	104	37.3
30-40	124	44.4
≥40	45	16.1
Min. – Max.	18.0 – 49.0	
Mean ± SD.	32.22 ± 7.49	
Median	32.0	
Marital status		
Married	167	59.9
Divorced	62	22.2
Widowed	50	17.9
Educational level		
Cannot read and write	25	9.0
Read and write	35	12.5
Basic education	76	27.2
Secondary education	66	23.7
University and above	77	27.6
Occupation		
Don't work	90	32.3
Work	189	67.7
Family income		
Not enough	101	36.2
Enough	76	27.2
Enough and more	11	3.9
Number of children		
1	111	39.8
2	100	35.8
3	63	22.6
4	5	1.8
Min. – Max.	1.0 – 4.0	
Mean ± SD.	1.86± 0.82	
Median	2.0	
Place of residence		
Rural	115	41.2
Urban	164	58.8

Table (2): Distribution of the studied mothers according to level of Moms' knowledge about hearing loss screening (n =279)

Items	knowledge					
	Poor (< 50%)		Fair (50%-<70%)		Good (≥70%)	
	No.	%	No.	%	No.	%
Causes and consequences of hearing loss	135	48.4	137	49.1	5	1.8
Importance of early detection of hearing loss	40	14.3	197	70.6	42	15.1
Overall	113	40.5	162	58.1	4	1.4

Table (3): Distribution of the studied Moms according to level of Moms' attitude towards infant screening and early intervention of hearing loss (n =279)

Items	Negative attitude (< 60%)		Positive attitude (≥ 60%)	
	No.	%	No.	%
Attitude toward the hearing loss problem	205	73.5	74	26.5
Preferred time of detected hearing loss	148	53.0	131	47.0
Preferred screening method of hearing (as Otoacoustic Emission)	51	18.3	228	81.7
Early intervention of hearing loss	56	20.1	223	79.9
Overall	100	35.8	179	64.2

Table (4): Correlation between Moms' knowledge about hearing loss screening and Mothers' attitude towards infant screening and early intervention of hearing loss (n = 279)

	Mothers' attitude towards infant screening and early intervention of hearing loss	
	R	P
Mothers' knowledge about hearing loss screening	0.029	0.624

r: Pearson coefficient

Table (5): Relation between overall Moms' knowledge with socio-demographic characteristics (n = 279)

Socio-demographic characteristics	Overall mothers' knowledge						χ^2	MC _p
	Poor knowledge (< 50%) (n = 113)		Fair knowledge (50 – <70%) (n = 162)		Good knowledge (≥70%) (n = 4)			
	No.	%	No.	%	No.	%		
Age (years)								
<20	2	1.8	4	2.5	0	0.0	5.440	0.497
20 – 30	45	39.8	59	36.4	0	0.0		
30 – 40	50	44.2	72	44.4	2	50.0		
≥40	16	14.2	27	16.7	2	50.0		
Marital status								
Married	72	63.7	92	56.8	3	75.0	1.973	0.750
Divorced	22	19.5	39	24.1	1	25.0		
Widowed	19	16.8	31	19.1	0	0.0		
Educational level								
Cannot read and write	5	4.4	20	12.3	0	0.0	10.786	0.134
Read and write	13	11.5	22	13.6	0	0.0		
Basic education	28	24.8	45	27.8	3	75.0		
Secondary education	30	26.5	36	22.2	0	0.0		
University and above	37	32.7	39	24.1	1	25.0		
Occupation								
Don't work	33	29.2	55	34.0	2	50.0	1.476	0.530
Work	80	70.8	107	66.0	2	50.0		
Family income								
Not enough	41	36.3	58	35.8	2	50.0	3.193	0.815
Enough	34	30.1	42	25.9	0	0.0		
Enough and more	5	4.4	6	3.7	0	0.0		
Not applicable	33	29.2	56	34.6	2	50.0		
Number of children								
1	46	40.7	64	39.5	1	25.0	3.807	0.767
2	44	38.9	54	33.3	2	50.0		
3	21	18.6	41	25.3	1	25.0		
4	2	1.8	3	1.9	0	0.0		
Place of residence								
Rural	64	56.6	50	30.9	1	25.0	18.550*	<0.001*
Urban	49	43.4	112	69.1	3	75.0		

 χ^2 : Chi square test

MC: Monte Carlo

p: p value for comparing between the studied categories

*: Statistically significant at $p \leq 0.05$

Table (6): Relation between overall Moms' attitude towards infant screening and early intervention of hearing loss with socio-demographic characteristics (n = 279)

Socio-demographic characteristics	Overall mothers' attitude				χ^2	P
	Negative attitude (n = 100)		Positive attitude (n = 179)			
	No.	%	No.	%		
Age (years)						
<20	4	4.0	2	1.1	3.217	MC p= 0.369
20 – 30	34	34.0	70	39.1		
30 – 40	44	44.0	80	44.7		
≥40	18	18.0	27	15.1		
Marital status						
Married	56	56.0	111	62.0	2.736	0.255
Divorced	21	21.0	41	22.9		
Widowed	23	23.0	27	15.1		
Educational level						
Cannot read and write	9	9.0	16	8.9	1.639	0.802
Read and write	10	10.0	25	14.0		
Basic education	26	26.0	50	27.9		
Secondary education	27	27.0	39	21.8		
University and above	28	28.0	49	27.4		
Occupation						
Don't work	19	19.0	71	39.7	12.538*	<0.001*
Work	81	81.0	108	60.3		
Family income						
Not enough	47	47.0	54	30.2	19.203*	<0.001*
Enough	33	33.0	43	24.0		
Enough and more	1	1.0	10	5.6		
Not applicable	19	19.0	72	40.2		
Number of children						
1	45	45.0	66	36.9	5.427	MC p= 0.141
2	36	36.0	64	35.8		
3	16	16.0	47	26.3		
4	3	3.0	2	1.1		
Place of residence						
Rural	44	44.0	71	39.7	0.498	0.481
Urban	56	56.0	108	60.3		

 χ^2 : Chi square test

MC: Monte Carlo

p: p value for comparing between the studied categories

*: Statistically significant at $p \leq 0.05$

DISCUSSION

Throughout the process of hearing screening and intervention, moms of an infant are crucial players. Their expertise and attitude undoubtedly affect the decisions they make (Olusanya et al., 2019). The purpose of this study was to determine how Egyptian mothers felt about the risk factors for infant hearing loss, infant screening, and treatment.

Less than half of the examined moms had overall fair knowledge about the causes and effects of hearing loss, according to the current findings regarding the distribution of the studied mothers according to their level of knowledge about hearing loss screening. As shown, less than three-quarters of the mothers who participated in the study had overall fair awareness of hearing loss and less than three-fifths had overall fair understanding of the necessity of early identification of hearing loss. According to researchers, this can be the result of the mother's lack of prior knowledge or counseling regarding hearing loss and hearing screening.

The findings of the study are consistent with those of Ayas and Yaseen (2021), who showed in their study titled "Knowledge and Attitudes of Parents towards Childhood Hearing Loss and Pediatric Hearing Services in Sharjah, United Arab Emirates" that more than one third of the studied mothers had good knowledge of the various factors associated with childhood hearing loss. Poor knowledge is possessed by over two thirds of them. These results were in line with those of Elbeltagya et al. (2019), who investigated Egyptian parents' attitudes toward neonatal hearing screening and their knowledge of hearing loss. They found that, overall, more than half of the parents who took part in the study had a fair understanding of hearing loss. More than half of the parents correctly identified the primary etiological factors for infant hearing loss, according to Ravi, et al. (2016) in their study titled "Knowledge and attitude (KA) survey regarding infant hearing loss in Karnataka."

In addition, Jatto et al. (2018) reported in their study on "Mothers' perspectives of newborn hearing screening program at India" that although mothers show willingness to accept the newborn hearing screening, they lack adequate knowledge about newborn hearing screening and risk factors for infant hearing loss. The study's findings differ from those of Mohammed et al. (2020), who found that less than three-quarters of caregivers have adequate knowledge and less than one-third of them has inadequate knowledge

about hearing loss in their study, "Assessment of Knowledge and Attitudes of Caregivers Regarding Hearing Impairment among Children at Minia City."

The results of the current study also showed that the mothers who were studied were distributed according to their attitudes toward infant screening and early intervention for hearing loss, with more than half of the mothers having a positive attitude toward the problem of hearing loss and less than three-quarters having a negative attitude, respectively. On the other hand, the majority of the moms who participated in the study had a favorable attitude toward early detection of hearing loss and favoured methods of screening for it, such as otoacoustic emission and brainstem auditory evoked response (BAER). Less than two thirds of the mothers who participated in the study had a completely positive attitude regarding hearing loss. According to researchers, this may be because the mothers who were studied felt that it was a serious issue for their kids, therefore they took action to keep them safe and healthy.

According to Ayas and Yaseen's study from 2021, "Knowledge and Attitudes of Parents Toward Childhood Hearing Loss and Pediatric Hearing Services in Sharjah, United Arab Emirates," the majority of the parents in the study had extremely positive attitudes toward using pediatric audiology services, while less than one-fifth of them did. Additionally, Kaspar et al. (2017) found that almost all of the parents in their study had a favorable attitude toward infant hearing screening programs and school-based ear and hearing health examinations. The study was titled "Parental Knowledge and Attitudes to Childhood Hearing Loss and Hearing Services in the Solomon Islands". Additionally, according to Alsudays et al. (2020), who conducted a study on "Parental knowledge and attitudes to childhood hearing loss and hearing services in Qassim, Saudi Arabia," the majority of the sample had positive attitudes toward audiology services, with only about one-fifth having a negative attitude.

The current study's findings showed that there was no statistically significant correlation between mothers' knowledge of hearing loss screening and attitudes toward infant screening and early intervention for hearing loss. According to researchers, this might be because mothers don't always know about hearing loss or hearing screening, but they still think it's crucial to conduct any study that would help their kids be healthy.

The findings of the study were supported by the "Assessment of Knowledge and Attitudes of Caregivers Regarding Hearing Impairment among Children at Minia City" study by Mohammed et al., which discovered no significant differences between attitude and knowledge scores of both participants with adequate and inadequate knowledge. This result was in line with those of Wong et al. (2019) and Alsudays et al. (2020), who discovered no relationship between knowledge and attitude towards childhood hearing loss. Moreover, the vast majority of sample parents were ignorant of childhood HL. Yet, most parents expressed pleasure with the audiology services.

The current study's findings revealed a statistically significant difference between the examined mothers' areas of residence and their overall awareness of hearing loss with regard to the relationship between mothers' general knowledge and socio-demographic traits. No other statistically significant correlations could be found. According to the study, this may be the result of moms in urban areas having a greater probability of achieving a better degree of education and reading more than mothers and women in rural areas.

Belal et al.'s study on "Mothers' knowledge and attitude regarding early detection of hearing loss among their infants in Egypt" found a highly statistically significant correlation between the studied mothers' age, level of education, employment status, and marital status and their overall knowledge scores. According to Ayas & Yaseen (2021), there was a strong association between age groups, educational attainment, and knowledge levels.

According to the results of the current study, there was a statistically significant difference between the family incomes of the examined women and their overall attitudes about infant screening and early intervention for hearing loss. There were no additional statistically significant connections found. According to researchers, this may be because parents can conduct all necessary research for their children when their income is large and sufficient.

This finding was consistent with Wong et al (2019) 's finding that age, occupation, and education level did not substantially affect attitude score in their study on "Knowledge and Attitude on Childhood Hearing Loss Among Mothers and Mothers-to-Be in Urban and Rural Areas in Malaysia." Moreover, Elbeltagya et al. (2019) reported

that there was no statistically significant correlation between attitude and socio-demographic variables in their study on "Hearing loss-related information and attitude toward prenatal hearing screening among Egyptian parents."

CONCLUSION

The study's findings revealed that there was no correlation between the mothers' attitudes toward hearing loss and their overall knowledge of hearing loss, and that more than half of the moms who took part in the study had a fair comprehension of hearing loss overall.

RECOMMENDATIONS

In the light of the results of the present study, the following recommendations are suggested:

- Provide educational programs for all mothers and pregnant women to upgrade their knowledge and changing their attitude regarding hearing loss.
- Ensure prevent infection that can lead to hearing loss during Immunization coverage
- Publishing a brochure about children hearing loss and its risk factors in hospitals, primary health care centers, schools, and universities.
- Adopt the national newborn hearing screening program in order to identify infant hearing loss early and improve outcomes. Screening, diagnosis, intervention, and follow-up are all included in what is seen as a thorough and coordinated approach.
- Further investigation is also needed to assess parents' perceptions and knowledge of infant hearing loss across a range of populations.
- Assesse effect of educational program for pregnant women about early detection hearing loss on the mothers practices and attitude.

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معلومات واتجاهات الأمهات تجاه الاكتشاف المبكر لفقد السمع لدي أطفالهن الرضع بمدينة بورسعيد

يسرا طارق السيد شحاتة^١، فاطمة الإمام حافظ^٢، ماجدة علي محمد^٣، فاطمة محمد السويركي^٤

بكالوريوس تمريض^١، أستاذ مساعد تمريض صحة الأسرة والمجتمع كلية التمريض جامعة المنصورة مصر^٢،
أستاذ مساعد تمريض صحة الأسرة والمجتمع كلية التمريض جامعة بورسعيد مصر^٣، محاضر تمريض صحة
الأسرة والمجتمع كلية التمريض جامعة بورسعيد مصر^٤.

الخلاصة

المقدمة: معرفة الأمهات ومواقفهن حول ضعف السمع لها دور مهم في الاكتشاف المبكر والعلاج الفعال لضعف سمع الأطفال. الهدف: تقييم هذه الدراسة معرفة الأمهات وموقفهن من الاكتشاف المبكر لضعف سمع أطفالهن في بورسعيد. عينات الدراسة: تصميم وصفي للمقطع العرضي. الإعداد: أجريت هذه الدراسة في عيادات الأطفال وغرف التطعيم في مرافق الرعاية الصحية الأولية التابعة لهيئة الرعاية الصحية المصرية في بورسعيد. الموضوعات: عينة غير احتمالية، هادفة من ٢٧٩ أم. الأدوات: تم جمع البيانات باستخدام المقابلات المنظمة ومواقف الأمهات من اختبار سمع الرضع والتدخل المبكر. النتائج: بمتوسط انحراف معياري ٣٢.٢٢ ٧.٤٩ ٤٩.١٪ لديهم معرفة عامة عادلة لأسباب وتأثيرات فقدان السمع. أعرب ٥٣.٣٪ من المستجيبين عن موقف سلبي تجاه موضوع ضعف السمع، بينما اعترف ٧٠.٦٪ بقيمة الاكتشاف المبكر لفقدان السمع. لم تكن هناك علاقة ذات دلالة إحصائية بين آراء الأمهات تجاه فحص الرضع والتدخل المبكر لفقدان السمع ومعرفتهم بفحص فقدان السمع. الخلاصة: بشكل عام، كان لدى أكثر من نصف المشاركين من الأمهات في الدراسة إدراك عادل لفقدان السمع، بينما كان لدى ثلثي المشاركين تقريباً موقفاً جيداً تجاهه. ومع ذلك، لم تكن معرفة الأمهات بفقدان السمع مرتبطة بمواقفهن العامة. التوصيات: يجب أن يؤخذ في الاعتبار إنشاء حملات توعية عامة من أجل تغيير تصورات الآباء والمواقف حول فقدان سمع الرضيع بالإضافة إلى فحص الأطفال حديثي الولادة ورعايتهم.

الكلمات المرشدة: الموقف، فقدان السمع، المعرفة