Effect of Mothers' Using Smartphone on Their Quality of Life and Family Functions

Omnia Elsaied Mostafa Ahmed Naeem[1], Samia. E. Khaton [2,] Neamat Mazloum Mohamed Fahmy[3] and Eman Youssif Ali Awad [4]

[1]Demonestrator, Community Health Nursing Department, Faculty of Nursing, Tanta University, Egypt.

[2]Professor of Community Health Nursing, Community Health Nursing Department, Faculty of Nursing, Tanta University, Egypt.

[3,4]Assistant Professor of Community Health Nursing Department, Faculty of Nursing. Tanta University, Egypt.

Corresponding author: Omnia Elsaied Mostafa
Email: Omnia.naeem@nursing.tanta.edu.eg

Abstract

Background: Smartphone used widely in everyday life. However, mothers' smartphone overuse and misuse can affect on family quality of life and functions. **Aim of the study:** to assess the effect of mothers' using smartphone on their quality of life and family functions. **Design**: A descriptive cross-sectional research design. **Setting:** This study was conducted at (MCH) Centers at Tanta City. **Subjects:** A convenience sampling of 700 mothers. **Tools**: Four tools were used. **Tool (I):** Mothers' knowledge regarding smartphone use consisted two parts: **part (1):** Socio-demographic characteristics of the mothers. **Part (2):** Smartphone use knowledge questionnaire. **Tool (II):** Smartphone addiction scale (SAS). **Tool (III):** Family quality of life (FQL) scale. **Tool (IV):** Family Assessment Device (FAD) of McMaster model Family functioning. **Results:** about two-thirds (66%) of them had low level of knowledge, more than two fifth (42.3%) had moderate level of smartphone addiction and more than half (54.4%) addicting smartphone had unsatisfied FQOL, and the majority (83.1%) of them had unhealthy family functions. **Conclusion**: There was a highly statistically significant correlation between total knowledge score with total smartphone addiction scale and total family functioning score. Also, there was a statistically significant correlation between total score of family quality of life and total score of family functioning. The largest percentage of those having smartphone addiction had an unsatisfied family quality of life and unhealthy family function. **Recommendation:** continuous education programs are recommended about effect of smartphone misuse on FQOL and functions and encouraging them to find alternative such as sports, shopping, and other outdoor activities rather than smartphone use.
 Key words: Smartphone Addiction, Family Quality of Life, Family Functions.

Introduction:

Nowadays, smartphones and other mobile digital devices are essential components of modern household technology. The use of smartphones has increased significantly globally. With the speed at which information and communication technology is developing, smartphones are becoming an essential part of our everyday life. Around the world, people of all ages use smartphones due to their great mobility, accessibility, and lack of physical limitations. Parents may use a number of crucial services on their smartphones in their daily lives. It is not limited to the leisure and information-gathering sectors of telecommunications. Like anything else, though, overuse and misuse can cause problems. Both good and bad consequences on our everyday lives might result from using digital media. **McDaniel, (2019), Wolfers et al., (2023).**

In addition to many other health-related tasks, smartphone applications have enhanced health and health-related behavioral outcomes by sharing health information and facilitating illness detection, control, and management. Smartphone integration into family life has several advantages, such as facilitating communication, transferring family values through games, and making it easier to balance work and home life **Mahmood et al., (2019).**

Despite its advantages, telephones can often negatively affect family life. One of the most frequent issues is that family members may become distracted by their phones and become a common source of distraction for family members, which makes them spend less time together **Akrim& Dalle, (2021).** Mothers' use of smartphones is rapidly increasing as they want to stay in touch with their partners, friends, and employers during the often-distant times of parenthood **Knitter et al., (2020).** Because they use screens for both personal and professional purposes throughout the day, mothers are more likely to use smart devices when interacting with their children. Digital media devices can harm children's social-emotional development by taking mothers' focus away from their children's needs and toward their device during family quality time, such as meals, playtime, and bedtime **Panjeti-Madan & Ranganathan, (2023).**

More than 86% of the population around the globe owns a smartphone, as it has become an essential part of

our day-to-day lives. The number of smartphone users will reach to 7.1 billion in 2024. The number of smartphone users increased by 4.2% compared to the previous year **WHO,(2024).**

The mother is the primary caregiver and has the biggest impact on how a child develops socially and how attached they are to their family **Kim et al., (2022)**. Mothers who build strong relationships with their children are generally thought to influence their overall cognitive, emotional, and social development through their parenting style **Chavda & Nisarga, (2023).**

Using their smartphones excessively caused mothers to speak with their children less frequently and to be less receptive to their needs and attention-seeking tendencies. After a youngster repeatedly tried to get the mother's attention, the mother would occasionally seem irritated or even aggressive **Konradetal, (2021).** Maternal neglect, reduced parenting effectiveness, increased anxiety and aggression, social disengagement, and smartphone addiction in children are just a few of the issues that can result from excessive smartphone use **Gown & Chyung, (2018).**

Community health nurses (CHN) play a vital role in assessing patterns of mothers' smartphone use, time mothers' spent on smartphone daily, history of pervious exposure to health problem related to smartphone misuse and the effects of mothers smartphone misuse on their quality of life and family functions **Gasperini et al.,(2023)**.

Community health nurses (CHN) should also raise awareness about smartphone misuse and overuse's effects on family activities and lives. She can contribute to reducing the detrimental impacts of excessive smartphone use and fostering positive, healthy family interactions by educating and supporting families. Furthermore, they might emphasize the value of in-person interactions and family time. Additionally, they can offer advice on how to manage smartphone use during family time, including establishing limits and allocating particular periods for activities that don't involve smartphones **Webster et al., (2020).**

Significance of the study:

The use of mobile phones has increased in popularity as technology has developed. Smartphones have become a significant aspect of contemporary life, and it is anticipated

that new technology will have a variety of effects on future family structures and relationships. Mothers report using their smartphones more when their children are around, even though they feel guilty and worry about not being a good parent, which results in a decrease in their responsiveness. Mothers' strong emotional bonds and family members' communication are crucial for emotional stability and wholesome connections, both of which are necessary for a happy and healthy family life. Therefore, the present study aims to assess the effect of mothers' smartphone use on family life and family functions.

Aim of the Study: The study aimed to assess the effect of mothers' using of smartphone on their quality of life and family functions**.**

Research Questions:

1-What's the effect of smartphone use on mothers' quality of life?

2- What's the effect of smartphone use on mothers' family functions?

Subjects and method:

Subjects

Study design: A descriptive cross sectional research design was used in this study.

Study settings: This study was conducted in the two largest maternal and child health care centers in Tanta city, El-Gharbeya Governorate, including the medical center at Sigar and the Dr. Mohamed Mashaly primary health care center at Saied Street, which are affiliated with the Ministry of Health and Population.

Study subjects: The study included a convenience sample of 700 mothers who have smartphone and who attended to the previous mentioned settings for any service.

Tools of data collection:

The researcher used four tools to collect the necessary data for this study.

Tool I: Mothers' knowledge regarding smartphone use questionnaire: It was developed and used by the researcher after reviewing the related literature **Blut &Wang, (2020), Thulin& Vilhelmson, (2017)**. It was consisted of two parts**:-**

Part(1):Socio-demographic characteristics of the mothers: This part included data about age, education, occupation of mother, marital status, residence, family type, monthly family income, husband education, occupation, number of children, and history of previous exposure to health problems related to smartphone use.

Part (2): Smartphone use knowledge questionnaire: It was used to assess the mothers' knowledge about smartphone use. It consisted of five questions that covered the following areas: purpose of using a smartphone, effects of maternal smartphone use on mother-child interaction, effects of smartphones on their daily lives, advantages and disadvantages of smartphone use, and problems of smartphone misuse and overuse.

Scoring system:

The statements were provided with two options; every correct answer was given a score of one (1); the incorrect answer and don't know were given a score of zero (0). These scores were summed up, and the total score ranged from 0 to 61 points, which was converted into a percentage score and classified as follows:

 -Low knowledge < 60% (0 - 36 points) from the total score.

-Moderate knowledge 60% - 75% (37 - 46 points) from the total score

-High knowledge >75 %(47 - 61 points) from the total score**.**

Tool II: Smartphone addiction scale (SAS): It was developed by **Kwon et al, (2013),** It was adapted by the researcher to measure level of smartphone use among studied mothers. It comprises of ten items concerning; daily-life disturbance, positive anticipation, withdrawal, cyberspace –oriented relationship, overuse, and tolerance. Each item is rated on a three-point likert scale. The statements were provided with two options; every correct answer was given a score of one (1); the incorrect answer and don't know were given a score of zero (0). These scores were summed up, and the total score ranged from 0 to 61 points, including disagree (0), neutral (1), and agree (2). Each participant's scores were summed up, with a higher score indicating more extensive smartphone use. The total score ranged from 0 to 20 points, which was converted into a percentage score and classified as follows:

- High smartphone use ≥ 70% (≥ 14 points) from the total score.

- Moderate smartphone use: 50%-<70% (10 - <14 points) from the total score.

- Low smartphone use: < 50% (< 10 points) of the total score**.**

Tool III: Family quality of life among studied mothers use Smartphone:

 The Beach Center Family Quality Of Life (FQOL) scale which assesses families' perceptions of their satisfaction with different aspects of family quality of life which developed

by **Zuna et al., (2009)** was adapted by the researcher in this part. It comprises of 20 items covering four subscales: family interaction, parenting, emotional well-being, physical / and material well-being. The statements of the scale were rated on a 5-point likert scale where 1 = never, 2 = nearly, 3 = sometimes, 4 = often, and 5 = always. Scores of all items will be summed up to calculate the total score of the family satisfaction level toward their family quality of life. The total score ranged from 0 to 100 points, which was converted into a percentage score and classified as follows:

- Satisfied with > 75% (> 75 points) of the total score.
- Neutral 60%-75% (60-75 points) of the total score.
- Unsatisfied: < 60% (< 60 points) of the total score.

Tool IV: Family functioning among studied mothers:

Family functioning of studied mothers was assessed using the McMaster Family Assessment Device (FAD) which developed based on McMaster model of family functioning. It was developed by **Epstein et al.,(1983)**. Three subscales of FAD were adapted by the researcher in this study, which were mostly affected by smartphone use, including the 3 dimensions of McMaster of Family Function (MMFF):

- Problem solving (5 items)
- Communication (6 items)
- General functioning (12 items)

Responses on the subscale items were measured on a 4-point Likert scale ranging from (4) = "strongly agree" to (1) = "strongly disagree." The rating score was reversed in items 2 and 5 in the communication part and in items 1, 3, 5, 7, 9, and 11 in the general functioning part to be (1) for "strongly agree" to (4) = "strongly disagree." The average score was used in subsequent analyses. Higher scores indicated healthier family functioning points, which were converted into percentage scores and classified as follows:

-Healthy family functions ≥ 70 % (≥ 48 points) of the total score.

- Unhealthy family functions < 70 % (< 48points) of the total score.

Method

The study was conducted as follows:

1. **Obtaining approval**

- An official permission to conduct the study was obtained from the Dean of the faculty of Nursing and directed to the managers of MCH centers in order to take their permission to collect data from the selected settings.

2. Ethical and legal considerations:

-Approval of the faculty of nursing scientific research ethical committee was obtained to conduct the study, code of ethics: (291-8/2023).

-An informed consent was obtained from all the chosen mothers after providing appropriate explanation about the purpose of study.

-Nature of the study was not cause harm and/or pain for the entire sample.

- Confidentiality and privacy were put into consideration regarding collected data.

- Each mother was informed that she has the right to withdraw from the study any time she wants.

3-Developing the study tools:

- Tool I was developed by the researcher based on a literature review; Tools II, III, & IV were adapted by the researcher and translated into the Arabic language to suit the studied subjects.

4-Validity of the study tools:

- The study tools were tested for face and content validity by a jury of five professors with expertise in the field of community health nursing before conducting the study to evaluate the individual items as well as the entire instrument as being relevant and appropriate to test what it wants to measure. The total questionnaire content validity index was found to be 94.35%.

5. Pilot study:

-The researcher conducted a pilot study on 10% of the sample to test the tools for clarity and applicability, identify possible barriers for the researcher during data collection, and estimate the time required to collect data from each mother. Consequently, the required adjustments were made. These mothers were not included in the study's sample.

6-Reliabitily:-

Reliability was calculated to study the tool using Cronbach's alpha test. The total questionnaire Cronbach's alpha was 0.74 for all the study tools. For socio-demographic and knowledge items, it was found to be 0.514 & 0.829, respectively. For the smartphone addiction scale, the family quality of life scale, and the family functioning scale, it was found to be 0.731, 0.862, and 0.757, respectively.

-Significance was at $p<0.05$ for interpretation of the results.

7. Actual study:

-The researcher met with the mothers only two days per week (Monday and Thursday) in the waiting areas selected at MCH center Tanta city, El-Gharbeya Governorate.

-The structured interview sheet was individually fulfilled from each mother at the three previously selected MCH centers.

- It took an average of 20 minutes to gather the data from each mother.

-Data was collected by the researcher over a period of six months starting from January 2024 to the end of July 2024.

8. Statistical analysis of the data:

SPSS (Statistical Package for Social Science) version 25 (IBM Corporation, Armonk, NY, USA) was used to code, enter, tabulate, and analyze the data that was gathered. Range, mean, and standard deviation were computed for quantitative data. Chi-square test was used for qualitative data, which describe a categorical set of data by frequency, percentage, or proportion of each category, comparison between two groups, and more. The Z value of the Mann-Whitney test was used to compare the means of two groups of independent samples' non-parametric data. To compare more than two non-parametric data means, Kruskal-Wallis was computed. Pearson's correlation coefficient (r) was used to assess the relationship between the variables.

Results:

Table 1: Distribution of studied mothers according to their socio-demographic characteristics. The table shows that, about two-thirds (64.43%) of the studied mothers were in the age group (20-40) years. The age of the studied mothers ranged between 20 - 70 years with a mean age of (37.93±11.011) years. Regarding mothers' and their husbands' educational level, nearly half (47.7% - 47.3%) of them received university and postgraduate education respectively.

Concerning the working status of the studied mothers and their husbands, more than half of them (54.0%-56.0%) were workers (office work). Also, more than half (55.3%) of them live in urban areas.

In relation to family type, more than half (54.6%) of them had nuclear families, and more than one-quarter (29.6%) of them had extended families. Regarding family income, slightly less than two-thirds (60.3%) of them had enough family income. As regards the number of children, nearly half (44.7%) of them have two children, and more than one-third (39.0%) have more than two children.

Table 2: Distribution of the studied mothers according to time spend on smartphone and pervious exposure to health problems related to smartphone use. This table revealed

that, regarding the number of calls the mothers made daily, more than half (59.4%) of them made 1-5 calls daily. Concerning the time mothers spend daily on their mobile phones, about two-thirds (64.9%) of them spend 1-5 hours/day, and slightly less than one-third (31.1%) of them recharge twice with a mean of 1.47± 0.642. In relation to having a history of exposure to health problems related to smartphone use, the table revealed also that nearly half (43.4%) of the studied mothers had previous exposure to health problems related to smartphone use.

Table 3: Mean and standard deviation of mother knowledge regarding smartphone use in relation to purpose, effect, advantages and disadvantages. The table shows that, regarding the mean knowledge score of the studied mothers, it was obvious that the highest mean knowledge score was found with mothers' knowledge regarding disadvantages and problems of smartphone misuse and overuse (10.41 ± 3.566). This followed by advantages of smartphone use (7.96 ± 2.626), the purpose of using smartphone (5.52 ± 1.894), effects of smartphones on her daily lives (5.43 ± 1.627) and regarding the effects of maternal smartphone use on mother-

child interaction (5.36 ± 1.847). The total mean score of mothers' knowledge regarding smartphone use (34.68 ± 8.252).

Figure (1): Represents the distribution of the studied mothers according to their level of knowledge regarding smartphone use. The table shows that about two-thirds (66%) of the studied mothers had a low level of knowledge, while more than one-quarter (26.1%) of them had a moderate level of knowledge, and very few (7.9%) of them had a high level of knowledge.

Table 4: represents the distribution of the studied mothers regarding to smartphone addiction. The table reveals that nearly half (41.9%-43.0%) of the studied mothers, respectively, agreed about feeling pain in their wrists or at the back of their necks while using a smartphone, and people around them told them that they used smartphone too much. More than half of them (54.3%, 57.1%, and 57.3%) respectively were neutral about missing work that they planned due to smartphone use, having difficulty concentrating while doing household chores and at work due to using a smartphone, and having a smartphone on their mind even when they were not using it.

Also, the table reveals that about one-third (31.3%-34.3%-39.1%) of them, respectively, agreed that they wouldn't be able to stand having a smartphone, they constantly checked their smartphone so as not to miss conversations between other people on Twitter and Facebook, and they used their smartphone longer than intended.

Figure (2): Distribution of the studied mothers regarding to their addiction levels of smartphone use. The table reveals that more than two-fifths (42.3%) of the studied mothers had a moderate level of smartphone addiction, and more than one-quarter (29.3%) of them had a high smartphone addiction. On the other hand, 28.4% of them had low smartphone addiction.

Table 5: Mean and standard deviation of family quality of life dimensions including family interaction, parenting, emotional wellbeing and physical / material well-being of among the studied mothers addicting smartphone. The table illustrates that the highest mean score of family quality of life among the studied mothers was regarding the parenting dimension (20.74 ± 4.916), followed by family interaction was (20.06 ± 4.669), the physical/material well-being dimension was (12.71 ±

3.401), and the emotional well-being dimension was (12.29 ± 3.062). The total mean score of family quality of life was 65.81±13.01.

Figure (3): Distribution of the studied mothers according to their total levels of Family quality of life regarding smartphone use. The table reveals that, more than half (54.4%) of studied mothers using smartphone had unsatisfied family quality of life ,and only 14.3% of them had satisfied family quality of life.

Table 6: Mean and standard deviation of family functioning dimensions including ability to solve problem, communication between family members and General family functions among the studied mothers using smartphone. The table presents that the highest mean score was found regarding general family functioning among the studied mothers (32.58±5.367), regarding communication between family members (16.28±2.077), and regarding ability to solve problems (14.78±2.240). The total mean score of the family functioning was 63.64 ± 7.075.

Figure (4): levels of Family Functioning among the studied mothers using smartphone. The table illustrates that, the majority (83.1%) of

the studied mothers using smartphone had unhealthy family functions, and only (16.9%) had healthy family functions.

Table 7: Represents the relation between socio-demographic characteristics of the studied mothers and their levels of knowledge regarding smartphone use and their levels of addiction regarding smartphone use. The table illustrates that, there was a highly statistically significant relationship between mothers' level of education and family type with their levels of knowledge regarding smartphone at (p<0.01). Also there was a statistically significant relation between mothers age, place of residence and monthly family income with their levels of knowledge regarding smartphone at (p<0.05).And there was a highly statistically significant relation between mothers level of education, place of residence, family type, monthly family income related to smartphone use with their levels of addiction regarding smartphone use at (p<0.01).

Table 8: Represents relation between socio-demographic characteristics of the studied mothers using smartphone and their levels of family quality of life and their levels

of family functioning. The table The table represents that there was a highly statistically significant relation between all items of socio-demographic characteristics of the studied mothers using smartphones and their levels of family quality of life at p<0.01. And there was a statistically significant relation between all elements of socio-demographic characteristics of the studied mothers using smartphones and their levels of family functioning (p<0.01), except for place of residence and monthly family income.

Table 9: Represents the correlations between total scores of knowledge of the studied mothers, total addiction score, total quality of life and total family functioning scores. The table presents that there was a highly statistically significant correlation between the total knowledge score with the total score of the smartphone addiction scale and the total family functioning score. Also, there was a statistically significant correlation between the total score of family quality of life and the total score of family functioning. Also, there was a negative correlation between the total smartphone addiction score with the total family quality of life score and the total family functioning score.

Table (1): Distribution of the studied mothers according to their socio-demographic characteristics

Socio-demographic characteristics	The studied mothers (n=700)	
	No	**%**
Age in years:		
20-40	451	64.43
41-60	225	32.14
61-70	24	3.43
Mean ± SD	37.93±11.011	
Mothers' educations		
Read, write and basic education	149	21.3
Secondary education	217	31.0
University and postgraduate education	334	47.7
Husband' educations		
Read and write / basic education	75	10.7
Secondary education	294	42.0
University and postuniversity education	331	47.3
Mother job		
Housewife (not working)	242	34.6
Working (craft work)	80	11.4
Working (office work)	378	54.0
Husband job		
Not working	45	6.4
Working (craft work)	263	37.6
Working (office work)	392	56.0
Marital status		
Married	568	81.1
Divorced	81	11.6
Widow	51	7.3
Residence		
Rural	313	44.7
Urban	387	55.3

Table (1): (Continue) Distribution of the studied mothers according to their socio-demographic characteristics

socio-demographic characteristics	The studied mothers (n=700)	
	No	**%**
Family type		
Nuclear Family	382	54.6
Extended Family	207	29.6
Blended Family	60	8.6
Single Parent	51	7.3
Family income		
Not enough	235	33.6
Enough	422	60.3
Enough and save	43	6.1
Number of children		
One	114	16.3
Two	313	44.7
More than two	273	39.0

Table (2): Distribution of the studied mothers according to time spent on smartphone and pervious exposure to health problems related to smartphone use.

Time spend on smartphone	The studied mothers (n=700)	
	No	%
The number of calls the mothers make daily		
1-5	416	59.4
6-10	205	29.3
More than 10	79	11.3
The time you spend daily on your mobile phone		
1-5 hours	454	64.9
6-10 hours	208	29.7
More than 10 hours	38	5.4
The number of times mothers recharge their phone or Wi-Fi package per month		
One time	425	60.7
Twice	218	31.1
More than Twice	57	8.1
Mean ± SD	1.47± 0.642	
History of previous exposure to health problems related to smartphone		
Yes		43.4
No	304	56.6
	396	

Table (3): Mean and standard deviation of mother knowledge regarding smartphone use in relation to purpose, effect, advantages and disadvantages

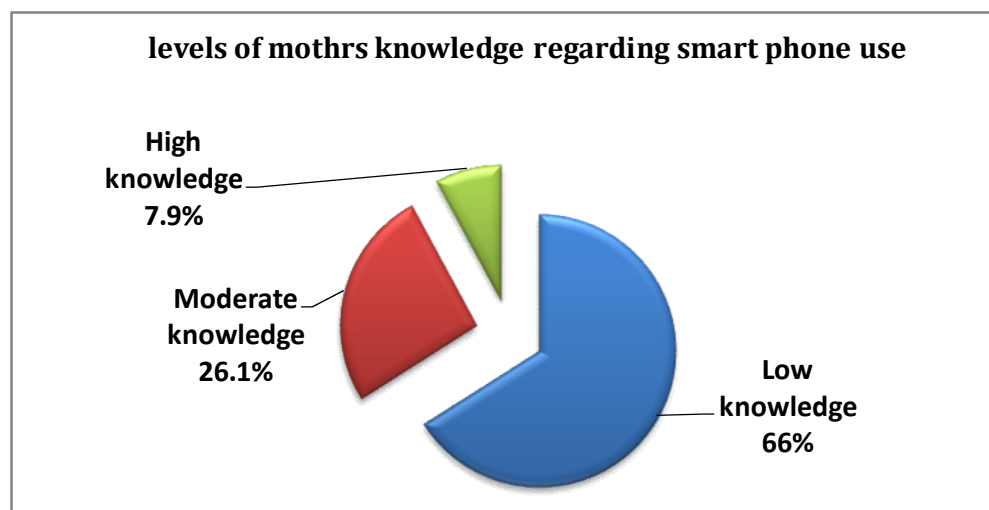| Mothers' knowledge regarding smartphone use	The studied mothers (n=700)
	Mean ± SD
Purpose of using smartphone	5.52 ± 1.894
Effects of maternal smartphone use on mother–child interaction	5.36 ± 1.847
Effects of smartphones on mothers' daily lives	5.43 ± 1.627
Advantage for smartphone use	7.96 ± 2.626
Disadvantage and problems of smartphone misuse and overuse	10.41 ± 3.566
Mothers' total knowledge mean score regarding smartphone use	**34.68 ± 8.252**

Figure (1): Distribution of the studied mothers according to their knowledge levels regarding smartphone use.

Table (4): Distribution of the studied mothers regarding to smartphone addiction.

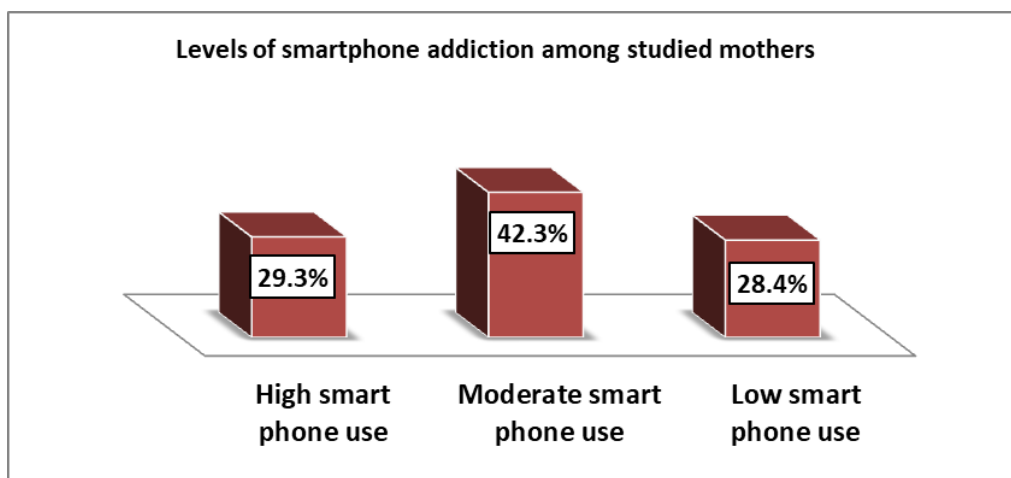| Smartphone addiction among studied mothers	The studied mothers (n=700)					
	Agree		Neutral		Disagree	
	No	%	No	%	No	%
I miss work that I planned, due to smartphone use	152	21.7	380	54.3	168	24.0
I have difficulty concentrating while doing household chores and at work due to using a smartphone	162	23.1	400	57.1	138	19.7
I wouldn't be able to stand without having a smartphone	219	31.3	338	48.3	143	20.4
I feel pain in wrists or at the back of neck while using a smartphone	293	41.9	340	48.6	67	9.6
I feel impatient and fretful when I am not holding smartphone	222	31.7	357	51.0	121	17.3
I have smartphone on mind even when I am not using it	162	23.1	401	57.3	137	19.6
I would never give up using smartphone even if daily life were greatly affected by it	179	25.6	354	50.6	167	23.9
I constantly check smartphone so as not to miss conversations between other people on Twitter and Facebook.	240	34.3	348	49.7	112	16.0
I use smartphone longer than intend.	274	39.1	345	49.3	81	11.6
People around me tell me that, I use smartphone too much	301	43.0	311	44.4	88	12.6

Figure (2): Distribution of studied mothers according to their addiction levels of smartphone use.

Table (5): Mean and standard deviation of family quality of life dimensions including family interaction, parenting, emotional wellbeing and physical / material well-being among the studied mothers.

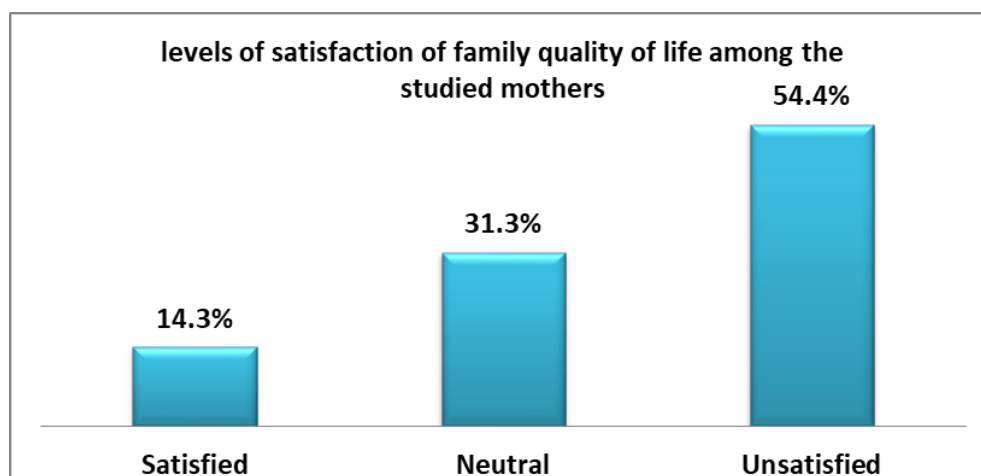| Family quality of life among the studied mothers	The studied sample (n=700)
	Mean ± SD
Family Interaction	20.06 ± 4.669
Parenting	20.74± 4.916
Emotional Well being	12.29± 3.062
Physical / Material Well-being:	12.71± 3.401
Total score of family quality of life	**65.81±13.01**

Figure (3): Distribution of the studied mothers according to their levels of satisfaction of family quality of life.

Table (6): Mean and standard deviation of family functioning dimensions including ability to solve problem, communication between family members and general family functions among the studied mothers.

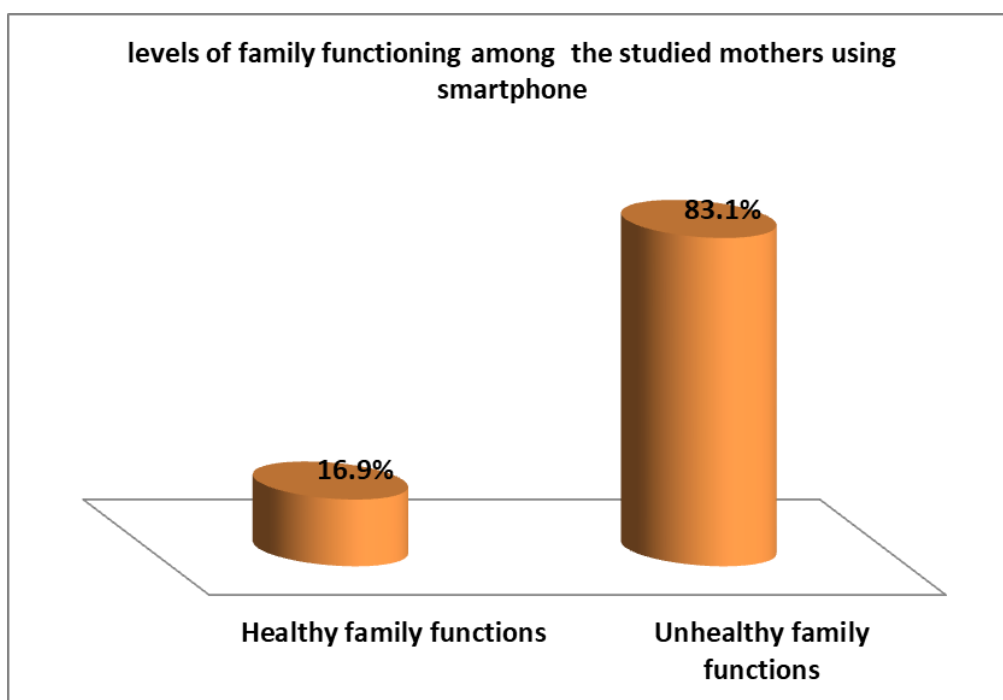| Family functioning among the studied mothers	The studied sample (n=700)
	Mean ± SD
Ability to solve problems	14.78± 2.240
Communication between family members	16.28± 2.077
General family functions	32.58± 5.367
Family Functioning total mean score	**63.64± 7.075**

Figure (4): levels of family functioning among the studied mothers using smartphone

Table (7): Relation between socio-demographic characteristics of the studied mothers and their levels of knowledge regarding smartphone and their levels of addiction regarding smartphone use

Socio-demographic characteristics	The studied mothers(n=700)						X^2 p	The studied mothers(n=700)						X^2 p
	Levels of knowledge							Levels of smartphone addiction						
	low knowledge (n=462)		Moderate knowledge (n= 183)		High knowledge (n= 55)			Low smartphone addiction (n=199)		Moderate smartphone addiction (n=296)		High smartphone addiction (n=205)		
	No	%	No	%	No	%		No	%	No	%	No	%	
Age														
20-40	278	61.6	133	29.5	40	8.9	12.081	119	59.8	197	66.6	135	65.9	8.161
41-60	165	73.3	45	20.0	15	6.7	0.017*	69	34.7	88	29.7	68	33.1	0.086
61-70	19	79.2	5	20.8	0	0.0		11	5.5	11	3.7	2	1.0	
Mothers level of education														
Read and write / essential education	124	83.2	23	15.4	0	0.0	28.034	34	17.1	73	24.7	42	20.5	15.171
secondary education	137	63.1	62	28.6	18	8.3	< 0.001**	77	38.7	92	31.1	48	23.4	0.004**
University and post university education	201	60.2	98	29.3	35	10.5		88	44.2	131	44.3	115	56.1	
Mother job														
Not working (house wife)	167	69.0	63	26.0	12	5.0		68	34.2	110	37.2	64	31.2	
Working (craft work)	56	70.0	18	22.5	6	7.5	5.870	24	12.1	32	10.8	24	11.7	2.006
Working (office work)	239	63.2	102	27.0	37	9.8	0.209	107	53.8	154	52.0	117	57.1	0.735
Place of residence														
Rural	222	70.9	74	23.6	17	5.4	7.676	102	51.3	143	48.3	68	33.2	16.044
Urban	240	62.0	109	28.2	38	9.8	0.022*	97	48.7	153	51.7	137	66.8	0.001**
Family type	228	59.7	120	3.4	34	8.9		97	48.7	162	54.7	123	30.0	24.586
Nuclear family	160	77.3	38	18.4	9	4.3		59	29.7	97	32.8	51	24.9	0.001**
Extended Family	48	80.0	9	15.0	3	5.0	32.694	30	15.1	32	7.1	9	4.4	
Blended Family	26	51.0	16	31.4	9	17.6	< 0.001	13	6.5	16	5.4	22	10.7	
Single Parent														
Monthly family income														
Not enough	148	63.0	65	27.7	22	9.4	11.928	52	26.1	104	35.1	79	38.5	14.879
Enough	282	66.8	114	27.0	26	6.2	0.018*	141	70.9	169	57.1	112	54.6	0.005**
Enough and save	32	74.4	4	9.3	7	16.3		6	3.0	23	7.8	14	6.8	

Table (8): Represents relation between socio-demographic characteristics of the studied mothers and their satisfaction levels of family quality of life and their levels of family functioning

Socio-demographic characteristics	The studied mothers(n=700)						X^2 p	The studied mothers(n=700)				X^2 p
	levels of Family quality of life							Levels of family functioning				
	Unsatisfied (n=381)		Neutral (n=219)		Satisfied (n=100)			Un-healthy family functions (n=582)		Healthy family functions (n=118)		
	No	%	No	%	No	%		No	%	No	%	
Age												
20-40	220	48.8	160	35.5	71	15.7	20.239	358	79.4	93	20.6	12.870
41-60	141	62.7	56	24.9	28	12.4	< 0.001**	202	89.8	23	10.2	0.002**
61-70	20	83.3	3	12.5	1	4.2		22	91.7	2	8.3	
Mothers level of education												
Read and write / essential education	114	76.5	24	16.1	11	7.4		130	87.2	19	12.8	
secondary education	116	53.5	71	32.7	30	13.8	41.029	202	93.1	15	6.9	33.492
University and post university education	151	45.2	124	37.1	59	17.7	< 0.001**	250	74.9	84	25.1	< 0.001**
Mother job												
Not working (house wife)	150	62.0	57	23.6	35	14.5	15.076	204	84.3	38	15.7	5.607
Working (craft work)	41	51.3	33	41.3	6	7.5	< 0.005**	73	91.3	7	8.8	0.061*
Working (office work)	190	50.3	129	34.1	59	15.6		305	80.7	73	19.3	
Place of residence												
Rural	169	54.0	99	31.6	45	14.4	0.978	264	84.3	49	15.7	0.584
Urban	212	54.8	120	31.0	55	14.2	0.044*	318	82.2	69	17.8	0.445
Family type												
Nuclear family	170	44.5	147	31.4	65	17.0		302	79.1	80	20.9	
Extended Family	151	72.9	44	18.4	12	5.8	58.269	188	90.8	19	9.2	13.679
Blended Family	33	55.0	10	15.0	17	28.3	< 0.001**	51	85.0	9	15.0	0.003**
Single Parent	27	52.9	18	31.4	6	11.8		41	80.4	10	19.6	

Monthly family income												
Not enough	133	56.6	76	32.3	26	11.1	17.542	200	85.1	35	14.9	1.057
Enough	220	52.1	140	33.2	62	14.7	< 0.002**	346	82.0	76	18.0	0.590
Enough and save	28	65.1	3	7.0	12	27.9		36	83.7	7	16.3	

* Significant p<0.05 ** highly significant p<0.01

Table (9): Correlations between the total score of knowledge, of the studied mothers and their total quality of life and the total family functioning scores.

Total score of knowledge ,smartphone addiction, quality of life and family functioning	Total score of the studied mothers (n=700)			
	Total knowledge score	Total Smartphone Addiction score	Total Family Quality of Life score	Total family functioning score
	r p	r P	r p	r p
Total knowledge score	--	0.227 0.001**	.071 0.059	-.105- 0.005**
Total smartphone addiction score	0.227 0.001**	--	-0.001- 0.975	-0.037- 0.326
Total family quality of life score	0.071 0.059	-0.001- 0.975	--	0.324 0.001**

* significant p<0.05 ** highly significant p<0.01

Discussion:

Smartphones have become an indispensable aspect of life. While smartphones have many positive elements, such as increased interaction and convenience in everyday life, they also have certain negative side effects due to their vast range of potential applications. **Wickord& Quaiser-Pohl, (2023).** Mother' excessive smartphone use may have severe effects on the increase in the frequency of family conflicts and poor/troubled family relationships and also impaired family quality of life, family functions, and well-being. **Busch& McCarthy ,(2021).** Therefore, the aim of this study was to assess the effect of mothers' using of smartphone on their quality of life and family functions.

Knowledge of the studied mothers plays a vital role in controlling the smartphone misuse problem, as the mothers are the main caregivers for their family. The present study revealed that about two-thirds of the studied mothers had low level of knowledge about smartphone use, while more than one quarter of them had a moderate level of knowledge, and very few (7.9%) of them had a high level of knowledge about smartphone use **(Figure1)**. This result may be because they didn't aware about physical and psychological

hazards and social effect of smartphone misuse and overuse. Also, insufficient educational program to the public to increase their awareness and knowledge about the effect of smartphone misuse on family functions and different aspect of daily life, that nearly half of them living in rural area. This finding was similar to Egyptian study conducted by **Abdallah Mostafa et al.,(2024)** and found that two-thirds of their studied mothers had an unsatisfactory level of knowledge compared to one-third of them, who had a satisfactory level of knowledge about the misuse of smartphones.

This finding goes also in the same line with **Mohamed et al.,(2021)** who observed that the majority of the studied mothers had poor knowledge about smartphone use.

The current study revealed that the highest mean knowledge score was regarding advantage of smartphone use (7.96 ± 2.626) and disadvantage and problem of smartphone misuse and overuse (10.41 ± 3.566) **(Table III).** This result is accordance with **Latif et al ., (2019)** who conducted a study about "Use of smartphones and social media in our life: trends, advantages, challenges, and barriers" and demonstrated that the majority of their studied mothers reported instant and fast communications to save time

and obtaining information quickly via the internet as advantages for smartphone use. And with a study done by **McDaniel et al.,(2024)** who conduct a study about " Daily smartphone use predicts parent depressive symptoms, but parents' perceptions of responsiveness to their child moderate this effect" which illustrated that most of studied mothers know that misuse and overuse of smartphone cause feelings of distraction, wasted time and impaired daily sleep quality.

Regarding mothers smartphone addiction, the result of the present study revealed that more than half of the studied mothers were neutral about missing work that they planned due to smartphone use and difficulty concentrating while doing household chores and at work due to using a smartphone, and they had their smartphone on their mind even when they were not using it, and nearly half of them agreed that people around them told them that they used smartphones too much. **(Table IV)**. This may be due to that excessive smartphone use or addict it had become a habit for most peoples in their different family relationships, and also due to that the mothers try to deny their actual situation in relation to addict smartphone use. This result supported by **Ali et al.,(2022)** who

conducted a study about" Examining the association s between smartphone use and mother–infant bonding and family functioning" and shows that excessive smartphone use can be sufficiently distracting the mothers from their different responsibilities. Regarding the levels of addiction to smartphone use among the studied mothers**.** In this regard, the current study illustrated that more than two-fifths of the studied mothers had a moderate level of smartphone addiction, and more than one-quarter of them had high smartphone addiction. **(Figure II)**.This results was supported by the finding reported in **(table II)** that about two-thirds of the studied mothers spent 1-5 hours/day on the smartphone, more than half of the studied mothers made 1-5 calls daily, and more than two-fifths of them had previous exposure to health problems related to smartphone use.

Besides, human by their nature refuses to admit mistakes against himself and they suggest the quantity of time they spent on the smartphone doesn't necessary to negate positive interaction with family members because they frequently used it to connect with their children, find helpful parenting resources, or manage family schedules. And also, sometimes they used it as a way to

cope with stress, find support, or have moments of personal time, which could indirectly benefit the family's well-being. This result goes in line with a study done by **Sarıyıldız& Erus, (2024)** who found that mothers had moderate levels of smartphone addiction and suggested that using a smartphone for taking or uploading photos, online shopping, and Internet searches could be considered a lifestyle; mothers may enjoy such activities, which enable them to express themselves and connect with the outside world through media.

Family quality of life is very important for all family members, in which smartphone overuse and misuse may affect individuals' quality of life and make them unsatisfied with their life. In this regard, the current study revealed that the main affected dimension of family quality of life among the studied mothers was parenting with mean(20.74±4.916),family interaction with mean(20.06 ± 4.669**)** and emotional wellbeing with mean(12.29± 3.062) **(Table V)**.

This finding was in the same line with a study done by **Lederer et al.,(2022)** who studied **"**The effects of maternal smartphone use on mother–family member interaction and child development**"** and reported that the maternal smartphone misuse

and over use which can reduce both the quantity and the quality of mother–family interaction. This result is also accordance with a study conducted by **Lee& Kim (2021)** who conducted a study about **"**Effect of maternal factors on problematic smartphone use among elementary school children**"** and found that parenting and emotional well-being inside family was affected according to amount of time mothers spent daily on smartphone.

In relation to the level of satisfaction of family quality of life, the current study reported that it illustrated that more than half of the studied mothers using smartphones were unsatisfied with their family quality of life, and only a few of them were satisfied with their family quality of life. **(Figure III)**.

This finding is supported by chines study conducted by **Luk et al.,(2020)** who found that mother smartphone use has a direct effect, which has been associated with depression symptoms and increased loneliness, which might produce an estrangement of family members and an unsatisfactory family quality of life. On the other hand, it had an indirect effect on mothers with lower levels of family well-being, and unsatisfied family quality of life might refer to mothers using smartphones as an emotion

compensator to regulate or alleviate negative emotions and relieve stress in family life.This finding was corresponding with a study done by **Anaya et al.,(2018)** who found that the excessive time spent on smartphones leads to distractions, less family interaction, and more conflict. Smartphone users were often distracted and did not participate in other family members' conversations, family vacations, and activities, which appeared to affect the quality of interaction and lead to family members being unsatisfied about the family quality of life.

Family functioning is playing important role to the overall well-being of its members and the stability of society. Mothers smartphone misuse and overuse may affect all aspect of family functions as ability to solve problems, communication between family member and others general family functions, In this regard, the current study revealed that the main affected dimension of family functions among studied mothers were general family functions with mean (32.58± 5.367), communication between family members with mean(16.28± 2.077) and ability to solve problems with mean(14.78± 2.240)**(TableVI).** This finding was in the same line with a study done by **Elhai et al.,(2019)** who conducted a study about "The relationship between anxiety symptom severity and problematic smartphone use" and reported that smartphone use affected family functions such as communication, problem-solving, and other general family functioning dependent on the time and duration of smartphone use by family members.

In relation to the levels of family functioning among the studied mothers using smartphones, The result of the present study showed that the majority of the studied mothers using smartphones had unhealthy family functions, and only a few of them had healthy family functions. **(Figure IV)**. This is also supported by the fact that nearly half of the studied mothers had a history of previous exposure to health problems related to smartphone overuse and misuse. This is justified by excessive smartphone use by the mothers, which can have significant negative consequences for mother-child relationships, mothers' practices, and overall family well-being. Foster balance, and be mindful of smartphone use during family interaction; it is crucial for healthy family functioning.

This result was similar to the findings of other studies. A Jordan study conducted by **Ali et al .,(2022)** and Chinese study conducted by **Guo et**

al.,(2019) which found that, excessive smartphone use by most of mothers leads to unhealthy family functioning and impaired family functioning.

In accordance with the correlations between total scores of knowledge of the studied mothers, total addiction score, total quality of life, and total family functioning scores. The current study illustrated that there was a statistically significant correlation between the total knowledge score and the total smartphone addiction scale and the total score of family functioning.

Also, there was a statistically significant correlation between the total score of family quality of life and the total score of family functioning **(Table IX).** This may be due to poor mothers' knowledge about the effect of smartphone misuse and excessive use that leads to increased risk of smartphone addiction and already leads to impaired family functioning. This is also supported by the results reported before that about two-thirds of the studied mothers had a low level of knowledge regarding smartphone addiction. **(Figure1)**. In addition to that, the majority of the studied mothers using smartphone had unhealthy family functions **(Figure 4).**

This result was supported by study done by **Kil et al.,(2021)** and

Mohamed Hassan Nassar & Ata Mohammed,(2021) who found highly statistically significant relation between level of knowledge and smartphone addiction. And similar with the study done by **Guo et al .,(2019)** and **Gugushvili et al .,(2022)** who illustrated that there was a statistically significant relation between the studied mothers' level of knowledge and their level of family functioning.

The finding of this result agrees also with a study carried out by **Mackay et al.,(2022)** who stated that there was a significant correlation between smartphone addiction and the level of knowledge about the effect of smartphone use.

Conclusion

Based on the finding of the present study, it can be concluded that, about Two-thirds of the studied mothers had a low level of knowledge regarding smartphone use. Less than half of them had a moderate level of smartphone addiction. More than half of them using smartphones were unsatisfied with their level of family quality of life, and the majority of them using smartphones had unhealthy family functions.

In addition, there was a highly statistically significant correlation between the total knowledge score with the total score of smartphone

addiction and the total family functioning score. Also, there was a statistically significant correlation between the total score of family quality of life and the total score of family functioning.

Recommendations

Based on the findings of the current study, the following recommendation are suggested:

1) Continuous education programs are recommended to improve the mothers' awareness about the effect of smartphone misuse on overall family quality of life and family functions

2) Booklets, brochures, and posters with illustrated pictures about smartphone addiction and how to prevent it among mothers should be available at all area provide maternity services such as maternal and child health care centers.

3) Education and orientation program for mothers about alternative ways to handle family stress and problems instead of immersing themselves on smartphone use, such as sports and shopping and encouraging specific areas of the home as phone free-zone such, bedrooms or dining rooms.

4) Development and enhancement family relationships and ties through planning for regular family activities that don't involve screens, such as board games and outdoor

activities, to encourage open communication among all family members.

5) The mass media should develop strategies that will help parents change their own technology-using behaviors and educate parents about the benefits and consequences of various types of technology use and its effect on all aspects of family functions.

6) Future study should consider for developing strategies to reduce smartphone use among mothers in order to reflect on the health of all family members.

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