

## Title Page

### Title:

# **Knowledge of Syrian refugee mothers and their attitude towards Covid-19 disease in children and pregnant women**

### Running title:

Understand the concepts of COVID-19

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# **Knowledge of Syrian refugee mothers and their attitude towards Covid-19 disease in children and pregnant women**

## **Abstract**

**Objectives:** To explore Knowledge and perceptions about COVID-19, among Syrian refugee mothers in Irbid governorate, the first outbreak of coronavirus in Jordan.

**Methods:** This is an exploratory cross-section study was conducted among Syrian refugee mothers, who were currently pregnant or have a newborn child. The data collected through an online survey in April 2020 in North Jordan.

**Results:** A total of 389 Syrian refugee mothers have participated in the study. The study showed that 66% of mothers often access information regarding COVID-19. The main used resources for information, were Facebook pages' posters (87%), WhatsApp groups' messages (69%), Television News (53%). While 21% indicated that they access a professional database or governmental websites. In general, Syrian refugee mothers appear well knowledgeable about COVID-19 the transition ways and prevention measures, and aspects that should be considered when diagnosing Coronavirus cases. However, they appeared to have a lack of knowledge about the aspects that should be considered for the transition of COVID-19 between the mother and the child and the concepts about the smoking risks associated with COVID-19.

**Conclusions:** There is less focusing on media on aspects or still less understudying of concepts about the smoking risks associated with COVID-19 and concepts around the transition of COVID-19 between the mother and the child. Providing health education regarding COVID-19 to mothers in Irbid would be helpful.

**Keywords:** *Social Media; Corona, Smoking, Infection control*

What's already known about this topic?

In Jordan, Irbid Governorate was the first outbreak of COVID-19 in the country. Only one case was reported in Jordan in early March, and by April 10, the number of confirmed cases had increased rapidly. There is not enough information known about the mother's knowledge and attitudes towards this new epidemic.

What does this article add?

This study highlights the knowledge and trends of mothers about the emerging corona epidemic, and it is the first of its kind that studies the Syrian refugee class and targets the first areas of the epidemic in Jordan.

## **Knowledge of Syrian refugee mothers and their attitude towards Covid-19 disease in children and pregnant women**

### **1- INTRODUCTION**

The Corona Virus Pandemic 2019-2020 is a continuous epidemic of Coronavirus 2019 (COVID-19) disease caused by severe acute respiratory syndrome 2 (SARS-CoV-2). [1] The outbreak was identified in Wuhan, China, in December 2019, it was declared a public health emergency of international concern on January 30, 2020, and recognized by the WHO as a pandemic on March 11, 2020. [1]

In Jordan, Irbid Governorate was the first outbreak of the COVID-19 in the country [2]. Only one case was reported in Jordan in early March, and by April 10, the number of confirmed cases rapidly increased in Irbid. [2] The country has been closed since March 14, and the city of Irbid, where the outbreak occurred, has been isolated from the rest of the country to control the disease. More than 300,000 (50%) of the Syrian refugees live in the governorates of northern Jordan (the governorates of

Mafraq and Irbid) located on the northern border between Jordan and Syria. There is not enough information known about mother's knowledge and attitudes toward this newly outbreak epidemic.

The World Health Organization (2020) says almost one in five people have a serious illness and has difficulty breathing [3]. The American Centers for Disease Control and Prevention lists emergency symptoms like difficulty breathing, persistent chest pain or pressure, sudden confusion, difficulty awakening, or bluish face or lips; immediate medical attention is recommended if they are These symptoms are present. [4] It is important to investigate the early and late symptoms of COVID-19 to manage the case and provide effective medical support.

The World Health Organization recommends that mothers suspected or confirmed to be COVID-19 to initiate or continue breastfeeding. Mothers should be advised that the benefits of breastfeeding significantly outweigh the potential risks of transmission of the disease. Mother and infant should be enabled to stay together during the day and night stay and practice skin-to-skin contact, including caring for a kangaroo mother, especially immediately after birth and during breastfeeding, whether they suspect they or their children or have confirmed COVID-19. [3, 5] The World Health Organization (2020) concluded that, at present, data are insufficient to conclude the vertical transmission of COVID-19 through breastfeeding [5]; *“Based on available evidence, WHO recommendations on the initiation and continued breastfeeding of infants and young children also apply to mothers with suspected or confirmed COVID-19”*. [5]

The latest available evidence indicates that smoking is associated with increased illness and death severity in hospitalized COVID-19 patients. Although potentially associated with severity, there is no evidence of identifying risks for smokers entering the hospital with COVID-19 or SARS-CoV-2

infection in the peer-reviewed literature. Population studies are needed to address these questions. [6] Furthermore, relevant WHO recommendations were considering the established damage associated with tobacco use and exposure to second-hand smoke; The World Health Organization recommends tobacco users to stop using tobacco. Proven interventions to help users stop smoking include free lines, mobile text-stop programs, nicotine replacement treatments and other approved medications. [6]

Coronavirus-19 is an epidemic that spreads whole the world. Knowledge about coronavirus and attitudes towards spreading and prevention methods can affect measures taken to manage this infectious disease. Support and understanding of the population to identify the educational needs, their knowledge, attitudes, and practices for Coronavirus-19 should be assessed. Mothers are a very important component of any society because they are connected with all family members, and they are supposed to be aware of risks. Where the mother takes care of the home and her children.

### **Study significance**

This study is the first of its kind in Jordan, exploring Syrian refugee mothers' Knowledge, attitudes and perceptions regarding the Pandemic of COVID-19 in Irbid governorate, the first outbreak of coronavirus in Jordan. The study also provides important baseline information would be useful in implementing such awareness initiatives, through support the understanding of the population to identify the educational needs, their knowledge, attitudes, and practices for Coronavirus-19 should be assessed.

### **Study Objectives**

The objective of this study is to assess knowledge and attitudes among Syrian refugee mothers in Jordan about coronavirus-19, to identify their educational needs for construction an appropriate education package.

The survey is targeted Syrian refugee mothers in Jordan and assessed their attitudes and knowledge regarding Coronavirus-19 prevention techniques, and their beliefs of dealing with their children at this crisis, to save them from getting infected.

## **2- METHODS**

### **2-1 study design, setting, and population**

This is an exploratory cross-section study for Syrian refugee mothers, who were currently pregnant or have a newborn child, in Irbid governorate in North Jordan. Data collected during April 2020.

### **2-2 Study Tool**

#### **Survey**

The questionnaire consisted of demographical information, knowledge section and attitude section. The questionnaire was developed depending on the main information published by the World Health Organization. [3, 5, 6, 7] The questionnaire was evaluated for readability and clarity by expertise team. The survey link was distributed in April 2020, through Facebook pages and WhatsApp groups. The contact information was gained by the community centers and the nonprofit organizations.

### **2-2 Ethical consideration**

The study was approved by the Human Research Ethics Committee at the Jordan University of Science and Technology. The survey was conducted according to guidelines on security and

confidentiality, no identification or confidential information was collected. The participation in this survey, it's upon participants' agreements to access the survey through this link.

## **2-4 Data analysis**

Data were analysed using SPSS software. A descriptive statistical analysis was performed to produce the frequencies and percentages for data.

## **3- RESULTS**

A total of 389 Syrian refugee mothers from Irbid governorate have completed the survey. Eighty-four per cent were aged between 20-45 years. The majority, having at least a diploma (71%). Eighty-two per cent of them have at least one child aged less than six years at home. There were 21% are currently pregnant and another 11% per cent plan to get pregnant in the recent future.

The study investigated the knowledge level among housewives about COVID-19. This including the transition ways and prevention measures. The questionnaire assessed knowledge of prevention measures that should be taken when going outside the home, and the procedures that should be taken when returning home. The study also explores the awareness about the aspects that should be considered when diagnosing Coronavirus cases. (Table-1)

High per cent (77%) of the mothers considered that COVID-19 could be transmitted by sneezing, and (80%) of mothers believed that shaking hands could be a transitional way for COVID-19. While only (27%) of mothers answered touching a contaminated surface is a way for transitioning the infection as well, (17%) of the mothers' answers were about dealing with animals as a way for COVID-19 transitioning. (Table-1)

As shown in (Table-1), the mothers indicated the prevention measures that should be taken when going outside the home; when returning. For the prevention measures that should be taken when going outside the home including the mother indicated that Avoid leaving the home unless necessary (92%). Wear gloves and masks when leaving the house (92%). Keep a safe distance between people (83%). Avoid gatherings (80%), Avoid handshaking (80%) or talking directly to people (80%). The mothers also indicated the procedures that should be taken when returning home; as Takeoff shoes outside the home (87%). Never touch anything beforehand sanitizing (88%). Disposal of the outer bags for purchases (81%). Wash vegetables and fruits with soap and water (71%). Wash hands with soap and water for 30 seconds (77%). Take off the clothes and wash them separately (80%).

Furthermore, the mothers also asked to indicate the aspects that should be considered when diagnosing a Coronavirus including, connecting with one of the infected (58%); travelling to one of the places of the great spread (75%); the emergence of symptoms of pneumonia (83%); or having a fever (86%). (Table-1)



<b>Table-1: Knowledge about COVID-19</b>		<b>Total Correct response</b>	
<b>Transition way</b>		<b>Per cent</b>	<b>Count</b>
-	Sneezing	77%	299
-	Hand Shaking	80%	312
-	Surface Touching	27%	104
-	Dealing with animals	17%	65
<b>What prevention measures should be taken when outside the home?</b>			
-	Avoid leaving the home unless necessary	92%	356
-	Wear gloves and masks when leaving the house	92%	358
-	Keep a safe distance between people	83%	324
-	Avoid gatherings	80%	311
-	Avoid handshaking and talking directly to people	80%	311
<b>What are the procedures that should be taken when returning home?</b>			
-	Take off shoes outside the home	87%	339
-	Never touch anything beforehand sanitizing	88%	343
-	Disposal of the outer bags for purchases	81%	315
-	Wash vegetables and fruits with soap and water	71%	276
-	Wash hands with soap and water for 30 seconds	77%	300
-	Take off the clothes and wash them separately	80%	311
<b>What are the aspects that should be considered when diagnosing a Coronavirus?</b>			
-	Connecting with one of the infected	58%	226
-	Travelling to one of the places of the great spread	75%	292
-	The emergence of symptoms of pneumonia	83%	324
-	Having Fever	86%	337

The study also explores the awareness about the aspects that should be considered for the transition of COVID-19 between the mother and the child. As shown in (Table-2); Sixty-five per cent believed that a pregnant woman is more susceptible to infection with COVID-19. Twenty-nine per cent believed that the COVID-19 virus is transmitted from the pregnant mother to her fetus through the blood. Thirty-three believed that the COVID-19 virus is transmitted from the mother to her child through breastfeeding. Sixty per cent believed that the infected mother can transmit the COVID-19 virus to her child through respiratory drops while breastfeeding.

<b>Table-2: Perception about the transition of COVID-19 between the mother and the child, N= 389</b>		
	<b>Per cent</b>	<b>Count</b>
Do you think that a pregnant woman is more susceptible to infection with COVID-19?		
- <b>Yes</b>	<b>65%</b>	<b>253</b>
- <b>No</b>	<b>16%</b>	<b>62</b>
- <b>Do not know</b>	<b>19%</b>	<b>74</b>
Do you think that the COVID-19 virus is transmitted from the pregnant mother to her fetus through the blood?		
- <b>Yes</b>	<b>29%</b>	<b>113</b>
- <b>No</b>	<b>43%</b>	<b>167</b>
- <b>Do not know</b>	<b>28%</b>	<b>109</b>
Do you think that the COVID-19 virus is transmitted from the mother to her child through breastfeeding?		
- <b>Yes</b>	<b>33%</b>	<b>128</b>
- <b>No</b>	<b>28%</b>	<b>109</b>
- <b>Do not know</b>	<b>39%</b>	<b>152</b>
Do you think that the infected mother can transmit the COVID-19 virus through respiratory drops while breastfeeding?		
- <b>Yes</b>	<b>60%</b>	<b>234</b>
- <b>No</b>	<b>23%</b>	<b>90</b>

-	<b>Do not know</b>	<b>17%</b>	<b>65</b>
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Furthermore, the study explored the awareness about the aspects associated with smoking that should be considered for the transition of COVID-19. As shown in (Table-3); Sixty per cent believed that smokers are more susceptible to infection with COVID-19. Thirty-one per cent believed that exposing to passive smoking is transmitted to the COVID-19 virus. While Twenty-eight per cent believed that they think that Argilah smoking could transmit COVID-19 virus.

<b>Table-3: Perception about the transition of COVID-19 and smoking, N= 389</b>		
	<b>Per cent</b>	<b>Count</b>
Do you think that smokers are more susceptible to infection with COVID-19?		
- <b>Yes</b>	<b>60%</b>	<b>233</b>
- <b>No</b>	<b>20%</b>	<b>78</b>
- <b>Do not know</b>	<b>20%</b>	<b>78</b>
Do you think that exposing to passive smoking is transmitted to the COVID-19 virus?		
- <b>Yes</b>	<b>31%</b>	<b>121</b>
- <b>No</b>	<b>40%</b>	<b>156</b>
- <b>Do not know</b>	<b>29%</b>	<b>112</b>
Do you think that Argilah smoking could transmit COVID-19 virus?		
- <b>Yes</b>	<b>28%</b>	<b>109</b>
- <b>No</b>	<b>53%</b>	<b>206</b>
- <b>Do not know</b>	<b>19%</b>	<b>74</b>

Finally, the study investigated housewives' often access information about COVID-19, Sixty-six per cent indicated that they access information most often, (18%) sometimes access information and 16% are rarely access information regarding COVID-19.

Exploring the main source they access for the information about COVID-19, the main resource for information the housewives used is Facebook pages (87%). The second main common resource was via WhatsApp groups' messages (69%). The third indicated resource was Television News (53%). While 21% indicated that they access a professional database or governmental websites.

#### **4- DISCUSSION**

The emergence of COVID-19 hotspots in China has sensed the whole world in danger, including Jordan, from its early stage. This started with the evacuation of hundreds of Jordanians from China to Jordan during emergency flights. Irbid governorate was a high spot, the first outbreak of coronavirus in Jordan. The largest spread of COVID-19 was at the wedding celebration. [2] Knowledge and attitudes among the population towards infectious diseases are important in attempts to prevent the spread of the disease. [8] Mothers are a very important component of any society because they are connected with all family members, and they are supposed to be aware of risks. For this purpose, this study was targeted mothers in the Irbid governorate, in northern Jordan. Zhong et al., (2020) has been reported that adequate knowledge and positive awareness are linked to an appropriate practice in terms of infection protection. [9] Three issues around COVID-19 were discussed in this study; Knowledge level about the transition ways and prevention measures, the aspects that should be considered for the transition of COVID-19 between the mother and the child and the awareness about the aspects associated with smoking that should be considered for the transition of COVID-19.

The study revealed that the mothers have average knowledge about some concepts around the transition of COVID-19 virus. More than two-thirds (77%) of the mothers have been able to identify that COVID-19 could be transmitted by sneezing, and a high proportion (80%) of

mothers believed that shaking hands could be a cause of infection for COVID-19. While only around one-quarter (27%) of mothers abled to indicate that touching a surface could be a transitional way for COVID-19 and, (17%) of the mothers 'answers were about dealing with animals as a way for infection transition. Furthermore, the mothers also could indicate the most aspects that should be considered when diagnosing a Coronavirus including, connecting with one of the infected (58%); travelling to one of the places of the great spread (75%); the emergence of symptoms of pneumonia (83%); or having a fever (86%).

The study has also investigated the awareness of the mothers about the most important recommendations that should be considered when leaving home and returning. The mothers' answers showed a high level of awareness, as a high proportion of mothers has indicated the prevention measures that should be taken when outside the home. Almost the majority of the mothers (92%) indicated that should be avoid leaving the home unless necessary, and thought that we should wear gloves and masks when leaving the house (92%). A high proportion of the mothers also noted the importance of keeping a safe distance between people (83%), avoid gatherings (80%), avoid handshaking and avoid talking directly to people (80%). The mothers also realized the procedures that should be taken when returning home; including takeoff shoes outside the home (87%), never touch anything beforehand sanitizing (88%), as well as disposal of the outer bags for purchases (81%), and wash vegetables and fruits with soap and water (71%). The important aspects to prevent transition the COVID-19 have been indicated, washing hands with soap and water for 30 seconds (77%), and taking off the clothes and wash them separately (80%).

There is limited evidence of vertical transmission, prevalence, and characteristics of COVID-19 during pregnancy, childbirth, and the postpartum period. Currently, there is no evidence of an intrauterine vertical transmission from COVID-19 from infected mothers to their fetuses. [10] However, infected mothers may be at increased risk for more severe respiratory complications. It is known that an infected mother can transmit the COVID-19 virus through respiratory drops while breastfeeding. [10] Thus, mothers known to known or suspected COVID-19 must adhere to standard precautions and contact during breastfeeding. [10] The answers from mothers showed that they lack knowledge about questions that clarify aspects considered for the transmission of COVID-19 between mother and child, this because of the limited information available. Almost two-thirds (65%) of the mothers were believed that a pregnant woman is more susceptible to infection with COVID-19, and less than one-third (29%) of the mothers believed that the COVID-19 virus is transmitted from the pregnant mother to her fetus through the blood. While mothers. Also, almost one-third (33%) of the mothers were believed that the COVID-19 virus could be transmitted from the mother to her child through breastfeeding. Sixty per cent believed that the infected mother can transmit the COVID-19 virus to her child through respiratory drops while breastfeeding.

Smoking is most likely associated with the negative progression of COVID-19. [11, 12] Tobacco smoking is a potential means of transmission of the virus for both active and passive smokers. [13] Smoking should be considered a risk factor for transmission of the disease to provide more evidence and measures to reduce its direct and indirect effects within the community. [13] High per cent of the mothers (60%) believed that smokers are more susceptible to infection with COVID-19. Almost one-third (31%) of the mothers believed that exposing to passive smoking is transmitted the COVID-19, and (28%) of the mothers believed that Argilah smoking could

transmit the virus. The answers from mothers showed that they lack knowledge about questions that clarify aspects considered the smoking risks associated with COVID-19, including passive smoking effect or Argileh smoking. Recent advice from the World Health Organization on the use of Arghileh, there is a need to regulate Argileh smoking to prevent COVID-19 transmission. [14, 15]

In general, mothers from Irbid governorate, the first and the largest outbreak of Coronavirus in Jordan, appeared well knowledgeable about the most common concepts associated with COVID-19, such as transmission, prevention or diagnosing [16]. This due to the information that often shared through the social media, news and governmental reports. In contrast, the answers from mothers showed lack knowledge about questions that clarify aspects considered the transmission of COVID-19 between the mother and the child and the statements around smoking impact on COVID-19 risk. Perhaps the reason is that information about this virus or how it was transmitted between the mother and the child was not yet known, and there was not yet a clear perception of the possibility of transmission between the mother and the child. There were not enough yet studies around that time, at the beginning of the epidemic, on the effect of smoking on the spread or development of the virus.

The results of this research showed the great impact on social media such as Facebook or WhatsApp to support the awareness and knowledge of mothers in Irbid governorate. Housewives were accessing information about COVID-19 very often. The use of social media has become very important for disseminating health education, [17, 18] especially in the cases which needed to guidance the mothers in the epidemics or other various health issues. Providing health

education regarding COVID-19 to mothers in Irbid would be useful in enhancing knowledge level and reducing the sharing of myths or misinformation.

### **Strength and Limitation**

This study is the first attempt at a survey on knowledge and perception toward COVID-19 among mothers in Irbid Governorate, the largest spread of COVID-19 at the beginning of the pandemic in Jordan. This study examined some important facts related to the transition ways and prevention measures of the disease. The only limitation of this study was unable to observe if any change in the knowledge of mothers, and their perceptions of COVID-19 after the survey was completed. The limitation by the time, budget and the nature of COVID-19 disease. A need for more in-depth studies in future.

## **5- CONCLUSIONS**

In general, mothers appear well knowledgeable about COVID-19 the transition ways and prevention measures, and aspects that should be considered when diagnosing Coronavirus cases. However, they appeared to have a lack of knowledge about the aspects that should be considered for the transition of COVID-19 between the mother and the child, and the aspects associated with smoking risks.

Providing health education regarding COVID-19 to mothers in Irbid would be helpful in access to more professional recourse for COVID-19 and reduce sharing myths, or wrong information.



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