

## Research Article

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**Author for correspondence:**

Mo'en Salman Alnasraween

✉ [moen.na@yu.edu.jo](mailto:moen.na@yu.edu.jo)

✉ Yarmouk University, Counseling and Education Psychology, Jordan

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## The Role of Parents in Achieving Digital Security for Kindergarten Children in Jordan and Saudi Arabia

Iyad Jiries Shawareb, Mo'en Salman Alnasraween, Maha Khaled Al Qasas, Geda Emad Abduldaim

**Abstract**

**Background/purpose.** This study aimed to investigate the role of parents in achieving digital security for kindergarten children in Jordan and Saudi Arabia. The study sample consisted of 404 parents, selected by convenience methods from the Hashemite Kingdom of Jordan and the Kingdom of Saudi Arabia.

**Materials/methods.** The digital security scale, which in its final form consisted of 33 items, was used. The validity and reliability of this scale were verified.

**Results.** The study results showed that the mean of parents' role in achieving digital security for kindergarten children in Saudi Arabia and Jordan was moderate. The results also revealed statistically significant differences in the total score of the means due to gender in favor of mothers. The results also indicated no statistically significant differences between the means of parents' roles due to country (Jordan, Saudi Arabia).

**Conclusion.** The results highlighted the crucial role of parents in achieving children's digital security. Moreover, the study results indirectly indicated that parents in Jordan and Saudi Arabia were similarly concerned about the importance of educating their children about the risks of neglecting digital security.

## 1. Introduction

As the world rapidly shifts toward a new digital age, its characteristics, features, and requirements have changed from the past. This change has affected all areas of life, educational, scientific, social, economic, and emotional, in various ways. This requires us to adapt to this tremendous progress and strive to benefit from the digital revolution and the modern information transformation (Akman et al., 2023).

In light of the digital revolution and the rapid development of the internet, the characteristics and features of the societies in which we live have changed in all social, educational, and economic aspects (Sari et al., 2024). In the past, parents focused their efforts on maintaining the safety and security of their children. In the modern world, this includes maintaining children's safety online (Livingstone & Byrne, 2022; Nudin, 2024).

## 2. Literature Review

Digital security is a set of preventative measures and procedures aimed at protecting individuals, especially children, from the risks associated with using the internet, such as harmful content, cyberbullying, privacy violations, or uncontrolled use of technology (Abdul Wahid, 2020; Nikken & Jansz, 2013).

The child has come to live in a virtual environment governed by the Internet, electronic games, television programs, and smartphones, which expose the child to a virtual world that confuses the child's perception, affects his relationship with others, and turns him into a digital child. Technology has taken control of their minds in all its forms, and they have excelled in it over adults (Ismail & Alghamdi, 2022; Livingstone & Byrne, 2015).

Hence, it is the parents' duty to fill the gaps and supervise children's internet use by monitoring the time spent on smart screens, the content, and the age-appropriate materials they contain (Naz & Ahmed, 2024). There are several programs and tools that parents can use to help them maintain their children's digital safety. Therefore, digital safety has become widespread, helping parents guide their children in the proper use of what they watch (Embiring, 2024).

This digital revolution has brought with it a wealth of diverse applications, each with its own unique functions and objectives. In terms of ease of use and application, they were once restricted to adults, but now they are available to all ages and all segments of society. Parents are caught in the middle of a changing online world and are increasingly trying to protect their children from this open world (Zeeshan & Shahid, 2024; Sharevski & Vander Loop, 2023).

The diversity of Internet applications, their different functions, and the means of dealing with them over the past few years have led to its transformation into a means of attracting diverse groups of people with different interests. While its use was previously limited to adults and researchers, it has now spread to include a large segment of children, adolescents, and young people who have found it an enjoyable means of fulfilling many of their desires and highlighting their personalities. Perhaps the most prominent of these applications that have attracted children, adolescents, and young people are social networks (Lewis et al., 2023).

These technological influences and the digital revolution have impacted all social, economic, and educational aspects, creating challenges for parents and their children, including the time children spend on smart screens and the content on internet programs that is inappropriate for their children (Alnasraween et al., 2021). This has resulted in psychological and social problems for children due to misuse. Numerous studies have demonstrated the problems and challenges of regulating children's use of internet programs. Parents cannot be separated from their responsibilities in providing education for their children. However, with each new era of development, the role of parents also

changes. Furthermore, children growing up in the digital age are markedly different from those who grew up in the 1980s. As a result, the education provided by parents in the digital age is different (Mangunsong, 2022; Akter et al., 2022).

Raising a child is considered one of the most important responsibilities of the family. Today's children live in a comprehensive communication environment governed by satellite channels, smartphones, electronic games, and the internet. This requires the family to have educational functions that contribute to the sound social upbringing of the child in light of the changes of the digital age, which must contribute to shaping his awareness in light of the system of basic values that constitute the personality (Dedkova et al., 2022).

The family cannot hide the child's eyes from all these communication materials. It has become imperative to search for a solution to achieve a balance between protecting our values and culture on the one hand and openness to universal values and other cultures and respecting the values of pluralism on the other hand (Modecki et al., 2022; Windasari & Dheasari, 2024).

Child digital security is a family and societal responsibility, extending beyond mere provision of food, clothing, and housing, or offering health and material services, to also include preventing physical harm and injury (Tan et al., 2025).

In this vein, Stoilov et al (2023) consider that children's digital security is a preventative process and psychological, moral, ethical, and human fortification, first and foremost, after it became a global complaint that troubles the entire human community. It has become one of the most dangerous and thorny issues that requires a strategy and societal culture to succeed, despite the confirmation of numerous studies in many countries, even advanced ones, that parents themselves are still not fully aware of the risks that their children are exposed to from the world of the Internet (Tuukkanen & Wilska, 2023).

A child's personality is shaped through his interactions with his family, and his compatibility or lack thereof depends largely on the family upbringing he receives from his family, with the aim of developing his personality healthily. A person is not born as a person, but rather as an individual, and then he gradually begins to acquire his personality in the social environment in which he is born. The family is the first link in this broad social environment (White et al., 2024). It is the one that transforms him from a biological being into a social being, providing him with the culture and heritage of his society, connecting him to his society, and teaching him the abilities and skills necessary to perform work that will sustain him in the future. It represents a social institution that includes various family, educational, cultural, social, religious, and political functions (Quayyum, 2021; Livingstone & Byrne, 2017).

However, with the development of human society and the social change that accompanied it, the family lost most of these functions, and nothing remained for the family except the function of childbearing. With mothers going out to work outside the home, the family began to resort to social institutions to help them raise their children (such as nurseries and kindergartens) because the parents no longer had enough time to care for their children, as they are the parents responsible for raising the child (Jand & Ko, 2023).

This led to incomplete socialization of the child and to his acquisition of fragile values and customs that quickly dissolve, especially after entering social institutions that follow the family, such as school and peer groups. Consequently, he merges with modern technology and exciting digital applications, which may affect his behavior and thus his deviation (Wang et al., 2021).

The negative effects of digital applications include irritability and violence in children, confusion and a disconnect from their natural instincts due to the content they read, and a tendency to escape reality (Livingstone & Helsper, 2008).

The lack of continuous and permanent supervision and follow-up by the family on the child when dealing with digital applications may expose the child to spending a long time on these applications, affecting family relationships. It may also expose the child to pornographic images and sites that affect his life psychologically, as these images disturb the child's instinct. In addition, the child may live in illusions and increase his isolation, depression, and anxiety, in addition to the increase in violent electronic games to violence, and perhaps this virtual world may increase introversion and loss of real-life experiences (Tuukkanen et al, 2023).

The preschool period represents a critical stage in shaping a child's behavioral and cognitive habits, during which family practices play a pivotal role in guiding safe digital use. The role of parents in creating a safe digital environment for young children can be understood and explained through two complementary theoretical frameworks: Albert Bandura's social cognitive theory (1986) and Vygotsky's sociological educational theory (1978).

From Bandura's (1986) perspective, behavior is shaped by the interaction of various behavioral, environmental, and cognitive factors. Social cognitive theory highlights the importance of learning by observation and modeling observed behavior. When young children observe their parents behaving in specific, safe ways when using digital devices, such as setting clear rules, using privacy settings, or discussing the content of a website before allowing access, this provides powerful guidance for learning safe behaviors, rather than experiential learning alone.

Parental self-regulation mechanisms—setting rules, following them, and discussing the results with the child—lead children to establish safe digital habits. Vygotsky (1978) also argues that cognitive development occurs within social contexts and through interaction with those with greater knowledge, within what is known as "the world." In the Zone of Proximal Development

Based on the above, parents are viewed as supportive individuals who help a child perform digital tasks beyond their own capabilities through gradual guidance. For example, when a child opens an app for the first time, a parent can sit with them and explain the simple elements of the app. The assistance is then gradually reduced as the child's ability increases. This allows digital skills and behavioral norms to be gradually transferred.

### **2.1. Previous Related Studies**

Al-Kathiri (2024) conducted a study that sought to explore the extent to which parents contribute to supporting children's protection within the digital world, within the city of Riyadh. The study followed a descriptive approach to achieve its objectives. A tool was designed to measure the degree of digital protection for children from the perspective of their parents. Data were collected using a questionnaire administered to a sample of 276 randomly selected parents of preschool children (kindergarten). The results showed that parents expressed positive attitudes toward their children's use of the internet. The results also demonstrated parents' awareness of the potential negative effects of the digital world on children, most notably their awareness that "the digital world may lead to a decrease in children's physical activity." The results also revealed statistically significant differences in parents' responses regarding the positive aspects of their children's use of the digital world, as well as the measures taken to protect them, depending on the type of device available to the child. The differences favored Nintendo users. The study concluded that it is necessary to strengthen measures to mitigate the negative effects of children's use of the digital world, by raising parental awareness and activating their role in providing guidance and oversight.

Al-Sadrani and Al-Mutairi (2024) explored the role of parents in raising cybersecurity awareness for early childhood children. The study sample included 450 parents from the city of Riyadh in Saudi Arabia. The study findings showed that parents have a high awareness of the risks of cyberspace, and play an effective role in educating their children about how to protect their personal information,

avoid unsafe applications, and distinguish between reliable and untrusted sources. It also became clear that this role is more effective among mothers than fathers. Finally, the results showed that there are differences in the level of awareness due to the educational and economic level of parents.

Dahmani and Khalafia (2022) aimed in their study to clarify the concept of digital parenting and identify its most prominent roles in enhancing child protection in digital environments. The study sample consisted of 231 parents. The results revealed that parents' digital awareness and the ability to interact educationally with their children in the digital environment constitute a key factor in protecting children's digital rights. Moreover, the findings pointed out that effective digital parenting is not limited to protection alone, but also includes empowering children to use technology positively.

Abdul Wahid (2020) conducted a study that aimed to explore the role of the family in achieving digital security for kindergarten children in light of the challenges imposed by the digital revolution. The researcher employed a descriptive approach in her study, utilizing a questionnaire as the primary data collection tool. The primary sample for the study included 1,265 parents of kindergarten children in Minya Governorate, Egypt, distributed across the governorate's various centers and some of its villages. The results highlighted the family's limited role in safeguarding children from the risks associated with digital content, the internet, and negative behavioral changes. The results also revealed no statistically significant differences between the responses of parents in cities and rural areas, reflecting the combined impact of technology on everyone.

Naz and Ahmed (2024) conducted a study to explore the educational strategies used by parents to protect their children in the modern digital environment. The study sought to analyze how parents deal with inappropriate content, violent digital games, and online moral hazards. The researchers used the interviews with a sample of 10 parents in Pakistan. The results revealed that parents rely on various methods, including parental control and direct dialogue with the child.

Sari et al. (2024) carried out a study aimed to explore parents' level of digital awareness and their degree of concern regarding their children's digital safety in early childhood. A total of 60 parents were selected, most of whom were mothers. The results showed that parents' awareness of the risks of high-level digital content was concentrated in areas such as passwords, advertisements, and sexual content. A strong and statistically significant correlation of 0.664 was also found between parents' awareness and their concern regarding their children's digital safety.

Embiring et al (2024) conducted a study aimed at measuring mothers' level of digital awareness in protecting their children from the risks associated with using the internet. The participants were 179 mothers of children under the age of 15. The results showed differences between generations X, Y, and Z in the level of digital awareness. Mothers from Generation Y excelled in technical knowledge and security settings. In contrast, Generation Z excelled in follow-up, while Generation X demonstrated greater awareness of risks and a higher ability to communicate with children. The results also revealed that mothers with higher qualifications have excellent theoretical understanding but suffer from weaknesses in the practical application of digital preventive measures.

Jang & Ko (2023) aimed to analyze previous literature on online child and youth safety using the "4 Dangers Framework," which addresses risks related to communication, content, and behavior. The study also conducted a comparative investigation between Australia, Canada, and the United Kingdom, comparing their institutions, governance, and government programs targeting children aged 13 and under. The study revealed that the research in the field of child education studies is insufficient in terms of quantity and quality. The study concluded that to mitigate the four major risks for children and youth in cyberspace, it is essential to maintain a regulatory approach to online exposure for children under 13.

The study also highlighted the importance of a global response to these risks through "multi-level policymaking" and a "multi-stakeholder approach." At the international level, multi-stakeholder discussions should continue within the Organization for Economic Co-operation and Development (OECD) and under the auspices of United Nations bodies to support international cooperation. At the domestic level, the study emphasized the need to establish a dedicated agency responsible for online child and youth safety in each country, involving all relevant stakeholders, including educators and digital companies. She also stressed the importance of collaboration between parents and teachers in facilitating digital education, providing appropriate guidance for children's and youth's online activities, and helping them become more satisfied and productive users in the digital age.

A review of previous studies reveals the importance of the current study's topic. Furthermore, a review of these studies reveals the differences between them in terms of the tools used and the samples studied. What distinguishes this study from other previous studies is the fact that its sample spans two Arab countries. This study also stands out from other previous studies in that it is the only one conducted in Jordan, to the best of the researchers' knowledge, that addresses this topic, given its importance and impact on all aspects of society.

## **2.2. Research Problem**

In light of the information revolution and the digital age, Arab families face numerous challenges, both direct and indirect. The direct challenges are embodied in the fact that many families have too much free time, which leads children to engage in unhealthy behavioral habits and a state of alienation. They also use satellite television, the internet, and smartphones to spend their free time. This is where the external and indirect challenges for the family begin. As a result of life in the digital age, many children are influenced by what is displayed on satellite television, the internet, and smartphones. This influence manifests itself in changes in taste, dress, customs, traditions, and speech patterns, as well as in ways of thinking. This is due to the attractive and exciting elements presented in films, videos, and games for children. These factors are imposed on children in ways they may not be aware of, in a world of ideas, tendencies, values, attitudes, beliefs, and behaviors that are contrary to society and cultural heritage. Children see manifestations and ways of eating and drinking.

Many families also leave their children with their own smartphones and social media accounts, allowing them the freedom to interact online and access YouTube pages, which transports them to a world of unsupervised videos. The child may view pornographic footage, torture scenes, or movies and games that do not reflect the culture and values of Arab society. Many previous studies have emphasized the importance of child protection and the family's role in protecting children from the risks of engaging with digital technology. These include: Lewis et al.'s study (2018: 52), which demonstrated the importance of the mother's role in reading and listening to digital stories online with children, given the effective contributions digital stories make to children through digital technologies. SEAKR et al.'s study (2017: 50) demonstrated that opportunities for closeness between children and parents when engaging with digital technologies positively impact children's engagement with digital technologies and the production of better digital drawings at the age of 3-6 years. Therefore, parents' challenges have come to the forefront in enforcing protection for their children and reducing the hours children spend on smart screens. Another challenge has emerged: Should parental awareness programs be created? Should parenting training courses be held to ensure children's digital safety?

## **2.3. Research Questions**

*What is the role of parents in ensuring digital security for kindergarten children?*

*Are there statistically significant differences at the level of arithmetic means regarding the role of parents in ensuring digital security for kindergarten children according to gender and country?*

## **2.4. Objectives**

The objectives of the research are,

To identify the role of parents in protecting kindergarten children from digital risks.

To monitor methods for protecting children from inappropriate content.

To identify the role of parent-child discussions in building children's awareness of the digital content they view.

To identify the impact of parent-child dialogue in raising children's awareness of the dangers of technology and how to deal with them.

## **2.5. Significance of the Study**

First: Theoretical Significance:

This study addressed an important topic in children's lives: the role of parents in achieving advanced security in the world of technology. This study derives its importance from being one of the studies focused on by researchers in digital security and childhood. This study may also contribute to opening new doors for other researchers and discovering more effective programs for parents to ensure their children's safety and determine their time and content. The results of this study may encourage parents and decision-makers to find the best methods and reliable programs to protect children from the dangers of the digital world.

## **3. Methodology and Procedures**

The descriptive and analytical approach was used,

### **3.1. Study Population**

The study population consisted of parents of kindergarten students in public and private schools in Jordan and the Kingdom of Saudi Arabia, estimated at 35 million parents, according to official statistics in both countries.

### **3.2. Study Sample**

A convenient sample of parents with children in kindergarten in Jordan and Saudi Arabia was selected. The sample numbered 404. They were selected using the convenience sampling method of distributing the scale via social media after it was converted into an electronic format using the Google Drive form. Table 1. shows the distribution of the study sample members according to their gender and country.

**Table 1.** Study Participants According to Their Gender and Country

| Variable | Category     | Frequency |
|----------|--------------|-----------|
| gender   | Male         | 58        |
|          | Female       | 404       |
| country  | Jordan       | 240       |
|          | Saudi Arabia | 222       |

### 3.3. Research Instruments

The tool was developed after consulting theoretical literature and previous studies, such as the Abdul-Wahid (2020) study, Laghfil & Rashid (2024), Nikken and Jansz (2013). The scale in its initial form consisted of 35 items distributed over four dimensions.

#### 3.3.1. Tool Validity

To verify the validity of the study tool, the following indicators were used.

##### A. Content Validity

To ensure the content validity of the study tool, the researcher distributed the study tool in its initial form to ten referees from the faculty members at the Arab Open University of Amman, the University of Jordan, and the Middle East University, specializing in curricula, teaching methods, principles, and administration of educational psychology. They were all qualified and experienced. The aim was to determine the suitability of the items to the scale, the soundness of their formulation, and the clarity of their meanings from a linguistic perspective, and to make any necessary modifications, including deletions and additions. Based on the referees' comments, the required modifications were made, and 80% of the referees agreed upon them. Three items were deleted in light of the presented feedback. The final form of the study tool consisted of 30 items distributed across four dimensions.

##### B. Construct Validity Indicators

The tool was applied to a survey sample consisting of 30 male and female students from the study community and from outside its primary sample. The correlation coefficient of each paragraph with the field to which it belongs and with the total score of the test was extracted, and Table 2 shows this.

**Table 2.** Correlation Coefficients between Each Item of the (Learning Difficulties) Questionnaire and the Total Score of its Items.

| item | Correlation coefficient with the domain | Correlation coefficient between the item and the total score of the scale |
|------|-----------------------------------------|---------------------------------------------------------------------------|
| 1    | **0.73                                  | **0.45                                                                    |
| 2    | **0.62                                  | **0.55                                                                    |
| 3    | **0.57                                  | **0.47                                                                    |
| 4    | **0.71                                  | *0.43                                                                     |
| 5    | **0.43                                  | **0.47                                                                    |
| 6    | **0.58                                  | **0.53                                                                    |
| 7    | **0.55                                  | **0.54                                                                    |
| 8    | **0.42                                  | **0.39                                                                    |
| 9    | **0.65                                  | **0.61                                                                    |
| 10   | **0.53                                  | **0.48                                                                    |
| 11   | **0.55                                  | **0.54                                                                    |

| item | Correlation coefficient with the domain | Correlation coefficient between the item and the total score of the scale |
|------|-----------------------------------------|---------------------------------------------------------------------------|
| 12   | **0.63                                  | **0.51                                                                    |
| 13   | *0.64                                   | **0.58                                                                    |
| 14   | **0.70                                  | **0.63                                                                    |
| 15   | **0.59                                  | **0.65                                                                    |
| 16   | **0.62                                  | **0.53                                                                    |
| 17   | **0.67                                  | **0.56                                                                    |
| 18   | **0.65                                  | **0.45                                                                    |
| 19   | **0.54                                  | **0.55                                                                    |
| 20   | **0.62                                  | **0.47                                                                    |
| 21   | **0.49                                  | *0.41                                                                     |
| 22   | **0.65                                  | **0.49                                                                    |
| 23   | *0.41                                   | *0.38                                                                     |
| 24   | **0.61                                  | **0.54                                                                    |
| 25   | **0.52                                  | *0.40                                                                     |
| 26   | *0.61                                   | **0.65                                                                    |
| 27   | **0.52                                  | **0.65                                                                    |
| 28   | **0.59                                  | **0.64                                                                    |
| 29   | **0.72                                  | **0.58                                                                    |
| 30   | **0.73                                  | **0.61                                                                    |

\*\* Significant at the significance level ( $\alpha=0.01$ ), \*Significant at the significance level ( $\alpha=0.05$ ).

It is noted from Table 2 that the values of the correlation coefficients between the item and the total score of the scale were all positive and statistically significant, as these values ranged between 0.73 and 0.39, which means that this scale has a good construct validity.

Moreover, the correlation matrix between the dimensions comprising the scale was extracted, as shown in Table 3.

**Table 3.** Correlation Coefficient Values between the Dimension of the Digital Security Scale

| Dimension                                                                                    | The role of the family in protecting children from the dangers of digital content | The role of the family in protecting children from the dangers of digital content | The role of the family in protecting children from the dangers of connecting to the Internet | The role of the family in protecting the child from the risks of changing normal behavior | Challenges facing families in achieving digital security | Total score |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------|
| The role of the family in protecting children from the dangers of digital content            | -                                                                                 | -                                                                                 | **0.56                                                                                       | **0.48                                                                                    | **0.52                                                   | **0.52      |
| The role of the family in protecting children from the dangers of connecting to the Internet |                                                                                   | -                                                                                 | -                                                                                            | *0.40                                                                                     | *0.39                                                    | **0.53      |
| The role of the family in protecting the child from the risks of changing normal behavior    |                                                                                   | -                                                                                 | -                                                                                            | -                                                                                         | **0.52                                                   | *0.42       |
| Challenges facing families in achieving digital security                                     |                                                                                   | -                                                                                 | -                                                                                            | -                                                                                         | -                                                        | **0.65      |

\*\*Significant at the significance level ( $\alpha=0.01$ ) \* Significant at the significance level ( $\alpha=0.05$ ).

It is noted from Table 3, that the values of the correlation coefficients between the dimensions comprising the digital security scale were all statistically significant. On the other hand, the values of

the correlation coefficients between the domains and the total score were all statistically significant, indicating that this instrument has acceptable construct validity.

### 3.3.2. Reliability of the Digital Security Scale

The reliability was confirmed using Cronbach's alpha equation after applying the scale to a pilot sample of 30 fathers and mothers from the study community and from outside its main sample.

**Table 4.** Values of Reliability Coefficients Using the Internal Consistency Method, in Terms of Cronbach's Alpha Equation

| Number      | Dimension                                                    | Cronbach Alpha |
|-------------|--------------------------------------------------------------|----------------|
| 1           | Dangers of digital content                                   | 0.83           |
| 2           | dangers of online communication                              | 0.85           |
| 3           | dangers of behavioral changes                                | 0.82           |
| 4           | The challenges facing families in achieving digital security | 0.79           |
| Total score |                                                              | 0.88           |

It is noted from Table 4, that the values of the internal consistency coefficients, in terms of Cronbach's alpha equation, were all acceptable for the purposes of the current study and indicate that the tool has a high degree of stability.

### 3.3.3. Scale Correction and Cut-Off Scores

To determine the means for the total score, the following equation was used: Category length = ((maximum value-lowest value) / number of levels) = (5 - 1) / 4 = 1.33. Thus, the means are as follows:

1 - 2.33 Low, 2.34 - 3.67: Moderate , 3.68 - 5: High

## 4. Study Results

### 4.1. Results of the study's first question: What is the role of parents in ensuring digital security for kindergarten children ?

Means and standard deviations were extracted to answer the first research question, as shown in the table.

**Table 5.** Means and Standard Deviation of Parent Role in Achieving Digital Security for Kindergarten Students

| #     | Dimension                                                | Mean | Std. Deviation | rank | level    |
|-------|----------------------------------------------------------|------|----------------|------|----------|
| 1     | dangers of digital content                               | 3.88 | 0.81           | 1    | high     |
| 2     | dangers of online communication                          | 3.85 | 0.89           | 2    | high     |
| 3     | dangers of behavioral changes                            | 3.74 | 0.68           | 3    | high     |
| 4     | Challenges facing families in achieving digital security | 2.92 | 0.88           | 4    | Moderate |
| Total |                                                          | 3.67 | 0.58           |      | Moderate |

It is noted from the results of Table 5 that the study participants' estimates of the role of parents in achieving digital security for kindergarten children came in at an average level, as the mean reached 3.67 with a standard deviation of 0.59. All dimensions came in at a high level, except for one dimension that came in the moderate level, which is "the challenges facing the family in achieving digital security." While the dimension "dangers of the digital content" came in first place.

This result can be explained by the awareness of many parents of the risks and challenges facing their children in this digital world, and by the parents' preoccupation with their work and long absences from home. The results were relatively consistent with Abdel Wahid's (2020) study, which highlighted a weakness in the family's role in protecting children from the dangers of digital content. Moreover, this result differs from the results of Dahmani and Khalafia's (2022) study, which showed that parents possess digital awareness and the ability to interact educationally with their children in the digital environment, which constitutes a factor in protecting children's digital rights.

**4.2. Question 2: Are there statistically significant differences at the mean level between the arithmetic means of the parents' role in achieving digital security for kindergarten children by gender and country?**

The arithmetic means and standard deviations for the parents' role in achieving digital security for kindergarten children were extracted to answer research question 2. The following table presents the results.

**Table 6. Gender**

| Dependent Variable | gender | Mean  | Std. Error | 95% Confidence Interval |             |
|--------------------|--------|-------|------------|-------------------------|-------------|
|                    |        |       |            | Lower Bound             | Upper Bound |
| dim1               | Male   | 3.327 | .103       | 3.124                   | 3.530       |
|                    | Female | 3.958 | .039       | 3.881                   | 4.035       |
| dim2               | Male   | 3.299 | .115       | 3.073                   | 3.524       |
|                    | Female | 3.928 | .043       | 3.843                   | 4.014       |
| dim3               | Male   | 3.124 | .084       | 2.958                   | 3.290       |
|                    | female | 3.826 | .032       | 3.763                   | 3.889       |
| dim4               | Male   | 2.874 | .115       | 2.647                   | 3.101       |
|                    | Female | 2.922 | .044       | 2.836                   | 3.008       |
| total              | Male   | 3.190 | .073       | 3.046                   | 3.334       |
|                    | Female | 3.742 | .028       | 3.687                   | 3.797       |

**Table 7. Country**

| Dependent Variable | country      | Mean  | Std. Error | 95% Confidence Interval |             |
|--------------------|--------------|-------|------------|-------------------------|-------------|
|                    |              |       |            | Lower Bound             | Upper Bound |
| dim1               | Jordan       | 3.659 | .067       | 3.528                   | 3.790       |
|                    | Saudi Arabia | 3.626 | .066       | 3.497                   | 3.756       |
| dim2               | Jordan       | 3.667 | .074       | 3.522                   | 3.812       |
|                    | Saudi Arabia | 3.560 | .073       | 3.416                   | 3.703       |
| dim3               | Jordan       | 3.506 | .054       | 3.399                   | 3.613       |
|                    | Saudi Arabia | 3.444 | .054       | 3.338                   | 3.549       |
| dim4               | Jordan       | 2.950 | .075       | 2.803                   | 3.096       |
|                    | Saudi Arabia | 2.846 | .074       | 2.702                   | 2.991       |
| total              | Jordan       | 3.502 | .047       | 3.409                   | 3.595       |
|                    | Saudi Arabia | 3.430 | .047       | 3.338                   | 3.522       |

It is noted from the results of Tables (6, 7 ) that there are apparent differences between the means of the parents' role in achieving digital security for kindergarten children according to (gender and country), and to know whether these differences are statistically significant, a multiple variance analysis MANOVA was extracted, and Table (8) shows that.

Checking Normality:

**Table 8.** Tests of Normality

|       | Kolmogorov-Smirnov <sup>a</sup> |     |      | Shapiro-Wilk |     |      |
|-------|---------------------------------|-----|------|--------------|-----|------|
|       | Statistic                       | df  | Sig. | Statistic    | df  | Sig. |
| total | 0.073                           | 462 | .056 | .947         | 462 | .456 |

a. Lilliefors Significance Correction

The findings of Table 8. showed that the normal distribution property was achieved as Kolmogorov–Smirnov reached 0.073, which is not significant at ( $\alpha=0=0.05$ )

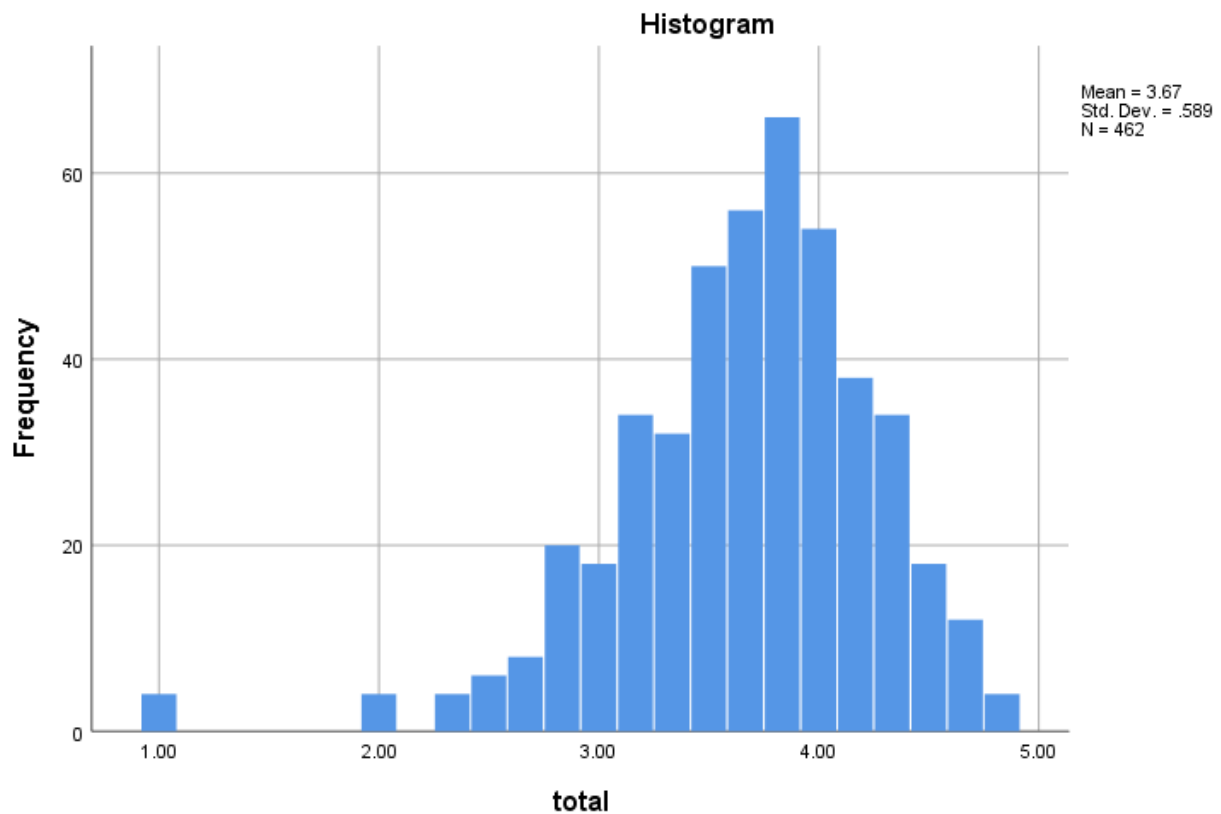


**Figure 1.** Normality Checking

Figure 1. Shows that the normality assumption is achieved.

**Table 9.** Manova Test for Exploring the Significance between the Means of Parental Role in Achieving Digital Security

| Effect  |                    | Value | F                   | Hypothesis df | Error df | Sig. |
|---------|--------------------|-------|---------------------|---------------|----------|------|
| Gender  | Pillai's Trace     | .125  | 16.218 <sup>b</sup> | 4.000         | 456.000  | .000 |
|         | Wilks' Lambda      | .875  | 16.218 <sup>b</sup> | 4.000         | 456.000  | .000 |
|         | Hotelling's Trace  | .142  | 16.218 <sup>b</sup> | 4.000         | 456.000  | .000 |
|         | Roy's Largest Root | .142  | 16.218 <sup>b</sup> | 4.000         | 456.000  | .000 |
| Country | Pillai's Trace     | .008  | .954 <sup>b</sup>   | 4.000         | 456.000  | .433 |
|         | Wilks' Lambda      | .992  | .954 <sup>b</sup>   | 4.000         | 456.000  | .433 |
|         | Hotelling's Trace  | .008  | .954 <sup>b</sup>   | 4.000         | 456.000  | .433 |
|         | Roy's Largest Root | .008  | .954 <sup>b</sup>   | 4.000         | 456.000  | .433 |

Based on the findings of Table 9, it is obvious that the gender value has a significant impact on the general level, as Table 10 will demonstrate.

**Table 10.** Manova Test for the Exploring the Significance between the Means of Parental Role in Achieving Digital Security

| Source  | Dependent Variable | Type III Sum of Squares | df  | Mean Square | F      | Sig. |
|---------|--------------------|-------------------------|-----|-------------|--------|------|
| Gender  | dim1               | 20.101                  | 1   | 20.101      | 32.543 | .000 |
|         | dim2               | 20.038                  | 1   | 20.038      | 26.320 | .000 |
|         | dim3               | 24.936                  | 1   | 24.936      | 60.517 | .000 |
|         | dim4               | .113                    | 1   | .113        | .147   | .702 |
|         | total              | 15.417                  | 1   | 15.417      | 49.290 | .000 |
| Country | dim1               | .119                    | 1   | .119        | .192   | .661 |
|         | dim2               | 1.322                   | 1   | 1.322       | 1.736  | .188 |
|         | dim3               | .448                    | 1   | .448        | 1.087  | .298 |
|         | dim4               | 1.234                   | 1   | 1.234       | 1.597  | .207 |
|         | total              | .598                    | 1   | .598        | 1.913  | .167 |
| Error   | dim1               | 283.511                 | 459 | .618        |        |      |
|         | dim2               | 349.446                 | 459 | .761        |        |      |
|         | dim3               | 189.126                 | 459 | .412        |        |      |
|         | dim4               | 354.443                 | 459 | .772        |        |      |
|         | total              | 143.569                 | 459 | .313        |        |      |
| Total   | dim1               | 7256.469                | 462 |             |        |      |
|         | dim2               | 7223.656                | 462 |             |        |      |
|         | dim3               | 6674.375                | 462 |             |        |      |
|         | dim4               | 4288.960                | 462 |             |        |      |
|         | total              | 6396.742                | 462 |             |        |      |

It is noted from the results of Table 10, that there are statistically significant differences at the level of  $\alpha = 0.05$  between the means of the parents' role in achieving digital security for kindergarten children according to the variable of the guardian's gender, on the total score and on all dimensions except for the dimension "digital security". Returning to the table of means, it is noted that these differences are attributed to the mothers.

These results may be attributed to the greater role of mothers in monitoring their children at this age, as well as the fact that mothers spend more time with their children. The results of this study were relatively consistent with the results of Al-Kathiri's (2024) study, which showed positive attitudes among the study sample members towards allowing their children to use the internet. The results of this study were also consistent with the results of Abdul Wahid's (2020) study, which

demonstrated the weak role of the family in protecting children from the dangers of digital content and the internet. The results also showed no statistically significant differences at the  $\alpha=0.05$  level between the means of the parents' role in achieving digital security for kindergarten children based on the country variable (Jordan and Saudi Arabia). This result may be attributed to the similarity of cultural and social levels in both Jordan and Saudi Arabia, which share many common family and societal customs and traditions.

## 5. Discussion of the Results

The results of this study showed that the role of parents in maintaining the digital security of kindergarten children in Jordan and Saudi Arabia was moderate. This indicates a partial awareness among parents of the importance of protecting children in digital environments. This is considered below the desired level, given the increasing challenges posed by technology and the internet for this age group. This result may be attributed to weak family guidance in this area and the absence of adequate awareness programs directed at parents in particular and society in general, especially in the early years of a child's life, when their initial digital behavior is formed and where it becomes difficult to control and guide their behavior. The results also revealed statistically significant differences in the role of parents attributable to gender (mother or father), in favor of mothers. This can be explained by the mother's traditional role in daily care and monitoring of the child's activities, including their digital interactions, especially since mothers spend more time with their children. This may also be due to mothers' increased sensitivity to the social and behavioral risks that children may be exposed to via smart devices. In contrast, the results did not reveal statistically significant differences in the role of parents in digital security between Jordan and Saudi Arabia, indicating a convergence in family awareness and educational orientations related to digital security in both countries. This may be due to the cultural and social similarities between the two societies, as well as the prevalence of the same digital applications and platforms that children interact with in both Jordan and Saudi Arabia. This is in addition to the similarity of educational challenges facing families in light of the accelerating digitization process, which has impacted all segments of society.

## 6. Conclusions

The role of parents in protecting kindergarten children from digital risks still needs to be strengthened and empowered cognitively and educationally, although it has reached an average level. Mothers also tend to play a more active role in digital security than fathers, which calls for greater parental involvement in raising children's digital awareness. The results also revealed similarities in parental practices and roles in digital security in Jordan and Saudi Arabia, reflecting the similarity in the cultural, educational, and technological environments in both countries. There is an urgent need for training and awareness programs targeting both mothers and fathers to raise their awareness of the risks of the digital space and enable them to use effective parenting strategies to guide their children.

## 7. Suggestion

In light of the study's findings and conclusions, the study recommends the following

### Educational Recommendations

- Design and implement awareness programs for parents, focusing on children's digital security, delivered through kindergartens or educational platforms. These programs focus on the dangers of the digital space and how to deal with them.
- Strengthen the role of parents in protecting children digitally through awareness campaigns that highlight the importance of their active participation in monitoring their children's digital usage, rather than leaving this role exclusively to mothers.

- Integrate digital security into educational curricula directed at parents, within family guidance programs, especially during early childhood, given the impact this stage has on shaping children's digital behavior.
- Launch community partnerships between the Ministries of Education, the media, and civil society organizations in both Jordan and Saudi Arabia to spread a culture of digital security among families, using engaging and practical methods.

### Research Recommendations

Conduct further research, targeting different age groups, to build a comprehensive understanding of the reality of digital security in the Arab world.

The role of the family in protecting children from the dangers of digital content

The role of the family in protecting children from the dangers of online communication

The role of the family in protecting children from the dangers of behavioral changes

The challenges facing families in achieving digital security.

### Declarations

**Author Contributions.** A.A1: Introduction and Literature review. A.A2: methodology, discussion, and writing, original manuscript preparation. A.A3: review-editing. A.A4: data analysis all authors have read and approved the final version of the article.

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**Ethical Approval.** The participants agree to respond anonymously.

**Data Availability Statement.** Data can be provided by the authors upon request.

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### About the Contributor(s)

**Iyad Jiries Shawareb**, Associate professor, Amman Arab University  
Faculty of Psychological Educational Sciences.  
Email: [i-shawareb@aau.edu.jo](mailto:i-shawareb@aau.edu.jo)  
ORCID: <https://orcid.org/0009-0008-2565-7638>

**Mo'en Salman Alnasraween**, Associate Professor, Yarmouk University  
Faculty of Educational Sciences.  
Email: [moen.na@yu.edu.jo](mailto:moen.na@yu.edu.jo)  
ORCID: <https://orcid.org/0000-0002-1905-6253>

**Maha Khaled Al Qasas**, Amman Arab University.  
Email: [202330254@aau.edu.jo](mailto:202330254@aau.edu.jo)  
ORCID: <https://orcid.org/0009-0007-0831-314X>

**Geda Emad Abduldaim**, Amman Arab University.  
Email: [202330193@aau.edu.jo](mailto:202330193@aau.edu.jo)  
ORCID: <https://orcid.org/0009-0007-9890-3791>

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