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The Reality of Playing E-games during the Period of Domestic Ban and its Impact on the Early childhood children' Developmental domains from Mothers' Point of View

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Abstract- The current study aimed at identifying the impact of children's playing of E-games at homes during the Corona pandemic, on their sensory/motor, mental/cognitive, emotional, and social developmental domains. The study was conducted on a sample of (225) mothers who have one or more male or female child between the ages of (4-8). The descriptive method was used for the purpose of the current study, and two tools have been developed namely: (1) the questionnaire of identifying E-games reality during the Corona era and (2) the scale of measuring the effect of E-games on kindergarteners' developmental domains. The study results showed several results; the rate of playing E-games differed during the Corona pandemic because the time of playing them exceeded (5) hours per day and even extended to most of the day and night. Also, the results showed the effect of E-games on child's developmental aspects by varying degrees where the greatest effect was on the emotional/social aspects, followed by the sensory/motor aspects (physical) while the effect of E-games on the mental/cognitive aspects was moderated. The recommendations of the current study highlighted the importance of parents' role in guiding children to play E-games correctly in a way that depends on the activities that develop their mental and creative abilities. Also, it recommended requiring the responsible authorities to observe the E-games sold on the market with the help of psychologists, sociologist, and educational committee.

Keywords: E-games, Corona Pandemic, Developmental Domains, Early childhood, children.

I. INTRODUCTION:

Children tend to play innately as play is an important activity in their lives. The infants' personalities are formed through playing and their intellectual, emotional, and social tendencies are shown.

Psychologists highlighted the effect of playing on developing the individual's personality in all aspects. Kindergarten stage has a very significant role in forming the children's personalities and Children, at this stage, should be given special care. The E-games and modern techniques play a significant role in the children's development because these kinds of games are characterized by several advantages including the diversity between exciting, activating, intelligent and educational games. These games sre created for all ages and categories, but they are very common for kindergarteners (Moshtak, 2019; Al-Waer, 2017).

Covid-19 pandemic kept all the family members under home quarantine and this necessitates adapting to the new situation that was not familiar before. It caused a noticeable spread of many psychological disorders (Badran, 2020; & Al-Khouli, 2021). Under these circumstances, children are the most affected ones by this ban especially after obligating them to staying at home so as not to be infected. On the other hand, parents look for other solutions to fill the leisure time of their children by providing various E-games, whether as video games, or online interactive electronic ones. Children spend most of time playing E-games and this affects their behavior whether positively or negatively, and this stimulates psychologists and educators to study the effect of E-games on young and old children, in addition to studying the differences between males and females in gaming preferences. (Asmar, 2020).

The effect of E-game on children and adults is a topic that has imposed itself widely in scientific research field, especially regarding the repercussions of the domestic ban. This was also affirmed by the International Scientific Conference of the Arab Democratic Center for Strategic, Political and Economic Studies in Berlin-Germany entitled; "E-games and their impact on the child regarding Corona pandemic" held from (7-8) June 2020 via (zoom) online platform.

Recent trends about the effect of E-games on children highlighted the rareness of the studies that handled the pros and cons of the E-games and their effectiveness on children's developmental and behavioral domains (Al-Kandri, 2019; Hijazi, 2017; & Hijazi, 2010).

Therefore, the current study seeks to investigate The Reality of children's Playing of E-games during staying at home as a result of the Corona Pandemic and its effect on the child's motor/sensory, cognitive/mental, and social/emotional developmental domains. Mothers' complains have varied about the changes in their children's behavior and their different daily routines prior to this crisis.

The problem of the study:

E-games are various and available for young and old children. Playing E-games has become a common behavior during leisure and entertainment time for both children and adults. Parents are keen to provide smart devices for their children early in their lives, especially after the rapid technological development, and the transformation into the digital life, that kept children desired with technology either for imitating adult, or for satisfying their preference for E-games.

With the appearance of Corona Pandemic and the repercussions results from it represented in. schools Closure, prevention. of children's departure from home and difficulty of parents' controlling children's playing times; parents have difficulty controlling their children's behavior and balancing their playing, learning. and Resting. times. This is because they want children to have fun during playing, or to keep them quiet inside the house, so children play all day, and parents can not stop them from doing this. As a result, parents had many questions about changes in children's behavior at home.

Although the recent studies have focused on the negative effect of E-games and the parents suspicious that the changes in children's behavior are due to the increased hours of children's playing E-games, the positive effects of children playing E-games on their development in different domains has not received sufficient attention. This encouraged the researchers to do the current study to find out children E-gaming reality during Corona pandemic, and the E-games' effect on child development.

From previous, study problem can be formulated in the following questions:

First: What is the reality of children's playing E-games during Corona domestic ban?

The following questions are derived from the above question:

1- What kind of games does a child play during the domestic ban?

2. Are there statistically significant differences between males and females in their playing preferences from parent's point of view?

Second: What is the effect of children's E-games playing on the developmental domains during Corona crisis from parent's point of view?

The following questions are derived from the above question:

1. What is the impact of children's E-games playing on their mental/cognitive development from parent's point of view?

2. What is the impact of children's E-games playing on their emotional/social development from parent's point of view?

3. What is the impact of children's E-games playing on their sensory/motor development from parent's point of view?

4. Are there statistically significant differences among children in the effect of E-gaming on their development due to the gender from mothers' point of view?

Study objectives:

The current study aimed at:

1. Identifying children E-gaming reality during the domestic ban.

2. Investigating the effect of E-games on the sensory/motor, mental/cognitive, and emotional/social development domains of a child during Corona pandemic domestic ban.

Study importance:

The current study might be valuable in:

1. The novelty and importance of the topic it addresses to reveal the actual reality of changes happened in children's E-games playing during the ban.
2. Strengthening the idea of using child favorite E-games not only for entertainment, but also for developing child's personality aspects.
3. Providing a scale that may benefit other researchers in investigating the effect of E-games on child development.
4. Necessity of studying developmental aspects on its levels, as any disruption in the development manifestations at any age may be followed by disruption in other stages.

Operational definitions:

E-games:

A range of games, that are played by children for fun and entertainment, that need a device and special skills to be displayed and used on computer screens or smart devices, and they contribute to children's developmental aspects during Corona Pandemic.

Children developmental domains:

The two researchers define developmental domains operationally as: "The degree that the child obtains in the scale of the effect of E-games on children developmental domains; including the following developmental aspects: (sensory/motor, cognitive/mental, emotional/social)

II. REVIEW OF LITERATURE

Electronic games

With technology spreads in Arab and foreign societies, the availability of smart devices for young and old children, easy digital access, and the availability of E-communication for children, there has been a major transformation of children's minds, turning them into digital life with skillful use of technology for entertainment and education.

With the occurrence of Corona pandemic ban, the number of hours that children spend playing games increased whether to play individually or join play groups. Children play technological games more than traditional ones. This has a significant impact on child's developmental aspects.

Linguistic concept of playing:

The Arabic Dictionary 'Lisan Al-Arab', (2020) defined 'playing' linguistically as an act opposite to seriousness and the free activity that is practiced for its sake.

The Oxford English Dictionary, (2020), defined 'Electronic playing' as "an activity that an individual participates for entertainment, often with play rules, potential win and loss, and depends on special devices' use".

Terminology of play:

Tatl (2018), and Batdi, (2017) agreed on defining play as an important activity for the child because it contributes in children's development in the cognitive, motor, social and emotional aspects.

Hacisalihoglu, (2017), also defined play as a free activity that reinforces players' self-motivation, contributes to the motor and cognitive development, improves their abilities and develops problem-solving skills.

Sabti et al. (2020) defined E-gaming as an organized free act in which the child exerts a desired effort without obligation and its success depends on the cultural game content.

The importance Of E-games in children Development. And learning:

Recently some studies handled the advantages and impact of E-games on the child's development and learning, Including (Tatli, 2018; Oei & Patterson, 2013; and Hijazi, 2010). The most prominent advantages of E-games in children's development and learning are summarized in the following points:

- They affect children development in different aspects and allow the child to grow individually according to his/her abilities as they can be modified according to the specific objectives.
- They contribute to the development of some linguistics skills and mathematical concepts.
- They contribute to the development of some educational and cognitive skills.
- They reduce children's fear while learning and provide an entertaining, and interactive environment as it integrates motion, sound, colors and graphics
- They improve visual research and spatial memory skills.
- Online games help to develop creative thinking and problem-solving skills, resilience and interaction and positivity.

Studies on the E-games' impact on children's development

Ott & Pazzi, (2012) and Hijazi, (2010) revealed the role of E-games in the child's development and learning. The results showed the positive effect of E-games on the child's development if used in a correct manner, as well as helping to develop thinking and creative skills, positive attitudes and understanding.

Tatli, (2018) and Hijazi, (2010) pointed to the role of E-games on the child's development in different aspects; regarding their gender. They recommended that E-games can be used to teach children. Results of their studies indicated a difference between males and females in the use of E-games; both of them use E-games effectively but male children spend more time playing, prefer digital games, and prefer to play sports E-games. Unlike female children who often prefer to play outdoor games and if they like to play E-games they prefer small games.

Sabti, et al., (2020) detected the students that handled the dangers of E-games' on the child. The results of these studies shown that children E-gaming is an important source for children's education because it helps children to discover and develop their imagination, makes them dynamic during play, and encourages them to integrate with the society. It also develops their technological skills as well as teaching them the scientific thinking skills.

The results of Al-Sabban, et al., (2021) indicated that E-games help children to acquire some technical skills. Though, there were many negative effects on child's health including distracting attention, and confusing eye vision. Study recommended developing rules that control the choice the appropriate E-games for children gender and age.

Development Domains

Gurab, (2015), Abdul Baqi, (2013) and Saccani, et al., (2013) emphasized that significance of studying development aspects and identifying the negative factors that can hinder human development at all age levels because this increases the ability to provide development-related services in different aspects, contributes to their proper development, and allows to play the required role towards child development efficiently.

"Children development is all the organized and overlapping changes that happens in the developmental aspects in order to achieve maturity and harmony towards the self and society" (Melhem, 2014:38).

Kamash, Yusuf, et al. (2010, 18-19) defined development as "a series of changes that happen to an individual during the life cycle, addressing different changes at each age stage including (motor) physical, mental, emotional and social terms. These changes do not occur randomly but they regularly develop step by step."

Many development scientists explain development as a series of sequenced of changes that aim at completing maturity at the physical (motor), mental and emotional aspects and these changes have a certain order and occur in a predictable manner. (Abu Saad & Al-Khatatna, 2011).

Abdul Baqi, (2013), Zahran (2011), Abu Jaafar (2014), and Tough, et al., (2008) agreed that the factors influencing human development are: inheritance, environment, family, school, social and institutions, maturity, and learning.

Since human developmental aspects are linked with each other on a basic of integration between different aspects of development; the current study will display the different developmental domains.

Mental/cognitive domain:

Mental/cognitive development is defined as the unique mental process of different developmental stages from earlier childhood to maturity" (Melhem, 2014:255)

The researchers operationally define the mental/cognitive aspect as: "The degree that a child obtains in the mental/cognitive developmental aspect in the scale of the effect of E-games on kindergarteners' developmental domains used in the current study.

Children's mental abilities are the result of environmental and inherited preparations. Since children are different in their mental abilities, therefore, it is a must to vary the experiences, activities provided to them. The development process in this aspect appear in the transition from total reliance on sensation to perception, from abstract to generalize and inference, from memorization to understanding, and from imagination to the real world (Al-Waer, 2013).

Social/emotional domain:

Al-Mullah (2001:173) defined social development as "group of changes in the social behavior that aim at increasing children's ability to deal with others by using reactions in different situations, as well as their ability to deal with themselves."

The researchers operationally define social development as: "The degree that a child receives in the emotional/social developmental aspects in the scale of the effect of E-games on kindergarteners' developmental domains used in the current study.

Al-Meligi, (2019) indicated that natural environmental experiences positively affect social development, and interactions with the family and friends, while hard environment, on the contrary, negatively affects social development (Al-Saadi, 2014)

Warm and safe child relationships with adult are necessary in the early childhood, to help the child grow properly. The most important relationships are those that children form with family, and therefore this facilitates the child's transition to a wider world outside the family, and as a result the child could make friends and social relations with his peers easily. (Tahir, 2020; and Keenan, et al., 2016).

Sensory/motor domain (physical):

Al-Waer, (2017) defined development process as what appears in the distinct changes that occur in sensory, visual, audio, olfactory, tactile aspects.

The researchers operationally define the sensory/motor aspect as: "The degree that a child obtains in the sensory/motor developmental aspects in the scale of the effect of E-games on kindergarteners' developmental domains used in the current study.

The most important characteristic that qualify Kindergarten stage is the child's tendency to play and move, in addition the physical (motor) development happens fast, so that the child must get used on acquiring the correct habits such as regular food times, exercises, in addition to providing the child with experiences, activities and hobbies that consider the child different developmental aspects (Abdul Mutallab, 2014; and Fahmy, 2013).

Al-Omda (2012), Al-Amiri and Al-Ani, (2014) showed that kindergarteners' exposure to delayed in the sensor/physical (motor) development is one of the most problems that affects child's and parents' psychology. Therefore, the requirements of the early childhood stage must be satisfied, because if they are not saturated, it is very difficult to compensate or saturate at another new stage because development process works on achieving the requirements of the new stge. Even if they are saturated, they remain weak and not as efficient as they are if they were saturated in that time.

Some studies addressed the effect of E-games on children's development. Asmar, (2020) investigated the effect of E-games on the social, mental and health aspects of kindergarteners from parents' point of view in Al-Quds, Palestine. A questionnaire was used and given for (270) parents. Results indicated the positive effect of E-games on the child mental side, while the effect was negative on the social aspect, and there was no effect on kindergarteners' health.

In this context, Hassan, (2017) investigated the effect of E-games on the social and linguistic intelligence of the children in the middle stage in Saudi Arabia; (233) primary school students. The study used a questionnaire and social and linguistic intelligence scale. The results showed that there are no significant differences in linguistic intelligence between children who play or do not play E-games, while there are significant differences in social intelligence regarding children playing E-games, and also there are no significant differences in the linguistic or social intelligence regarding gender.

Al-Sawalha et al. (2016) also investigated the relationship between E-games and violence and social behavior of kindergarteners from parents' point of view. By applying social and violence behavior questionnaire to (100) parents, the results showed a relationship between violent games on child's violence behavior from parents' point view, while there is no effect on the social behavior.

Comment on the theoretical framework and previous studies

From the above-mentioned review, the diversity of the objectives of previous literature and the title of the current study are showed off. The current study is different from other studies in studying the relationship between E-games and the different developmental domains terms. And it agreed with other studies in terms of objective (I.e. identifying the effect of E-games on one developmental aspect). But it is distinguished from others in that it seeks to identify the effect of E-games on different developmental aspect; motor, mental and social aspects) and the place of application is in Arab societies, and the age is (Kindergartens). And all this, confirms the importance of the current study to address this age phase that has the greatest impact on later age stages).

III. STUDY PROCEDURES:

In this section, the researchers describe the research method, participant that the psychometric properties of the scale are used with and the pilot study to identify the effect of E-games on child's developmental domains. Also, the procedures for conducting the current study and the statistical methods used in it are displayed.

First: method:

The current study used a descriptive analytical method based on data collection by applying the scale to the study sample, to ensure from the kindergarteners' mothers the effect of children's E-games playing on the developmental domains.

Second: community and study sample

The study community consisted of all the kindergarteners' mothers who have children aged from 4:8 years and who enrolled in public and private schools in Giza and Alexandria.

Study Sample:

The study sample was (225) mothers randomly selected and divided into categories for the study objective. (Al-Bassiouni, 2013:319). To ensure that all levels are represented in the pilot study and the sample.

Table (1)

Mothers' distribution based on the mothers' scientific qualification, work and children gender

Variable		N.	Percentage
scientific qualification	**Secondary or less**	26	17.33%
	Bachelor	92	61.34%
	M.A	24	16%

	PhD	8	5.33%
Work	**Doesn't work**	62	41.33%
	Works	88	58.67%
Gender	**Male**	84	56%
	Female	40	26.67%
	Male & Female	26	17.33%

A- Pilot study to assure the psychological rules of the study tools:

This sample aimed to assure the psychometric rules including: the reliability and validity of the study tools and their suitability for application to the study sample. To achieve these goals, tools were applied to (150) kindergarteners' mothers in Giza and Alexandria.

B- The study sample:

The study sample consists of (75) kindergarteners' mothers, in Giza and Alexandria, who have applied the basic study tools with the aim of identifying E-gaming reality and their effect on children developmental domains.

The description of children whose mothers are the basic sample of the study:

The researchers were keen to identify the demographic data if the children whose mothers are the basic sample of the study and this happens by considering age, birth order, social status, school type and children gender to ensure that the basic sample is representative of the original community, and this is illustrated in table (2).

Table (2)

Study sample description

	Variable	**N.**	**Percentage**
Age	**4 :6**	**40**	53.33%
	6 :8	**35**	46.67%
	Total	**75**	**100%**
Birth order	**1-3**	**56**	74.67%
	3-6	**19**	25.33%
	Total	**75**	%100
school type	**General**	**32**	42.67%
	Private	**43**	57.33%
	Total	**75**	**100%**
social status	**Mother & father**	**69**	92%
	Mother	**6**	8%
	Total	**75**	**100%**
Gender	**Male**	**39**	52%
	Female	**36**	48%

Table (2) shows that the age rate is from 4:6 (53.33%), and there is a percentage of (46.67%) from the age of 6:8. The ranking rate of (1-3) is (74.67%), and there is a percentage of (25.33%) in age 3-6. The rate depending on the type of school is (42.67%) for public school and (57.33%) for private, and the percentage

of the social status is (92%) for those who live with the mother and there, and a percentage of (8%) for those who live with the mother only. As well as the proportion of male children is (52%) and the proportion of females is (48%).

Means and standard deviation of children participating in the study were also calculated to ensure that the basic sample is equal in age variables and birth order within the family as described in Table 3.

Table (3)

Statistical treatments "mean - standard deviation" of the basic sample children N= 75

Variable		Mean	S.D.
Age	**4 :6**	**4.5385**	**1.21061**
	6 :8	**7.7143**	**.51856**
Order compared to brothers/sisters	**1-3**	**1.5455**	**.74082**
	3-6	**4.8947**	**.80930**

Table (3) shows "mean - standard deviation" of the values of preliminary data for the children of the primary sample responding to their mothers, through children age birth order.

The study sample is determined as follows:

- mother must have children aged 4-8 years
- children should live with their parents or their mother.
- Children from public and private schools or kindergartens should participate in the study.
- Mothers who work and others who do not, participate in the study.
- Mothers of male and female children should participate in the study.
- Children birth order should vary.

Second: study tools:

The researchers used the following measurement tools:

A. A questionnaire to identify E-gaming reality during Corona pandemic. (prepared by researchers)

The researchers prepared the questionnaire for children's E-games playing during Corona pandemic after reviewing the literature related to E-games, with the aim of obtaining realistic descriptive data on how children spend their time at home, and play E-games. The questionnaire included 3 parts: the first is the children's demographic data, instructions, and purpose, the second part consists of (9 phrases) that measure how children spend their time at home during Corona pandemic, and the third part consists of (11 words) that measure E-gaming reality during the domestic ban. Thus, the questionnaire is a Likert Five scale consists of (20) phrases (starting with strongly agree to strongly disagree), and the researchers have verified the psychometric characteristics of identifying E-gaming reality during Corona pandemic as the following:

Validity of the questionnaire

The researchers also conducted an exploratory analysis to verify the validity of establishing the E-gaming reality during Corona pandemic by subjecting correlation matrix between (20) scale phrases in the pilot study with (150), then re-conducting the analysis on (20) phrases, and it became clear after verifying the high correlations between the phrases, and conducting basic tests to verify the validity for general analysis.

Data validity for the general analysis, calculated in component principal style, and it resulted in five factors extraction after the Varimax axes rotation. Most saturations were significant with saturation limit (0.30), and factors extracted were (2). Thus, factors extracted and saturated became (9) phrases and more, and

phrases were (20). These factors have greater underlying roots than (1), and have collectively explained (129.15%) of the total variation between the questionnaire phrases.

Table (4)

Saturated phrases with factors

Phrase No.	First factor	Second factor
4	.737	
6	.675	
2	.620	
9	.597	
3	.584	
1	.576	
8	.511	
5	.488	
7	.474	
10		.809
16		.778
19		.751
17		.732
11		.721
20		.694
18		.693
14		.680
13		.670
12		.607
15		.640
Underlying root	5.262	7.775
Variation ratio	%58.47	%70.68
Total	129.15	

The first factor: saturated by (9) phrases, and saturation values ranged from (.737-.474) to the underlying root of (5.262) with the variation rate of (%58.47%). This factor can be named as how children spend their time at home during Corona pandemic.

The second factor: saturated by (11) phrases, and saturation values ranged from (.809-.640) to underlying root of (7.775) with variation rate of (%70.68%). This factor can be named as E-gaming in children during the domestic ban.

Internal Consistency

The questionnaire internal consistency of E-gaming reality during Corona pandemic has validated by calculating the phrase correlation factor with axis overall degree to that it belongs. Table 5 shows the results.

Table (5)

Correlations between each phrase degree and E-gaming reality overall degree

Phrase No.	**Correlation**	Phrase No.	**Correlation**	Phrase No.	**Correlation**
1.	**.360****	.8	**.280****	**15.**	**.426****
2.	**.250****	.9	**.381****	**16.**	**.252****
3.	**.381****	.10	**.477****	**17.**	**.351****
4.	**.250****	.11	**.327****	**18.**	**.292****
5.	**.313****	.12	**.258****	**19.**	**.262****
6.	**.221****	.13	**.417****	**20.**	**.433****
7.	**.327****	.14	**.249****		

Tabulated value correlation at the level (0.05) = .190

Table (5) shows correlation values transactions between the phrase score and the scale overall score are greater than the tabulated value at the level (0.05), indicating the scale consistency.

(b) The reliability of the questionnaire:

The reliability of the questionnaire has been calculated by Cronbach's Alpha and illustrated in table (6).

Table (6)

Correlations between each phrase degree of E-gaming reality questionnaire with axis overall degree to that it belongs

Phrase No.	**Correlation**	**Phrase No.**	**Correlation**	**Phrase No.**	**Correlation**
1.	**.556**	.8	**.563**	**15.**	**.550**
2.	**.588**	.9	**.585**	**16.**	**.581**
3.	**.552**	.10	**.541**	**17.**	**.574**
4.	**.566**	.11	**.590**	**18.**	**.571**
5.	**.560**	.12	**.565**	**19.**	**.593**
6.	**.570**	.13	**.547**	**20.**	**.546**
7.	**.558**	.14	**.567**		

From table (6) reliability correlation values are lower than the axis reliability factor to that the phrase belongs, i.e. all phrases are fixed, as phrase intervention does not reduce the total domain reliability factor to that the phrase belongs. Reliability correlation values ranged from (0.593-0.541).

The scale reliability was measured in two ways, Cronbach's Alpha and split half after applying Spearman equation to the correlations between the two halves of the phrases as illustrated in table (7).

Table (7)

Cronbach's Alpha, split half, and Guttman coefficients

Factor	Correlation
Cronbach's Alpha	**.574**
split half	**.485**
Guttman	**.547**

Table (7) shows that the Cronbach's Alpha reliability values for scale axis were (0.574) and higher than the value in the split half, that indicated the reliability and scale applicability to the study sample.

B. The scale of measuring the effect of E-games on kindergarteners' developmental domains

The researchers prepared the scale to identify the effect of E-games on kindergarteners' development, and it consisted of (34 phrases) divided into three domains described in the following form:

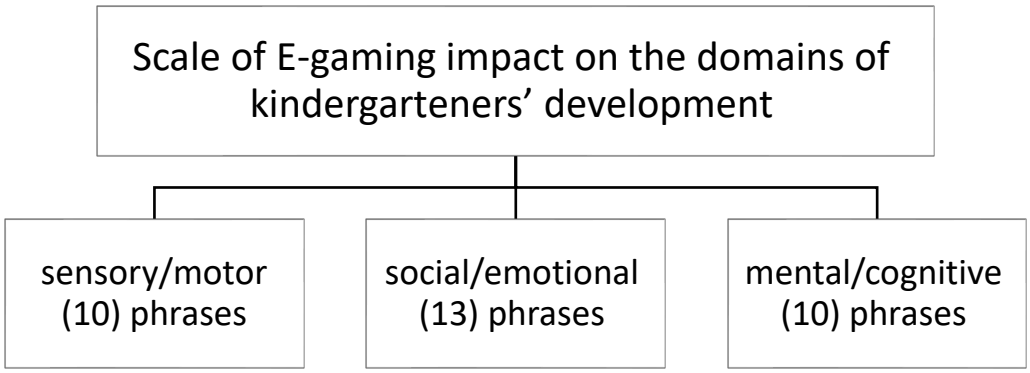

Diagram (1)

Demonstrates the scale that measures the effect of E-games on kindergarteners' developmental domains

The researchers verified the psychometric characteristics of the scale that measures the effect of E-games on kindergarteners' developmental domains as follows:

A. **Validity**:

The researcher also conducted an exploratory analysis to verify the validity of the scale that measures the effect of E-games on kindergarteners' developmental domains

By subjecting correlation matrix between (34) scale phrases in the pilot study mothers (75), the general analysis was re-conducted on (34) phrases, and it became clear after verifying the high correlations between the scale phrases, and conducting basic tests to verify validity for general analysis.

The validity of the analysis of the obtained data was verified, and it was calculated in principal components' style and it resulted in five factors extraction after the axes Varimax rotation. Saturations were significant with saturation limit of (0.30), and factors extracted were (5). Thus, factors extracted and saturated became (10) phrases and more, and phrases were (34). These factors have greater underlying roots than (1), and collectively interpreted (222.34) of the total variation between the scale phrases.

Table (8)

Saturated phrases with factors

Phrase No.	1st factor	2nd factor	3rd factor
9	.985		
10	.985		
4	.797		
7	.780		
6	.758		
5	.702		
2	.672		
3	.671		
6	.655		
1	.454		
23		.827	
17		.791	
18		.768	
11		.755	
20		.751	
13		.749	
22		.744	
19		.726	
14		.719	
21		.673	
16		.520	
15		.507	

Phrase No.	1st factor	2nd factor	3rd factor
12		.426	
33			.987
32			.984
29			.979
25			.972
28			.965
27			.886
34			.867
24			.584
30			.575
26			.567
31			.337
Underlying roots	7.432	8.955	8.703
Variation ratio	%74.32	%68.88	%79.14
Total			222.34

- Factor 1: saturated of (10) phrases, and saturation values ranged from (.985-.454) to underlying root (7.432) and variation rate of (%74.32). This factor can be names as the mental/cognitive domain.
- Factor 2: Saturated of (13) phrases, and saturation values ranged from (.827-.426) to underlying root (8.955) and variation rate of (%68.88). This factor can be named as emotional/social domain.
- Factor 3: Saturated of (11) phrases, and saturation values ranged from (.987 -.337) to underlying root (8.703) and variation rate of (%79.14). This factor can be named as the dynamic/motor sensory domain.

Internal consistency:

The consistency of the scale that measures the effect of E-games on kindergarteners' developmental domains was verified by calculating the phrase correlation factor with the overall domain degree to that it belongs, as shown by the results in Table 9.

Table (9)

Correlations between each phrase degree and E-gaming impact overall degree on the children's development domain

Phrase No.	Correlation	Phrase No.	Correlation	Phrase No.	Correlation	Phrase No.	Correlation	Phrase No.	Correlation
1.	.552**	8.	.616**	15.	.485**	22.	.659**	29.	.609**
2.	.555**	9.	.680**	16.	.262**	23.	.557**	30.	.655**
3.	.574**	10.	.685**	17.	.647**	24.	.687**	31.	.657**
4.	.642**	11.	.657**	18.	.556**	25.	.627**	32.	.609**
5.	.574**	12.	.284**	19.	.377**	26.	.441**	33.	.620**
6.	.612**	13.	.276**	20.	.245**	27.	.526**	34	.446**
7.	.622**	14.	.275**	21.	.554**	28.	.623**		

Tabulated correlation value at the level (0.05) = .190

Table (9) shows that correlation transactions values between phrase score and the scale overall score are greater than the tabulated value at the level (0.05), indicating scale consistency.

B. **scale reliability**:

Cronbach's Alpha reliability has been calculated by finding the correlation factor between each phrase with the overall domain degree to that it belongs and illustrated in table (10)

Table (10)

Correlations between each phrase degree of the scale that measures the effect of E-games on kindergarteners' developmental domains with overall domains degree to that they belong

Phrase No.	Correlation	Phrase No.	Correlation	Phrase No.	Correlation	Phrase No.	Correlation	Phrase No.	Correlation
1.	.729	8.	.728	15.	.732	22.	.738	29.	.729
2.	.730	9.	.728	16.	.736	23.	.741	30.	.740
3.	.730	10.	.729	17.	.728	24.	.728	31.	.739
4.	.727	11.	.728	18.	.730	25.	.728	32..	.729
5.	.729	12.	.737	19.	.734	26.	.734	33.	.729
6.	.728	13.	.737	20.	.737	27.	.734	34.	.735
7.	.728	14.	.737	21.	.738	28.	.729		

From table (10), reliability correlation values are lower than the axis reliability factor to that the phrase belongs, i.e. all phrases are fixed, as phrase intervention does not reduce total domain reliability factor to that the phrase belongs. Reliability correlation values ranged from (.737-.728).

Scale reliability was measured in two ways, Cronbach's Alpha and split half after applying Spearman equation to the correlations between the two halves of the phrases as illustrated in table (11).

Table (11)

Cronbach's Alpha, split half, and Guttman coefficients

Factor	Correlation
Cronbach's Alpha	.739
split half	.684
Guttman	.715

Table (11) shows that the Cronbach's Alpha reliability values for scale axis were (0. 739) and higher than the value in the split half, that indicated the reliability and scale applicability to the mothers participating in the study.

Study procedures:

After taking country's authorities approval, the tools were prepared, and the sample was approved for the application. The link was published to the study sample, and all of them have answered the scale. The statistical analysis for the results was carried out using the Statistical Packages for Social Sciences Program (SPSS) with the aim of verifying the study questions to reveal the educational practices of children E-games and their impact on their developmental domains; regarding the interpretation of the results and the theoretical framework and studies related to study subject.

The five-point Likert scale was used; its responses ranged from strongly agree (5) to (1) for strongly disagree. The researchers also adopted the following classification of evaluation levels as follows:

**The evaluation and its levels were divided by experts and juries of the questionnaire and scale, where the questionnaire was from five levels as (5) indicated "very high" to (1) that indicated "no" as follows:

From	To	Evaluation
1	**1.49**	**Very low**
1.5	**2.49**	**Low**
2.5	**3.49**	**Average**
3.5	**4.49**	**High**
4.5	**5**	**Very high**

IV. STUDY RESULTS AND DISCUSSION:

This section displayed study results and its discussion with the aim of identifying children E-gaming reality, and its effect on the child developmental domain from mothers' pint of view. The results of the first main question: " First: What is the reality of children's playing E-games during Corona domestic ban?"; and this was branched out into the following sub-question:

1- What kind of games does a child play during the domestic ban?

Based on application of the questionnaire to the sample who reached (150) kindergarteners' mothers and the used descriptive statistics methods of determining the mean, standard deviations and ranking; the following results in table (12) were reached.

Table (12)

Child statistical indications of E-gaming type during Corona domestic ban

Statistics / Phrases	Mean	S.D.	Ranking	evaluation
1	**4.13**	**0.99**	**1**	High
2	**2.5**	**1.08**	**20**	Average
3	**3.52**	**1.34**	**7**	High
4	**3.25**	**1.07**	**13**	Average
5	**2.96**	**1.08**	**15**	Average
6	**3.01**	**1.16**	**14**	Average
7	**3.36**	**1.06**	**10**	Average
8	**3.35**	**796**	**11**	Average
9	**4.05**	**998**	**3**	High
10	**3.49**	**1.15**	**8**	Average
11	**2.81**	**1.18**	**17**	Average
12	**4.08**	**983**	**2**	High
13	**3.44**	**1.14**	**9**	Average
14	**2.53**	**1.14**	**19**	Average
15	**3.6**	**929**	**6**	High
16	**2.92**	**1.22**	**16**	Average
17	**3.74**	**931**	**5**	High
18	**3.76**	**916**	**4**	High
19	**2.54**	**1.11**	**18**	Average
20	**3.32**	**1.16**	**12**	Average
Total	**3.31**	**0.505**		Average

From table (12) mean rate of total practice was (3.31), Standard deviation was (505.). Phrase (1) came in first place with a high rating, while phrase (2) came last with an average rating. The following form shows E-gaming practices mean rate during the ban period:

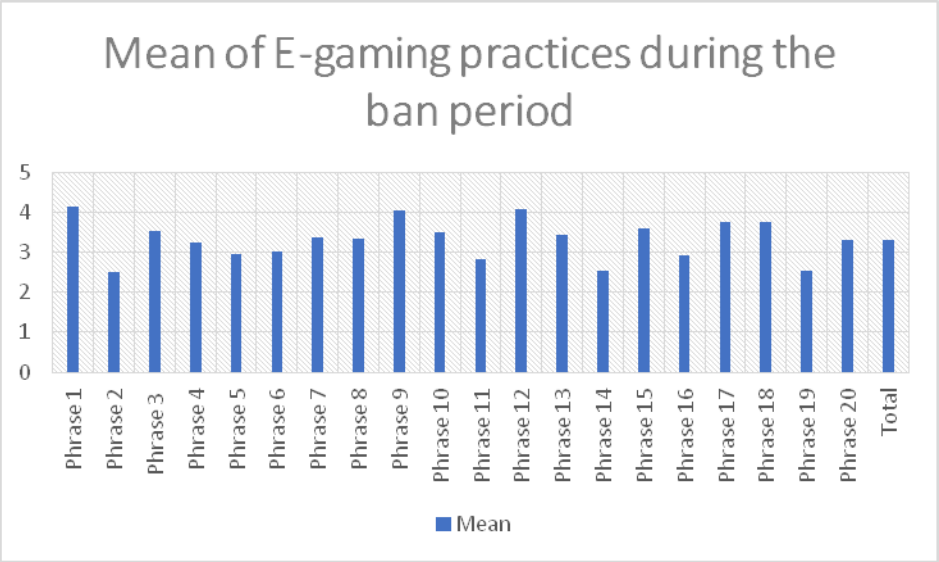

Diagram (2)

E-gaming practices mean during the ban period

From Diagram (2), the most practices performed by children were as follows:

- Mothers replied that children routine changed very much during the ban.
- Children were late and did not get enough sleep.
- Some children were playing motor (physical) games as running, jumping, and others at home.
- Some children sometimes practiced painting and coloring activities while staying at home and sometimes shared food preparation with the mother at the beginning of the domestic ban.
- Some mothers shared their children's play activities and read stories and tales for them.

As for children's E-gaming:

Questionnaire results showed that some practices had approvals from mothers by a high percentage as the following:

- Families were keen to provide E-devices for children to use to play.
- Most children preferred to play E-games than traditional ones.
- Number of hours children spent playing E-games had increased by more than 5 hours per day and might even increase to most hours of the day and night, and many mothers found it difficult to control it.
- Male children prefer adventure E-games more than females.
- Many mothers have left children free to choose their favorite E-games.
- Children could search for games on the Internet.

Some child's activities and practices have received a moderated degree in accordance with mothers' opinions:

- Some mothers participated in E-games selection.
- Some mothers were keen to see the game before the children played it.
- There is no difference between males and females who all preferred E-games from sensory games.
- Many mothers allowed children to participate in play groups.
- Some mothers found it difficult to identify the right games for their children.

2. Are there statistically significant differences between males and females in their playing preferences from parent's point of view?

Frequencies, means, standard deviations and significance between means of mother's responses about the male-female differences in play preferences has been calculated as described in table (13)

Table (13)

Significance of differences between male and female children in play preferences from mothers' point of view (N=150)

Gender	**Freq.**	**Mean**	**S.D.**	**T**	**Sig.**
Male	**97**	15.5263	2.72860	1.98	.457
Female	**53**	15.0811	2.41958		

From table (13): boys' frequencies were (38) as opposed to girls (37), and boys' E-gaming mean was (15.5263) with standard deviation (2.72860), while the mean for girls was (15.0811) with standard deviation (2.41958). The calculated *t*-value was (0.457) and is less than the tabulated value (0.747).

Thus, there are no statistically significant differences at the level (.05), as E-games and preferences do not affect males and females from the mothers' point of view.

Second: What is the effect of children's E-games playing on the developmental domains during Corona crisis from parent's point of view?

The following question is derived from the above question:

1. What is the impact of children's E-games playing on their mental/cognitive development from parent's point of view?

Mothers' responses were calculated on the scale that measures the effect of E-games on child developmental domains. First domain is (mental/cognitive).

Table (14)

E-games impact statistics on cognitive mental development

Statistics / Phrase No.	Phrase	Mean	S.D.	Rank	evaluation
1.	E-games develop child attention and focus	2.96	1.13	10	Average
2.	E-games develop child intelligence	3.04	1.05	8	Average
3.	E-games contribute to children math and science education	3.01	1.03	9	Average
4.	E-games contribute to children creativity	3.08	1.13	3	Average
5.	E-games increase the child's ability to solve problems	3.06	1.06	5	Average
6.	Online games help develop a child's language	3.07	1.14	4	Average

7.	E-games encourage self-learning in children	3.05	1.1	6	Average
8.	E-games improve the child's motivation for learning	3.05	1.09	7	Average
9.	Technological games help children learn by trying and making mistakes.	3.79	0.948	1	High
10.	E-games enhance a child's technology skills	3.77	0.923	2	High
Total		3.18	0.314		Average

Table (14) shows statistics of mothers' responses to the scale phrases (means - standard deviation - grades - evaluation) on cognitive mental development. Mean for responses ranged from (3.79-2.96) and the overall practice mean was (3.18) with a standard deviation (314.). Phrase "9" came in first place with a high evaluation, while phrase "1" came in the last place with an average evaluation. The following form shows mental development means rate:

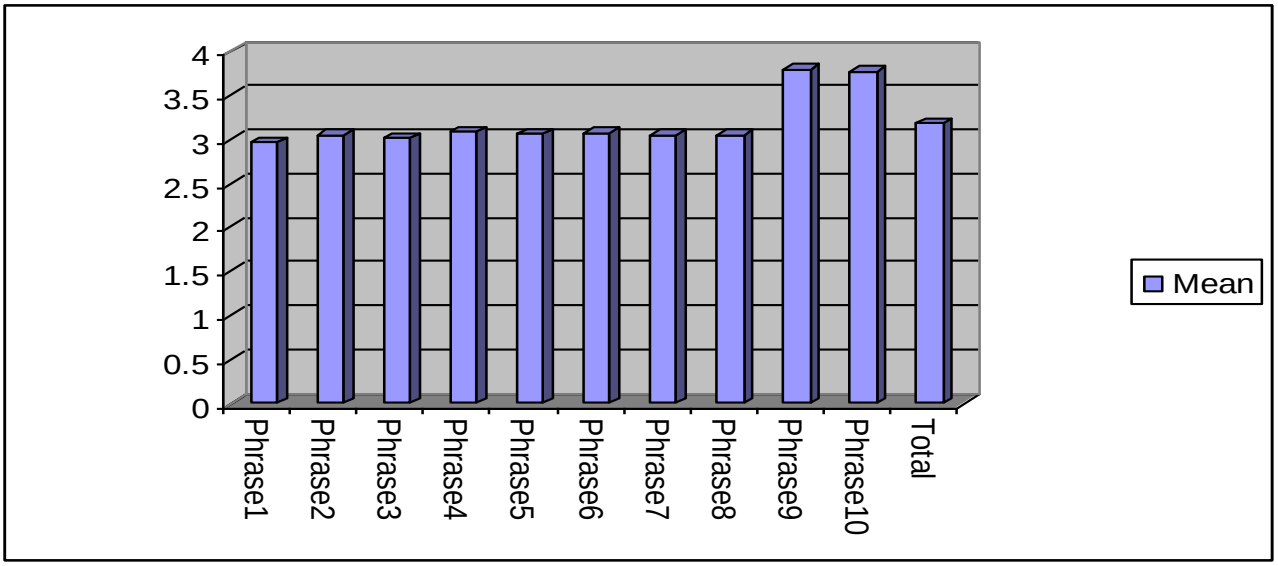

Diagram (3)

The mean of mothers' responses to the scale that measures the effect of E-games on a child's cognitive mental development

This indicated that the effect of children E-gaming on cognitive mental development is moderate.

The researchers explain this by stating that if E-games are best used they would increase children's motivation to learn due to their challenge. By doing so, the child solves problems through self-learning, attempt, and encourages thinking. This result is consistent with the results of Al-Ansari's study (2020), who shown that E-games affect the child education to a moderated degree, especially in items related to imagination, dealing with modern technologies, the ability to solve problems and developing the child's perceptions. It differed with the studies: (Nimr, 2017; Al-Dweri & Al-Mashaqbeh 2014; and Maitem, et al., & Tanguilig 2012) whose their results demonstrated the effectiveness of E-games on raising children math achievement as well as developing their ability to use self-learning.

The current study also found that E-games have a negative impact on children's attention. The researchers explain that by clarifying that children spent much time playing games. This finding is consistent with the studies of (Al-Sabban, et al., 2021; Othman 2018; and Lange, et al., 2017) that explained that E-games resulted in children distraction and lack of concentration.

Second sub-question results,. What is the impact of children's E-games playing on their emotional/social development from parent's point of view?

Mothers' responses about the effect of E-games on child's emotional/social development were calculated.

Table (15)

E-games impact statistics on emotional/social development

Statistics / Phrase No.	Phrase	Mean	S.D.	Rank	evaluation
1.	E-games teach self-confidence	3.13	1.04	11	**Average**
2.	E-games affect children's social values	4.43	0.596	1	**High**
3.	E-games distract the child from sitting down and talking to the family	4.35	0.567	3	**High**
4.	E-games make the child sit alone for a long time	4.41	0.639	2	**High**
5.	E-games train children to collaborate with others to win	3.26	1.03	9	**Average**
6.	E-games made the child very social	2.23	0.863	13	**Low**
7.	E-games contribute to a child's win and loss.	3.20	1.03	10	**Average**
8.	Online games teach children patience	2.83	1.04	12	**Average**
9.	E-games increase child violence	4.02	0.900	5	**High**
10.	Online games put children under bullying	3.92	0.940	7	**High**
11.	I see the games are making children more worried.	4.17	0.828	4	**High**
12.	E-games increase senses of responsibility	3.76	0.970	8	**High**
13.	E-games teach children deception and lying behaviors	3.96	0.992	6	**High**
Total		3.66	0.861		**High**

Table (15) shows statistics (mean - standard deviation - grades evaluation) about the social/emotional development. Emotional/social development means ranged from (4.43-2.23) to total practice at (3.66) with a standard deviation (681.). Phrase '2' came first with a high rating. Phrase "6" came in last place with a low rating. The following form shows social development means:

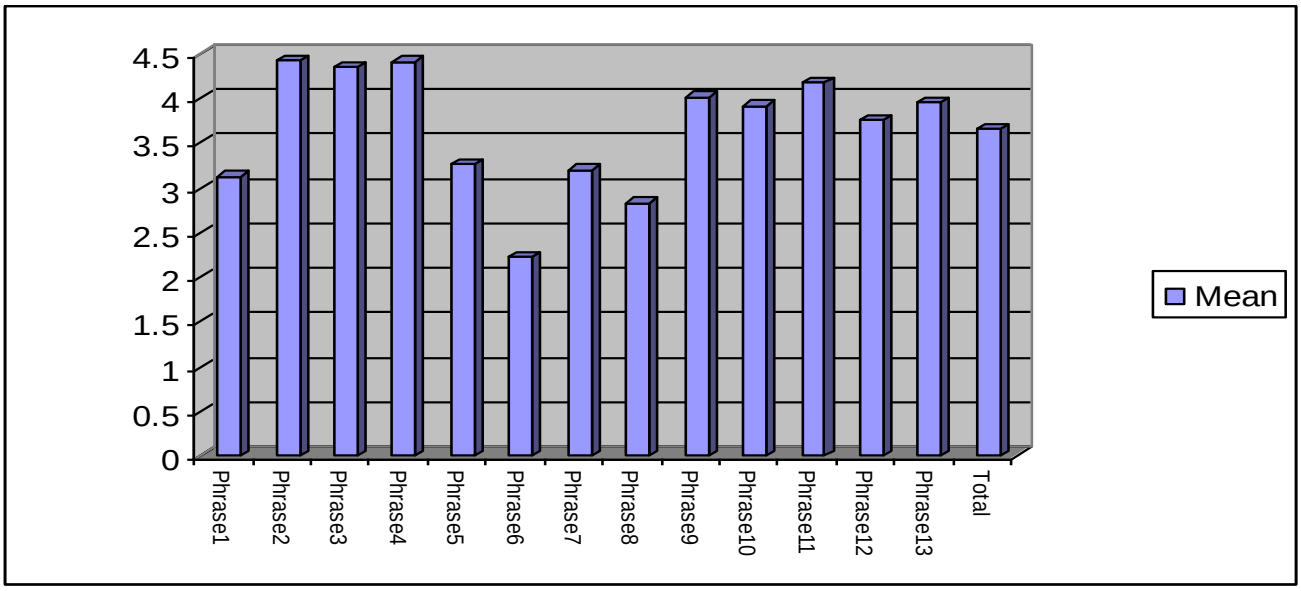

Diagram (4)

The mean of mothers' responses to the scale that measures the effect of E-games on the emotional/social development was calculated.

The effect of children E-gaming on emotional/social development is significant.

The researchers attribute this finding to the tendency of kindergarteners to imitate everything they see or hear in order to practice it later. In addition, parents are busy and this makes them leave their children playing E-games for long periods without realizing age period their children go through, and even without awareness of these E-games disadvantages. This affected children values and their social relationships.

This is consistent with (Al-Waer, 2017) who emphasized that E-games negatively affect child behavior, especially the social and violent aspects. It also agrees with the (Bobidi, et al., 2019; Hijazi, 2017; Teasdale, et al., 2013; Irani, et al., 2014; and Quaider, 2012) that confirmed the effect of E-games on children's psychological compatibility and social behavior. It affirmed that E-games make children lose social relationships with their surroundings and tend to be isolated. The results are also consistent with (Hassan, 2020; Hassan, 2017; Younis, 2017; and Al-Sawalha, 2016) who showed the effect of E-games on the aggressive behavior and social behavior in children including factors like isolation, tension and violence, making the child has no friends, becomes shy, and cannot express himself.

Third sub-question results: " What is the impact of children's E-gaming on their sensory/motor development from parent's point of view?"

The responses of mothers about the effect of E-games on the child sensory/motor developmental aspects were calculated.

Table (16)

E-games impact statistics on sensory/motor development

Statistics / Phrase No.	Phrase	Mean	S.D.	Rank	evaluation
1.	E-games train children to speed up work and achievement	**2.97**	**0.958**	**11**	**Average**
2.	Too much sitting while playing makes children obese.	**3.85**	**1.09**	**9**	**High**

Statistics / Phrase No.	Phrase	Mean	S.D.	Rank	evaluation
3.	The child feels stressed and tired during staying up and playing for a long time	**4.52**	**0.579**	**1**	**High**
4.	Children's eyes strain from exposure to screens for a long time	**3.86**	**1.03**	**8**	**High**
5.	E-games aid in better hand control	**3.88**	**1.03**	**6**	**High**
6.	E-games make child's eye and hand movement more consistent	**4.45**	**0.646**	**2**	**High**
7.	E-games accelerate the reaction time in children	**4.30**	**0.787**	**4**	**High**
8.	E-games increase the child's visual response speed	**3.89**	**0.994**	**5**	**High**
9.	E-games train the child to control the keyboard	**3.87**	**1.00**	**7**	**High**
10.	E-games develop attention to sound and movement	**4.44**	**0.682**	**3**	**High**
11.	Playing for a long time affects spine	**3.20**	**1.17**	**10**	**Average**
Total		**3.93**	**0.49**		**High**

Table (16) shows statistics of (mean - standard deviation - grades evaluation) on motor (physical) development. Phrases' means ranged from (4.52-2.97) to total practice at (3.93) with a standard deviation (498.). Phrase "3" came in first place with a high evaluation. Phrase "1" came in last place with an average rating. The follow following form shows the movement development means:

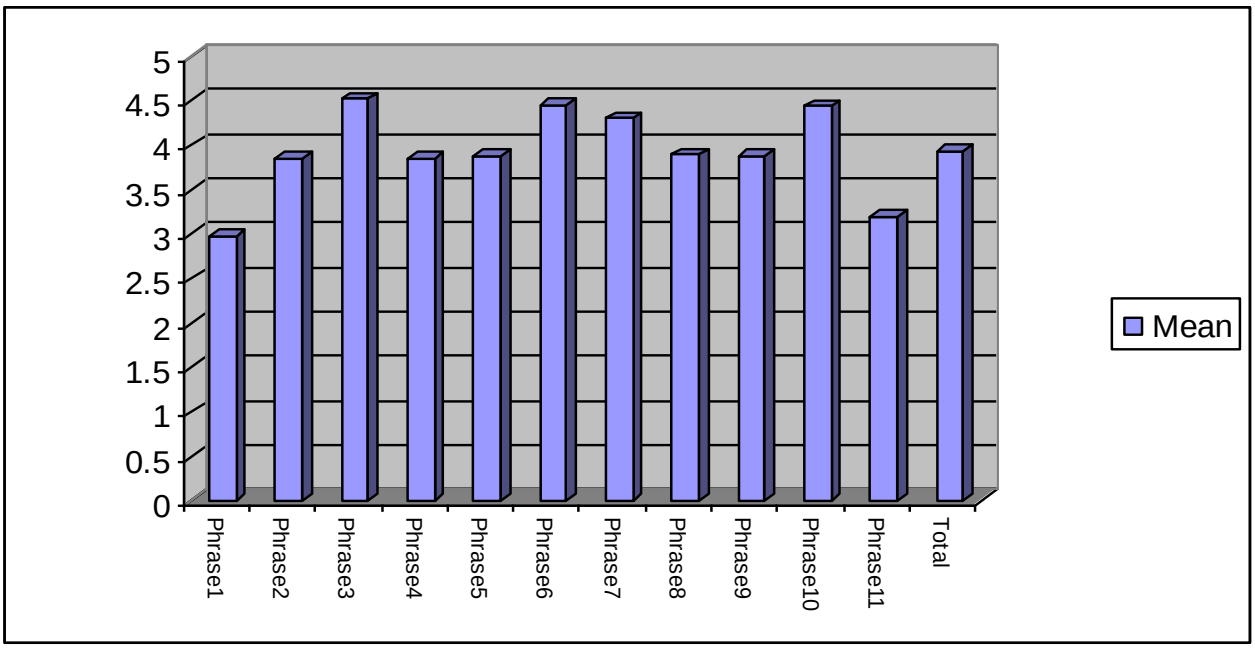

Diagram (5)

The mean of mothers' responses to the scale that measures the effect of E-gaming on sensory/motor developmental domains.

Children E-gaming impact on sensory/motor development is significant.

The researchers attribute this result to the fact that children stayed up late and did not get enough sleep and this led to them to feel stress, as well as the effect on children's eyes and spine.

This result is consistent with (Al-Ansari, 2020; Barhoumi 2020; Attia, 2019; and Hijazi, 2010), who confirmed that E-games play a role in weakening children's muscles and joints, and making hands and fingers numb due to excessive stress. As well, they make visual impairment, brain development problems, and poor appetite/obesity and malnutrition.

Fourth sub-question results, "Are there statistically significant differences among children in the E-gaming impact on children's development due to the gender from mothers' view?"

To ensure that there are differences between the growth/ development of male and female children resulting from playing E-games; frequencies, means, standard deviations and the significance of differences between means of two independent groups were calculated, as described in table (17)

Table (17)

Significance of differences between male and female children means in development (N=75)

Domain	Gender	Freq.	Mean	S.D.	Tabulated T	Calculated T	Sig.
Mental/cognitive	Male	38	33.1316	8.13126	1.660	.210	Not Sig.
	Female	37	30.7568	8.13909			
Social/emotional	Male	38	48.4474	6.19371		.213	Not Sig.
	Female	37	46.8919	4.34475			
Sensor/motor	Male	38	44.4474	6.32326		.758	Not Sig.
	Female	37	43.9730	6.95815			

From table (17), boys' frequencies were (38) as opposed to girls (37), and boys' group mean was (33.1316), with a standard deviation (8.13126). The mean for the girls' group was (30.7568) with a standard deviation (8.13909), and the calculated *t*- value was (.210), and this is less than the tabulated value (1.660), and it is not significant value at (0.05) in cognitive mental development.

Boys' group mean was (48.4474), with a standard deviation (6.19371). The mean for the girls' group was (46.89198) with a standard deviation (4.34475), and the calculated t-value was (.213), and this is less than the tabulated value (1.660), and it is not significant value at (0.05) in social emotional development.

Boys' group mean was (44.4474), with a standard deviation (6.32326). The mean for the girls' group was (43.9730) with a standard deviation (6.95815), and the calculated *t*- value was (.758), and this is less than the tabulated value (1.660), and it is not significant value at (0.05) in sensory/motor development.

Accordingly, there are no statistically significant differences at the level (05.) between the effect of children' E-games playing and their cognitive/mental , social/emotion, and sensory/motor development in relation to their gender from mothers' point of view.

The researchers explain this by stating the fact that children of different gender are interested in E-games due to their ease of use, especially because they can play them at home, and mobile phone is considered the most used means of playing. E-games have become a child's daily life routine during the domestic ban and with the absence of parents who are usually busy and who allow children to play games for long periods.

This is consistent with Al-Ansari, (2020), who stated that there are no significant differences between the means of responses of E-games effect depending on the child's gender. The result was combined with Al-Waer (2017), that proved that there is a difference between the male and female, because E-games are very sophisticated and enjoyable for both of them.

V. CONCLUSIONS:

The current study aimed to identify the reality of children E-games during the domestic ban and its effect on children development from mothers' point view. Based on applying the study tools and the statistical analysis of the results, the study reached the following conclusions:

1. Hours children spend playing E-games increased by more than (5) hours per day, while their playing decreased for other activities such as traditional games, motor activities, painting, listening to stories, and helping the mother in housework.
2. Children's boredom, stress, sleep disorder and anxiety have increased.
3. Parents agreed on children playing E-games to reduce children's discomfort and keep them calm.
4. E-games had a varying impact on developmental aspects in various ways from mothers' point of view; with a high significant impact on the emotional/social domain, followed by the sensory/motor domain, while the effect on the mental and cognitive domain was moderated.
5. There are no significant differences between boys and girls in their preference for E-games, or even the effect of E-games on the children's developmental domains.

VI. STUDY RECOMMENDATIONS:

Regarding the findings, the study recommends:

- Raising parents' awareness about the. Pros and cons of E-games.
- Inform Parents about the E-games that suit there children age.
- Increasing parents' knowledge about the different needs of children development/growth at each age. And achieving them it the best way.
- Increasing parents' knowledge about the role of E-games towards their children development.
- Teaching parents how to be a good model for children to rationalize the use of E-devices
- Continuously discuss children about what they watch or play and providing them with enough knowledge about it.
- Designing E-games that suit different children needs and levels and help them to acquire acceptable ethics or values.
- Emphasizing The. importance Of parents Role in guiding. children To. play. E-games, that depend on Activities. that develop Thinking. and creativity, correctly .
- Asking the responsible authorities to control the spread of the sold E-games on The market and this with the assistance of a. committee .psychologists, .educators, .and. sociologists
-

VII. SUGGESTED STUDIES:

- Conduct further studies on the effect of E-games on children's behavior
- Conduct experimental studies to see the effect of E-games on ordinary children development and, also, those with special needs.
- Provide studies to educate the child about the rights, duties and laws governing individual's relationship during electronic communication.

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