

RESEARCH ARTICLE

## Mothers' Knowledge about Prevention of Sudden Infant Death Syndrome in Holy Karbala City

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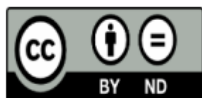
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### ABSTRACT

*The worst experience is probably the unexpected and unexplained death of a healthy infant. A child's death is the most painful experience for parents. Unexpected infant deaths are caused by a Sudden Infant Death Syndrome (SIDS) is a strange condition. The study's goal of evaluating moms' awareness of prevention of SIDS in Holy Karbala City and to find if there is the relation ship between the mothers' knowledge regarding prevention of SIDS with demographic variables. There is a descriptive study conducted at primary health care centers in Holy Karbala City for the period of 26th September 2022 to 28th May 2023. Nonprobability (convenience) sample of 300mothers. A pilot study is used to assess the questionnaire's reliability, and a panel of experts is used to determine the questionnaire's content validity consisted from (18) experts. Collected the data by use questionnaire and data were analyzed and interpreted through use application of Statistical Package for Social Sciences (SPSS), version 26. The study findings indicate that mothers had fair level of knowledge about SIDS prevention and their is a highly significant correlation between mothers' knowledge with their level of education, occupational status, smoking status. Extensive health educational program should be implemented to raising knowledge and awareness among the public of the prevention of SIDS; It can be delivered through primary health care centers staff, mass media, and booklets.*

**Key Words:** Knowledge, Mothers, Sudden Infant Death Syndrome



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## Introduction

The main cause leading to the infant mortality in the age range of 1 to 12 months, SIDS is still a serious concern. The third most common reason for infant deaths is SIDS Worldwide, about 1600 deaths were due to SIDS (43%), About 900 to accidental suffocation, strangulation in bed (25%), and 1200 to unknown causes (32%) (CDCP, 2018). A population's rate of infant mortality can be detected by measuring how many infants die for every 1,000 live births (Jang & Lee, 2022). The infants under one year old dies suddenly and unexplainedly. This condition is known as SIDS, also referred to as cot death or crib death. More often in boys than in girls, it typically happens when they are sleeping. Often known as a "diagnosis of exclusion", SIDS is identified only after all other potential reasons of death, such as asphyxia, infection, or other disorders, have been ruled out (Soliman et al., 2022). The prevention of SIDS depends on early intervention. However, the inability to access fetal, neonatal, and tissues of infant and in vivo measurements hampers clinical investigations (Ho et al., 2022). A complete autopsy including additional testing, assessment of the death stages, and clinical history reviewer are all required for the diagnosis of SIDS, which is the unexpected and sudden, of healthy infant death of an apparently under the age of one (Keywan et al., 2021). The American Academy of Pediatrics (AAP) has provided recommended for a safe sleep environment to lower avoidable infant deaths as a result of unsafe sleep environments. Supine sleeping is recommended, as is using a hard surface for sleeping, avoiding soft objects in the cradle, and not sharing a bed with the baby. It was determined that the campaign for a safe sleeping environment that promoted the supine sleeping position significantly decrease SIDS-induced infant mortality (Yildiz, 2021).

## Methodology

**Study Design:** A descriptive study (cross-sectional) was conducted from the period 26th September 2022 to 28th May 2023. The study was carried out in the primary healthcare centers (PHCCs) in Holy Karbala City in Iraq, to assess mothers' knowledge about prevention of SIDS. **Study Sample:** A nonprobability (convenience) sample of (300) mothers of children who attend PHCCs was chosen as a percentage (10%) from the average of a (3) prior monthly visits by mothers to the immunization units. The study conducted in sectors of primary health care in

Holy Karbala City which including (Central Sector and Al-Hur Sector). A total of (5) main PHCCs distributed in Holy Karbala City was selected as 20% from each sectors (Central Sector account (14) PHCCs, and Al-Hur Sector account (8) PHCCs and randomly selected for the purpose of the study. From Central Sector (Bab Baghdad, Abbasia Algharbia, and Al-Eskan) PHCCs has been chosen; Also from Al-Hur Sector (Al-Hur and Al-Yarmouk) PHCCs was chosen. **Administrative Arrangements:** Protocol of study and official permission was taken from the College of Nursing/ University of Karbala to conducted the study. The College of Nursing's Ethics Committee assessed the study tools (questionnaire) and agreed to proceed with the study after receiving the title and the questionnaire. Also taking agreement from mother's during interview. **The Study Instrument:** A questionnaire was constructed by investigator for the purpose of the study. The questionnaire is based on the extensive review of related literature and previous studies (Ali Gamal El-deen et al., 2021; Elwasefy et al., 2019) in addition to the investigator experiences. A questionnaire format was including two parts, first is sociodemographic characteristics of the mothers (age, number of children, residency, level of education, occupation status, smoking status, and socioeconomic status) whereas the second part mothers knowledge about SIDS include three sections First: This section include (9) items to assess general knowledge of mothers about SIDS. Second: This section include (10) items to assess knowledge of mothers about risk factors for SIDS. Third: This section include (8) items to assess knowledge of mothers about prevention of SIDS. **Validity of the Current Study:** To make the instrument of research more valid, it was currented to a panel of (18) experts in the different fields related to the study title. These specialists were requested to evaluate the study's instrumentation. **Reliability of the study:** Cronbach's Alpha coefficients were used to test reliability of the current study instrument. The result of the test showed acceptable (0.829). **Data collection:** Data were obtained through face to face interview and questionnaire format techniques as method of data collection; the questionnaire format was filled in by the mothers personally with some clarification in the event that some paragraphs were ambiguous. The period from (10th January to the 12th February, 2023), interview was conducted with mothers who were attended to the primary health care centers in Holy Karbala City to fill in

the moms' acceptance to participate in the interview and the primary health care sector's approval before the researcher explains the study's objective simply before distributing the questionnaire. Mothers who are unable to read and write the questionnaire format were filled out

## Results:

Table (1): Distribution of mothers' sociodemographic features

List	Characteristics	F	%	
1	Age M±SD= 30 ± 6.8	≤ 19 year	15	5
		From 20 – 29 year	<b>132</b>	<b>44</b>
		From 30 – 39 year	122	40.7
		40 and more	31	10.3
		<b>Total</b>	<b>300</b>	<b>100</b>
2	Number of children	1 – 3	<b>225</b>	<b>75</b>
		4 – 6	72	24
		7 ≤	3	1
		<b>Total</b>	<b>300</b>	<b>100</b>
3	Residency	Urban	<b>259</b>	<b>86.3</b>
		Rural	41	13.7
		<b>Total</b>	<b>300</b>	<b>100</b>
4	Level of education	Doesn't read & write	15	5
		Read & write	21	7
		Primary school	61	20.3
		Secondary school	46	15.3
		Diploma degree	<b>80</b>	<b>26.7</b>
		Bachelor degree	69	23
		Postgraduate	8	2.7
<b>Total</b>	<b>300</b>	<b>100</b>		
5	Occupation status	Housewife	<b>155</b>	<b>51.7</b>
		Student	5	1.7
		Employee	140	46.7
		<b>Total</b>	<b>300</b>	<b>100</b>
6	Smoking parent	Not smoking	<b>178</b>	<b>59.4</b>
		Father	121	40.3
		Mother	1	0.3
		Both	0	0
		<b>Total</b>	<b>300</b>	<b>100</b>
7	Socioeconomic status (Iraqi Dinar)	Less than 300000	46	15.3
		300000 – 600000	84	28
		601000 – 900000	83	27.7
		More than 900000	<b>87</b>	<b>29</b>
		<b>Total</b>	<b>300</b>	<b>100</b>

%, Percentage, f: Frequency, SD: Standard deviation, M: Mean

The table (1) shows that the distributions of the mothers according to their demographic data. The mothers age highest percentage was (44%) for age group (20-29) years and lowest percent (5%) for age group (≤ 19) years. The number of children of participant mothers' was from (1–3) recurrented (75%). Regarding residency, the the greater number of study sample reported they were from urban area recurrented (86.3%), while other

by the researcher under the supervision of the mother. Data Analysis: The data were analyzed and interpreted through use of the application of Statistical Package for Social Sciences (SPSS), version 26.

participants from rural recurrented only (13.7%). Concerning the level of education for mothers, analysis of data pointed out that high percentage indicates that mothers graduated with (diploma degree) recurrented (26.7%). In relation to the mothers occupational status reveals that more than half of mothers were housewives recurrented (51.7%), and other of participant mothers' were governmental employee. About smoking status,

the current study shows that (59.4%) of parents weren't smoking, and only (40.3%) of study sample reported that their husbands were

smoking. Regarding family socioeconomic status, the highest percentage of study sample were sufficient.

Table (2): Overall assessment the knowledge of mothers about prevention of SIDS

Knowledge	F	%	M	SD	Assessment
Poor	14	4.7	17.71	4.612	Fair
Fair	156	52			
Good	130	43.3			
<b>Total</b>	<b>300</b>	<b>100</b>			

f: Frequency, %: Percentage. SD: Standard Deviation for total score, M: Mean for total score

Poor= 0 – 9, Fair= 9.1 – 18, Good= 18.1 – 27

This table indicates that more than half of mothers (52%) of them and (43.3%) of them show good show fair level of knowledge as reported among level of knowledge (M±SD= 17.71 ± 4.612).

Table (3): Relation ships between mothers' knowledge and their age group.

Variables		Knowledge				Relation ship
		Poor	Fair	Good	Total	
Age	≤ 19 year	0	12	3	15	$r_s = .032$ <b>P-value= .576</b> <b>Sig= N.S</b>
	20 – 29 year	4	68	60	132	
	30 – 39 year	8	58	56	122	
	40 ≤ year	2	18	11	31	
	<b>Total</b>	14	156	130	300	

$r_s$ = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table displays that there is no significant regard to their age at  $p>0.05$ . relation ship between mothers' knowledge with

Table (4): Relation ships among knowledge of mothers with regard to number of children

Variables		Knowledge				Relation ship
		Poor	Fair	Good	Total	
Number of children	1 – 3	9	118	98	225	$r_s = .056$ <b>P = .338</b> <b>Sig= N.S</b>
	4 – 6	5	37	30	72	
	7 ≤	0	1	2	3	
	<b>Total</b>	14	156	130	300	

$r_s$ = Spearman correlation coefficient, Sig= Significance, P= Probability, S= Significant, H.S= High significant, N.S= Not significant

This table depicts that there is no significant regard to number of children in familyat  $p>0.05$ . relation ship between mothers' knowledge with

**Table (5): Relation ships among knowledge of mothers with their residency**

Variables		Knowledge				Relation ship
		Poor	Fair	Good	Total	
Residency	Urban	11	137	111	259	$r_{pb} = .023$ $P = .687$ Sig= N.S
	Rural	3	19	19	41	
	<b>Total</b>	14	156	130	300	

$r_s$ = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table manifests that there is no significant relation ship has found between mothers’ knowledge with regard to their residencyat  $p > 0.05$ .

**Table (6): Relation ships among mothers’ knowledge with regard to their level of education**

Variables		Knowledge				Relation ship
		Poor	Fair	Good	Total	
Level of education	Doesn’t read & write	6	4	5	15	$r_s = .301$ $P\text{-value} = .001$ Sig= H.S
	Read & write	1	13	7	21	
	Primary school	2	40	19	61	
	Secondary school	3	29	14	46	
	Diploma degree	2	35	43	80	
	Bachelor degree	0	32	37	69	
	Postgraduate	0	3	5	8	
	<b>Total</b>	14	156	130	300	

$r_s$ = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table shows that there is high significant relation ship (strongly positive) between mothers’ knowledge and their level of education at  $p = 0.001$ .

**Table (7): Relation ships among mothers’ knowledge with regard to their occupation**

Variables		Knowledge				Relation ship
		Poor	Fair	Good	Total	
Occupation	Housewife	12	91	52	155	$r_s = .297$ $P\text{-value} = .001$ Sig= H.S
	Student	0	3	2	5	
	Employee	2	62	76	140	
	<b>Total</b>	14	156	130	300	

$r_s$ = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table indicates that there is high significant relation ship (strongly positive) between mothers’ knowledge and their occupational status at  $p = 0.001$ .

**Table (8): Relation ships among mothers' knowledge with regard to smoking status**

Variables		Knowledge				Relation ship
		Poor	Fair	Good	Total	
Smoking parent	Not smoking	6	85	87	178	$r_s = -.130$ <b>P-value= .024</b> <b>Sig= S</b>
	Father	8	70	43	121	
	Mother	0	1	0	1	
	<b>Total</b>	14	156	130	300	

$r_s$ = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table reveals that there is a significant knowledge with regard to smoking status at relation ship (positive) between mothers' p=0.024.

**Table (9): Relation ships among mothers' knowledge with their socioeconomic status**

Variables		Knowledge				Relation ship
		Poor	Fair	Good	Total	
Socioeconomic status (Iraqi Dinar)	Less than 300000	5	25	16	46	$r_s = .010$ <b>P-value= .864</b> <b>Sig= N.S</b>
	300000 – 600000	3	38	43	84	
	601000 – 900000	4	42	37	83	
	More than 900000	2	51	34	87	
	<b>Total</b>	14	156	130	300	

$r_s$ = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table depicts that there is a non significant knowledge with regard to their socioeconomic relation ship has found between mothers' status.

**Discussion:** The result of the current study mentioned that the vast the greater number of mothers were accounted at the second and third age groups (20–29), and (30–39) years, recurrented (44%), and (40.7%) respectively. The current findings agree with a study reported by (Ibrahim et al., 2023) which founded that more than one-third of the mothers were aged from (25-29) and (30-35) years respectively. Regarding the number of children, current study showed that about (225) of study sample had between (1-3) children recurrented (75%). This result is consistent with a study done by (Okpere & Opara,

2014) which showed that the the greater number of the study sample had between (1-3) children recurrented (88.7%). Concerning residency, the the greater number of study sample reported they were from urban area recurrented (86.3%), This result similar with study done by (Algwaiz et al., 2021) which reported that the the greater number of study sample life in urban areas, recurrented (89.7%) and only (10.3%) from study sample were living in a rural area. Also the current study findings disagree with study conducted by (Elsobkey,2018) which reported that more than half of them life in rural residence. The outcomes

of this current study that concerning with the level of educational, the the greater numberity of mothers graduated with “diploma degree” recurrented (26.7%) of participants. The study findings agree with a study conducted by (Isezuo et al., 2017) which revealed that the the greater numberity of mothers with diploma recurrented (28.8%). Regarding the occupational status of participants, the study found that the more than half of study sample were housewife recurrented (51.7%). The result of the current study consistent with the study conducted by (Ali Gamal El-deen et al., 2021) they mentioned that more than half of the mothers didn't work. In regard with smoking result showed that the greater numberity study sample are not smoking recurrented (59.4%). The finding of current study supports the previous study done by (Algwaiz et al., 2021). Which reported that Which reported that 176 (26.4%) of the households had a father who smoked, nine (1.3%) had a mother who smoked, 19 (2.8%) had both parents who smoked, and 463 (69.4%) had no smoking parents. The result of the current study that concerning with the regarding, family socioeconomic status the highest percentage of study sample, recurrented (29%) were sufficient. The current study findings agreement with a study reported by (Alzubaidiet al., 2022) monthly income from the point of view sample were sufficient. The current study findings have indicated that the overall assessment of mothers' knowledge about prevention of SIDS more than half of mothers show fair level of knowledge recurrented (52%) of them and also shows that good level of knowledge recurrented (43.3%) of them ( $M \pm SD = 17.71 \pm 4.612$ ). The current study findings consistent with the study reported by (Qasim and Alrabaty, 2017) which revealed that the greater numberity of mothers had

no knowledge about SIDS (14%) heard or know about SIDS. In the current study shows there is no significant relation ship between mothers' knowledge with regard to their age. The current study findings agree with the study reported by (Qasim and Alrabaty, 2017) which results that there is a non-significant relation ship between knowledge about SIDS with mother's age at ( $p=0.457$ ). The result of the current study depicts that there is no significant relation ship between mothers' knowledge with regard to number of children in family. The current study inconsistent with a study reported by (Ibrahim et al., 2023) which results that there was a strong correlation between the number of children and their total knowledge score pre and post educational program implementation. The outcomes of the current research indicate that there is a non-significant relation ship between mothers' knowledge with regard to their residency. The current study findings supporting with the study reported by (Qasim and Alrabaty, 2017) which mentions that there is a non-significant relation ship between knowledge about SIDS with residency ( $p=0.544$ ). The results of the current study indicate that there is a high significant relation ship (strongly positive) between mothers' knowledge and their level of education at ( $p=0.001$ ). The results of the current study similar to results conducted by (Antony and Saldanha, 2022) they mentioned that there was a significant relation ship between mothers' knowledge and the level of education at ( $p=0.001$ ). The current study's findings revealed that there is a high significant relation ship (strongly positive) between mothers' knowledge and their occupational status at  $p=0.001$ . These results are consistent with study conducted by (Antony and Saldanha, 2022) showed that a significant relation ship between mothers' knowledge and occupation statues at ( $p=0.001$ ).

The findings of this study showed that there is significant relation ship (positive) between knowledge of mothers with regard to smoking status at  $p=0.024$ . The results are not consistent with study reported by (Algwaiz et al., 2021) showed that not significantly associated smoking status with knowledge level toward SIDS. Findings demonstrated that there is a non-significant relation ship between mothers' knowledge with regard to their socioeconomic status. The current study findings agree with the study reported by (Qasim and Alrabaty, 2017) which finds that there is a non-significant relation ship between knowledge about SIDS with socioeconomic status at ( $p=0.733$ ). Furthermore, the result of current study is not consistent with the study represented by with (Antony and Saldanha, 2022) which mentioned that there is a significant relation ship between knowledge of mother and family income at ( $p=0.001$ ).

**Conclusions:** The study concludes that mothers had fair level of knowledge about SIDS prevention, there is a no-significant relation ship between knowledge of mothers and their socio-demographic findings such as (age, number of children, residency, and socioeconomic status). Also there is a significant relation ship between knowledge of mothers and their sociodemographic characteristics such as (level of education, occupation, and smoking).

**Recommendations:** Extensive health educational program should be implemented to increasing the public knowledge and awareness of the prevention of SIDS; it can be delivered through mass media, booklets, and primary health care centers staff. And in neonatal intensive care unit (NICUs), nurses must follow to safe sleep recommendations, particularly the supine position, as they are role models for parents after discharge. They should also give information to

the mothers about RDIS during the antenatal period and after delivery, especially young and inexperienced mothers.

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