Internet Parenting Styles of Parents of Children with and without Autism Spectrum Disorder

Prepare

Alyaa Hemdi

Assistant professor, Department of Special Education, Faculty of Educational Graduate Studies, King Abdulaziz University, Jeddah, Saudi Arabia

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Abstract

Parenting is a complex task that comprises many behaviors and interactions between parents and their children. Parenting children with disabilities, specifically children with autism spectrum disorder (ASD), was found to put more pressure on those parents than parents of typically developing children. This study aimed to assess the similarities and differences in the internet parenting styles of Saudi parents of children with and without ASD, respectively. This is a descriptive cross-sectional study that utilized a survey questionnaire, the internet Parenting Style Instrument, which was distributed electronically. A total of 222 parents participated, of whom 126 were parents of typically developing children and 96 were parents of children with ASD. The results showed a significant difference in internet parenting styles between parents of children with ASD and those of children without ASD. Both types of parents were found to express high levels of parental control and warmth; however, those with children with ASD exhibit higher levels than others. Parental warmth was found to be associated with parental age, parents' gender, and parental education level. Parental control was found to be significantly associated with parents' gender and the parental middle-aged group. These outcomes could lead to future research interventions that help protect children with ASD online.

Key words: Autism, Autism spectrum disorder, parenting styles, internet, children with autism, parents.

الملخص

تعتبر التربية من المهام المعقدة التي تتضمن العديد من السلوكيات والتفاعلات بين الآباء وأطفالهم. وُجد أن تربية الأطفال من ذوي الإعاقة، وخاصة الأطفال من ذوي التوحد تضع ضغطًا أكبر على هؤلاء الآباء بدرجة أكثر من الآباء والأمهات للاطفال ذوي النمو العادي. الهدف الرئيسي من هذه الدراسة هو تقييم أوجه التشابه والاختلاف في الأساليب الوالدية عبر الإنترنت لاولياء الامور السعوديين للأطفال من او من غير ذوي اضطراب طيف التوحد. هذه دراسة وصفية مقطعية استخدمت استبيان استقصائي The Internet Parenting Style Instrument الذي تم توزيعه إلكترونيًا. شارك ما مجموعه ٢٢٢ من الآباء والأمهات من بينهم ١٢٦ كانوا آباء لأطفال ذوي النمو العادي و ٩٦ آباء لأطفال من ذوي التوحد, ووجدت أن هناك فرقًا دالاً بين الأنماط الوالدية عبر الإنترنت لدى آباء الأطفال ذوي التوحد مقارنة بأولئك من غير ذوي اضطراب طيف التوحد. تم اتوصل الى ان الآباء السعوديين لأطفال التوحد وغيرهم يعبرون عن مستويات عالية من التحكم الأبوي والدفء، ومع ذلك ، فإن أولئك الذين لديهم أطفال من ذوي التوحد قد سجلوا مستويات أعلى من غيرهم. كما تم التوصل الى ان مستوى الدفء الوالدي مرتبطًا بمجموعات الوالدين من كبار السن والشباب ، وجنس الوالدين ، ومستوى تعليم الوالدين. وجد ايضاً أن الرقابة الوالدية مرتبطة بشكل كبير بجنس الوالدين ، ومجموعة الأبوين في منتصف العمر. قد تؤدي نتائج هذه الدراسة إلى تدخلات بحثية مستقبلية من شأنها أن تساعد في حماية الأطفال من ذوي التوحد اثناء استخدام الإنترنت.

الكلمات المفتاحية: التوحد، اضطراب طيف التوحد، الاساليب الوالدية، الانترنت، اطفال التوحد، اولياء الامور.

Introduction

Parenting is a multifaceted process that comprises numerous detailed behaviors that work in conjunction and affect a child's outcomes. The primary task of a parent is to encourage a child to preserve a unique sense of integrity while meeting other people's demands (Clauser et al., 2020). Today's children have not lived in a world without the internet. The widespread use of smartphones and the continued rise of social media have introduced new challenges to parenthood (Ibrahimi et al., 2019). The internet has become a widespread channel for entertainment and social connection among children and young adults (Mazurek & Wenstrup, 2013). According to Özgür (2016), parents with young children have become anxious about the influence of screen time. Some parents are concerned that their children spend a great deal of time in front of screens. Mazurek and Wenstrup (2013) reported that excessive television and technology use are linked to adverse outcomes among typically growing children. Özgür (2016) further noted that the internet is uncontrolled and often poses risks to all users, especially children and adolescents.

Research has shown that raising a child with a disability is more challenging than raising a typically developing child. Ibrahimi et al. (2019) argued that when raising a child with a disability, parents have to deal with different issues, such as making suitable assessments in every situation, providing social support, and assessing available strategies. Furthermore, Ibrahimi et al. (2019) noted that some parents may fail to accept their children's condition. They may develop reactions that affect their relationships with their children, and some parents become overprotective and sometimes deny the existence of a disability (Ibrahimi et al., 2019). Just and Berg (2017) noted that recent research advocates trusting relationships and collaboration between caregivers and children. However, for most caregivers of children with disabilities, developing such a relationship is difficult because of the current available technology. For children with autism spectrum disorder (ASD), their obsessive behavior makes it even harder for parents and caregivers to develop trusting relationships because of their

vulnerability (Ibrahimi et al., 2019; Just & Berg, 2017). However, Just and Berg (2017) highlighted that some aspects of concern for a child with ASD resemble those of typically developed children (TDC).

There are differences in the challenges between parenting a TDC and a child with ASD. Specifically, parents of children with ASD experience unique parenting challenges and stressors, such as increased stress levels, thus limiting the development of coping skills (Clauser et al., 2020; Ibrahimi et al., 2019). Raising children with ASD or other types of disabilities, such as Down Syndrome, puts extra pressure on parents and families, as a condition's permanency, social stigma, and lack of necessary support are some of the issues that result in added stress (Clauser et al., 2020; Ibrahimi et al., 2019)**.** Higher stress levels in parents reduce their capacity to manage and offer support to their children (Clauser et al., 2020). Additionally, Clauser et al. (2020) noted that parents experiencing high stress levels tend to engage in less conducive behavior, which negatively impacts children's growth. In this regard, parenting children with ASD may result in a less conducive parenting approach than parenting TDC. Parents with children with ASD have to protect their children because of their inability to comprehend social cues when they are online, which may put them at risk of harm.

Most of this previously published research focused on understanding internet addiction among children with ASD and its relationship to parenting styles; however, very few studies looked at the internet parenting styles of parents of children with ASD. To the best of the author's knowledge, no previous research has focused on assessing the differences between internet parenting styles in parents of children with and without ASD. Therefore, **the main aim** of this study is to assess the similarities and differences in internet parenting styles of Saudi parents of children with and without ASD.

Literature Review

Internet Usage among Children with Autism Spectrum Disorder (ASD)

Just and Berg (2017) noted that children with ASD have excellent skills in some functional and memory cognition areas. They exhibit strong skills in online gaming, remembering passwords, and creating accounts. However, they have poor social skills and find it hard to understand jokes or figures of speech (Just & Berg, 2017). Shane-Simpson et al. (2016) supported these views by noting that while children with ASD may engage in compulsive internet use, they are more focused on specific interests online than general internet usage. Stiller and Mößle (2018) reported that children with ASD spent more time on electronic devices than children without ASD, and children with ASD used more electronic media than children with other developmental disabilities. The differences in screen usage time between children with ASD and those without ASD indicate that parents may use different parenting styles for the two groups. Furthermore, heavy internet use is linked to parenting style and the relationship between the parent and child (Sun & Wilkinson, 2020). The following section discusses the different parenting styles.

Mazurek and Wenstrup (2013) argued that electronic devices are crucial for children with ASD. Just and Berg (2017) found that children with ASD may exhibit obsessive behavior when using the internet. As such, they may not fully comprehend the risks of using technology and how others perceive the information they share through the internet (Just & Berg, 2017). Shane-Simpson et al.'s (2016) research showed similar findings, but they found that compulsive internet behavior among children with ASD can be attributed to non-social characteristics rather than social difficulties associated with their condition.

Parenting a child with ASD is a significant challenge, especially in the current technological era. Children with ASD spend more time online than TDC for a variety of reasons (Macmillan et al., 2020; Mazurek & Engelhardt, 2013). Mazurek and Wenstrup (2013) found that children with ASD spent significantly more time on video games than their neurotypical siblings. However, Shane-Simpson et

al. (2016) found that individuals with ASD are susceptible to compulsive internet use because it provides them with opportunities to fulfill their desires to engage in topics of interest deeply. Furthermore, the internet provides children with ASD an opportunity to focus on their interests while deeply developing a skillset around those interests. They use the opportunity to link with other children who have the same levels of comfort interacting online. Children living with ASD use the internet more systematically and focus more on their interests than their peers without ASD (Shane-Simpson et al., 2016).

Mazurek and Wenstrup (2013) found that children with ASD do not spend much time on social networks or socially collaborative video games. The findings were confirmed in a systematic review by Stiller and Mößle (2018), who concluded that TDC and children with ASD enjoyed playing video games and spent less time on social networks. Macmillan et al. (2020) noted no significant correlation between ASD, cyberbullying, and sexual exploitation. According to Macmillan et al. (2020), this could be because children with ASD engage in less online interactions with others. As such, the findings by Macmillan et al. (2020) directly contrast Just and Berg's (2017) study results, who found that children with ASD cannot distinguish between falseness and deception in online interactions, making them more susceptible to cyberbullying. Shane-Simpson et al. (2016) found that children with ASD engage in repetitive behaviors and experience difficulty interpreting social communication, which results in awkward online interactions.

Children with ASD have extremely poor spending habits on the internet. Just and Berg (2017) found that children with ASD have a higher probability of buying things online, and children with ASD have unique abilities, such as excellent memories, making it easier to adopt poor spending habits and to take advantage of their caregivers. These children are unaware of the consequences of online spending, which results in compulsive and obsessive behaviors. The findings were confirmed by Macmillan et al. (2020), who concluded that autistic children have a higher probability of buying and selling goods and services online. Furthermore, children

with ASD may desire to buy items or services that identify with their interest online, making them more vulnerable to unapproved acquisitions.

Parenting Styles and internet Parenting Styles

According to Clauser et al. (2020), parents with children with ASD struggle to understand and accept their children's condition. Numerous individuals with ASD show specific behavior patterns, such as restricted oral communication, social behavior deficits, and destructive conduct (Clauser et al., 2020). According to Mazurek and Engelhardt (2013), children with ASD experience more difficulties regulating their behaviors and attention spans. Additionally, children with ASD show highly rebellious behavior, inattention, and hyperactivity (Macmillan et al., 2020). These difficulties have a significant influence on children's daily functioning.

Parenting styles play an integral role in children's social lives, academic performance, psychosocial development, and behavioral problems. Baumrind (1991) introduced a number of styles that parents use to raise their children (Bozoglan & Kumar, 2021). These styles include permissive, authoritative, and authoritarian parenting styles. Bozoglan and Kumar (2021) broadly classified parenting styles into positive and negative parenting. Positive parenting involves practical interactions built on warmth, support, and sustenance between the parent and child. Negative parenting involves hostility toward the child, permissiveness, and physical reprimands. Authoritative parenting is classified as a positive approach; the remaining two are negative (Bozoglan & Kumar, 2021). According to Sun and Wilkinson (2020), high levels of control is linked to adverse outcomes among children. Furthermore, a strict parenting style may push the child to look for social interactions on the internet, while positive parenting is associated with sound interpersonal relationships between children and their parents.

Authoritative parenting features high warmth, support, and communication and encourages bidirectional communication between parents and their children (Tur-Porcar, 2017). Sun and

Wilkinson (2020) supported these sentiments, noting that authoritative parents expect maturity and often follow an approach that focuses on the child. An authoritative parent will recognize their child's emotional state, explain to them how to manage their temper, and find excuses for their disappointments (Clauser et al., 2020; Sun & Wilkinson, 2020). Clauser et al. (2020) further suggested that authoritative parents have high expectations of achievement and levels of maturity for their children.

The second parenting style is the authoritarian approach. Those who compel their own children to follow their commands are identified as authoritarian parents. Sun and Wilkinson (2020) reported that authoritarian parenting is linked to control and heavy punishment. Clauser et al. (2020) further noted that authoritarian parents have high expectations for their children but lack responsiveness and warmth. According to Sun and Wilkinson (2020), authoritarian parenting is associated with depression, rebellion, and self-blame among children. Furthermore, this form of parenting is associated with high levels of psychological and behavioral control, which results in withdrawn behavior, poor interpersonal relationships, and behavioral disorders (Clauser et al. 2020).

The final approach is permissive parenting. While this parenting style is well-meaning, the outcome is often negative (Sun & Wilkinson, 2020). These parents provide their children's every need and wish but fail to teach them to regulate inappropriate and destructive behavior (Sun & Wilkinson, 2020). Clauser et al. (2020) supported these sentiments by noting that permissive parents set few rules and boundaries but are often reluctant to enforce them. Sun and Wilkinson (2020) further argued that this approach to parenting is neglectful because parents tend to ignore their children's emotions and needs. The outcomes of this parenting style are similar to those of the authoritarian approach (Clauser et al., 2020; Sun & Wilkinson, 2020). Additionally, parents who use this approach have fewer effective communication styles and low demands for maturity.

Internet Parenting Styles for Parents of Children with ASD and Typically Developing Children

internet parenting styles direct children's online behaviors (Özgür, 2016). According to Sun and Wilkinson (2020), children and teenagers with ASD use the internet more than neurotypical individuals, and children with high levels of neuroticism prefer expressing their emotions on the internet and experience higher levels of internet addictions. Sun and Wilkinson (2020) linked internet addiction to neglect from parents. The findings were confirmed by Bozoglan and Kumar (2021), who found that negative parenting has a negative correlation with internet addiction.

According to Clauser et al. (2020), raising a child with ASD may have a negative effect on the parenting approach. As mentioned above, children with ASD may experience communication impairments. In this regard, Clauser et al. (2020) argued that the lack of reciprocal relations and the abundance of communication impediments in children with ASD may decrease parents' warmth while increasing the level of protectiveness and controlling behavior. Reed and Osborne (2014) noted that parenting stress was linked to a child's behavior and outcomes. High stress levels among parents of children with ASD result in less engagement in treatment and intervention programs. Likhitweerawong et al. (2020) supported these findings by stating that parents with children with ASD experience high stress levels, resulting in less affection and imposing more control than parents with typically developing children. According to Likhitweerawong et al. (2020), authoritarian and permissive parenting for children with ASD is associated with parental stress. Caregivers for children with ASD have experienced difficulties in managing ASD behaviors, which results in greater stress levels, and therefore a more authoritarian or permissive parenting approach. High parental stress results in harsher disciplinary approaches (Reed & Osborne, 2014). In addition, Reed and Osborne (2014) reported that high parental stress levels were linked with changes in behaviors, even in TDC.

As mentioned, children with ASD have a higher risk of compulsive internet use, exposure to unsuitable materials online, and

victimization by predators. Özgür (2016) found that parenting styles significantly affect a child's internet use. Reed and Osborne (2014) argued that caregivers for children with ASD need to alter their sensitivity to their children's needs, as augmented compassion for a child's conduct on the parent's part results in better social abilities in developmentally challenged children. Furthermore, there is variation in the sensitivity between caregivers and children with ASD versus neurotypical children. Sun and Wilkinson (2020) found that children with authoritarian parents are more vulnerable to internet addiction.

There are numerous risks associated with internet usage, especially for children. Özgür (2016) concluded that control and guidance have a significant effect on the reduction of undesirable circumstances that children encounter on the internet. However, stringent guidelines and monitoring may jeopardize a child's future (Özgür, 2016). According to Özgür (2016), parents should guide their children through online activities, set rules to help regulate internet usage, and restrict inappropriate online activities. The authoritative parenting style encourages parents to communicate with their children progressively while children interact with technology, and parents must use a more deferential and considerate viewpoint toward their children's cyberspace choices (Özgür, 2016).

High stress levels among parents of children with ASD negatively affect their parenting styles. Likhitweerawong et al. (2020) studied parenting styles among caregivers of children with ASD and concluded that caregivers for children with ASD adopted a more lenient and less strict parenting style than parents with children with ASD. Bozoglan and Kumar (2021) suggested that caregivers of children with ASD become distracted from having to cope with stress, which leaves less room for them to monitor their children's internet usage. The high stress levels among parents of children with ASD significantly contribute to their children's internet addiction. Just and Berg (2017) found that rules made by caregivers of children with ASD had low compliance. However, most caregivers use rules to substitute for a lack of knowledge and technical skills to control a child's internet usage. Furthermore, Likhitweerawong et al. (2020) concluded that most unemployed caregivers spend more time with

their children, making it difficult to set appropriate boundaries and discipline them. The researchers further found that parents' increased levels of stress and anxiety resulted in a more permissive and authoritarian parenting style. Children with ASD experience more parental protection and control than TDC (Likhitweerawong et al., 2020).

A parent's involvement in a child's internet use is crucial for monitoring and controlling the web pages they visit. Özgür (2016) argued that children learn the negative impacts of the internet when they use it with a parent. In this regard, parents who use an authoritative parenting approach will have a better opportunity to educate their children about the destructive elements of the internet compared to permissive or authoritarian parents. Liau et al.'s (2008) study yielded similar results, showing that poor communication between parents and children often resulted in solid online connections. Parents who fail to communicate openly with their children may encourage them to engage in poor online behavior. According to Özgür (2016), authoritative parents will establish practical rules for their children, such as internet use durations. Just and Berg (2017) found that caregivers of children with ASD experienced frustration because they could not protect their children from risks they faced on the internet; these parents have to use physical protection and rule setting to protect their children. Some physical protections include confiscating a child's device, which often results in worse behavioral problems (Just & Berg, 2017). Just and Berg (2017) further found that parents turned off internet routers to prevent children from going online. Macmillan et al. (2020) supported these findings by noting that parents switch off and remove devices to prevent their children with ASD from going online.

 Macmillan et al. (2020) stated that most parents of children with ASD restrict their children's online presence using parental online control applications. Typically developing adolescents have a better understanding of the internet than their parents. In this regard, they can protect their privacy against their parents. There is an application that helps parents regulate their children's online

presence and duration. Liau et al. (2008) reported that parents create guidelines for their children's internet access and monitor their children's browser histories and bookmarks. However, parents overestimate the efficacy of parental supervision and communication with their children. Additionally, parents are inclined to underestimate the ability of their adolescents to visit unsuitable web pages and engage in dangerous internet misconduct. Parental monitoring techniques for TDC are ineffective in lowering adolescents' internet use. However, having high restriction levels concerning internet use may encourage teenagers to access it at other places. In this regard, parents must promote open communication with their children about internet usage and include their children in the decision-making process to set rules about the limitations of internet use. Furthermore, Liau et al. (2008) noted that parents and children have to find a balance between encouraging their uniqueness and monitoring and restricting their behavior. Most typically developed teenagers might see cyberspace as a medium that they can use to advance their own personality (Liau et al., 2008). For both children with ASD and TDC, most parents feel inadequately prepared to protect their children online.

It is obvious that internet use is related to parenting styles, and sometimes, the usage of a more protective parenting style is linked to internet addiction. Parents impose rules to regulate and monitor their children's online behaviors. Children with ASD were found to spend more time online than TDC, as it sometimes provides comfort for them. As a result, they become more vulnerable to cyberbullying. Parental stress affects parents' behavior when dealing with their children, whether those children have ASD or are TDC. High parental stress among parents of children with ASD was found to affect parenting styles, making them more authoritarian and permissive. Moreover, studies have also found that they used unproductive ways to prevent their children from going online, such as taking their electronic devices.

Research Questions

Q1: What are the internet parenting styles of Saudi parents of children with and without ASD?

Q2: Are there any significant differences in internet parenting styles between parents of children with ASD and those without?

Q3: Is there any significant relationship between internet parenting styles among parents of children with ASD and parental characteristics (age, education level, and gender)?

Research Objectives

This study aims to assess the internet parenting styles of Saudi parents of children with and without ASD. It also aims to identify any significant differences in internet parenting styles between parents of children with ASD and those without. Finally, it will examine if there is any significant relationship between internet parenting styles in parents of children with ASD and parental characteristics (age, education level, and gender).

Methods

This study employs a descriptive cross-sectional design that utilizes a survey questionnaire to obtain the data needed to answer the research questions. The questionnaire used is the internet Parenting Style Instrument (IPSI), originally developed by Valkenburg (2008) and then translated into English and used by Valcke et al. (2010). After obtaining ethical approval to conduct this study from the university, the researcher created an electronic link to the survey through Google Docs. Then, the survey link was sent to families and friends who were Saudi parents of either TDC or children with ASD through e-mails and/or other electronic means of communication.

Participants

The target population of this study was all Saudi parents of TDC or children diagnosed with ASD between the ages of 6–12. This study utilized the convenience sampling technique, which was thought to be suitable for reaching the target population for this study. The researcher distributed the questionnaire to all Saudi parents through online groups in which parents could be recruited. Parents of children with ASD were reached through community online support groups via support group organizers who were cooperating to

distribute the questionnaire. A statement was provided at the beginning of the survey asking parents if they were willing to take part in the study and guaranteeing that the data would be kept confidential. The researcher created a secure Google Docs survey account. The data were stored in a file on a password-locked university computer; only research personnel had access to the file and computer. Parents of TDC (n = 126) and parents of children with ASD (n = 96) accounted for a total of 222 participants.

Instrument

To answer the research questions, a questionnaire was designed and distributed to the parents of children with and without ASD. It consisted of two parts: the first part of the questionnaire was on the parents' and children's demographic characteristics, and the second part was on the internet parenting styles instrument IPSI. The instrument consisted of 25 questions that assessed parents to determine their internet parenting styles. The IPSI comprises two dimensions: parental control (PC) with 11 items and parental warmth (PW) with 14 items. Each item of the questionnaire was assessed using a Likert scale ranging from 1 (never) to 5 (always), and a "not applicable" option was available. The score for each dimension was calculated as the sum of the applicable scores divided by the number of applicable items. In addition, the value of 3 was set to be a cut-off score. The IPSI was translated into Arabic, as it is the mother tongue of the participants in this study. The translation was conducted using the back translation method to ensure accuracy. The final translated version was reviewed by a panel of bilingual judges, and small verifications were made accordingly. Results showed the reliability of the overall IPSI items used to assess internet parenting styles (Cronbach's alpha = 0.931). Moreover, a reliability test for each domain of parenting style showed consistency for PC (Cronbach's alpha = 0.852) and for PW (Cronbach's alpha = 0.912), representing a very good internal consistency for the overall questionnaire and the two dimensions of PC and PW.

Data Analysis

To assess if there is a difference in the parenting style dimensions (PC and PW) between parents with children with or without ASD, we carried out the means procedure to calculate subgroup means and related univariate statistics for dependent variables within categories of one or more independent variables. The significance level for the p-value was set to less than 0.05.

Results

Sample Characteristics

Overall sample distribution by parents' gender showed that the majority of the respondents in the sample were mothers (65.8%), while fathers accounted for 34.2%. By age group, 43.7% of the sample was 36–45, 23.4% was 26–35, and 26.6% was 46–55. A majority of the sample (52.3%) had a university degree, and only 1.4% had a middle school or lower level of education. The sample distribution showed that 43.2% of the parents had at least one child with ASD compared to 56.8% who did not, and 77% of the children in the sample were boys, compared to 23% girls. Children's age distribution showed that, among the entire sample, the mean number of children in a family was 3.64 children, while the mean number of children between 6–12 years was 1.75. The mean age of the children in the sample was 8.9 years old. Among the 222 participants, 126 were parents of children without ASD, and 96 were parents of children with ASD. Table 1 displays the demographic characteristics of the sample and the mean values for the PC and PW dimensions of the IPSI.

Table 1: Characteristics of respondents (n = 222), their children, and mean values for parental control and parental warmth

		Parents of children with ASD				Parents of children without ASD			
		n	%	*PC	*PW	n	%	PC	PW
Parents gender	Father	10	10.4	4.46	4.42	66	52.4	3.35	3.57
	Mother	86	89.6	3.97	3.76	60	47.6	3.66	3.94
Parents age group	>25	3	3.1	4.18	4.21	1	0.8	4.45	4.5
	26–35	28	29.2	4.01	4.08	26	20.6	3.91	4.01
	36–45	43	44.8	3.82	3.32	54	42.9	3.29	3.59
	46–55	19	19.8	4.46	4.57	40	31.7	3.54	3.71
	>55	3	3.1	4	3.5	5	4.0	3.05	4.21
Parents' educational level	Middle school or lower	0	0.0	NA	NA	3	2.4	3.05	3.45
	High school	14	14.6	4.07	4.2	16	12.7	3.4	3.71
	University or college undergraduate	48	50.0	4.09	3.98	68	54.0	3.68	3.87
	Postgraduate	34	35.4	3.9	3.46	39	31.0	3.27	3.56
Number of children in the family	1	9	9.4	4.67	4.55	4	3.2	3.69	4.61
	2	39	40.6	3.81	3.51	17	13.5	3.52	3.83
	3	11	11.5	3.78	3.81	34	27.0	3.64	3.88
	4	9	9.4	3.76	3.44	25	19.8	3.47	3.57
	5	21	21.9	4.16	3.88	27	21.4	3.6	3.71
	6	7	7.3	4.64	5	11	8.7	3.1	3.53
	7	0	0.0	NA	NA	3	2.4	2.21	2.76
	8	0	0.0	NA	NA	4	3.2	3.52	3.96
	12	0	0.0	NA	NA	1	0.8	3.73	4.21
	Mean	3.16				4.02			
	Median	2.50				4.00			
Age of child	Mean	9.81				8.25			
	Median	10.00				9.00			
Gender of the child	Son	89	92.7	3.98	3.79	82	65.1	3.44	3.66
	Daughter	7	7.3	4.46	4.29	44	34.9	3.61	3.91

Mean values for parental control and parental warmth dimensions.

Internet Parenting Style Dimensions among Parents of Children with and without ASD and Its Relation to Parents' Characteristics

Parent's Gender

Among those who had a child with ASD, 10.4% (n = 10) were men compared to 89.6% (n = 86) women, while among those who had TDC, 52.4% (n = 66) were men compared to 47.6% (n = 60) women. These differences between parents' genders are reflected in their parenting styles, as the results showed that fathers who had children with ASD displayed minimal differences between the mean score for both PC (4.42) and PW (4.42), while among mothers, the difference in the score was more significant (PC = 3.97 and PW = 3.76). Among those who had TDC, fathers tend to use the PW parenting style (3.57) over PC (3.35), and mothers also tend to use the PW parenting style (PW = 3.94) over PC (3.66). Therefore, the results for parents of children with ASD show that parents' gender plays a significant role in parental control (f = 9.895, p < 0.002), as the mean score values showed that fathers exhibit more control than mothers. This was the same for parental warmth (f = 7.047, p < 0.009), as fathers give more guidance and communicate more than mothers with their children with ASD.

Parents' Age Group

Results showed that among those who had a child with ASD, those aged 36–45 represented the greatest proportion of this population, representing 44.8% (n = 43) of the overall group of parents of children with ASD. This age group was followed by the 26–35 group at 27.1% (n = 26) and the 46–55 group at 19.8% (n = 19). For those with TDC, 42.9% (n = 54) were 36–45, making up the greatest proportion of this cohort, followed by the 46–55 age group (n = 40; 31.7%).

The parenting styles dimensions in relationship to age groups of those who had a child with ASD showed differences in the parenting style scores among different age groups; younger and older parents tend to employ more PW, while the age group in between employ more PC. The PW score of the 26–35 group was 4.08 compared to PC = 4.01, and among the 46–55 age group, the PW score was 4.57

compared to PC = 4.46, while among the 36–45 age group, the PW score was 3.32 compared to PC = 3.82. However, the results among those who had TDC showed that the 36–45 age group favored a PW style with a score of 3.59 compared to PC = 3.29, and other age groups remained the same with a PW = 4.01 for the 26–35 age group compared to a PC = 3.91 and PW = 3.71 among the 46–55 age group compared to a PC = 3.54.

Parents of children with ASD also showed a significant relationship between parents' age group and PC (f = 5.886, p < 0.001), and the mean scores between different age groups and PC dimensions showed the 36–45 age group is less controlling compared to all other age groups, and the same applies for PW. The results showed a significant relationship between parental age and PW (f = 13.915, p < 0.001).

Parent's Education

Among those who had one or more children with ASD, 50% (n = 48) had a university degree compared to 35.4% (n = 34) who had a postgraduate degree, and 14.6% (n = 14) completed high school. These differences in education level were reflected in the parenting style dimensions; high school graduates tend to favor PW (PW = 4.2; PC = 4.07), while parents who had a postgraduate degree tend to favor PC (PC = 3.9; PW = 3.46), and parents who had a university degree also favor PC (PC = 4.09; PW = 3.98).

By education level, 54% (n = 68) had a university degree, 31% (n = 39) had a postgraduate degree, 12.7% (n = 16) completed high school, and 2.4 (n = 3) completed middle school or lower among those who did not have a child with ASD. Among those who did not have a child with ASD, the preferred parenting style was the PW style (PW 3.87; PC = 3.68) among those who had a university degree. PW = 3.56 (PC = 3.26) among those who had a postgraduate degree, and PW = 3.71 (PC = 3.4) among those who completed high school. The results showed an insignificant relationship between parents' education level and PC (f = 1.602, p < 0.207) among parents of children with ASD; however, there was a significant difference in education level and PW (f = 7.262, p < 0.001). The

mean score by education level showed that the higher the education level, the lower the PW score.

Internet Parenting Styles among Parents of Children with and without Autism and the Differences between Them

The internet parenting styles instrument in general showed that there was a statistically significant difference between internet parenting styles in parents of children with ASD compared to those without ASD on every IPSI item except for some specific items. Specifically, the results showed an insignificant relationship between one item in PC (item 11) and having a child with ASD and three items in PW (items 14, 19, and 23), showing an insignificant relationship with having a child with ASD. Parents of children with ASD expressed higher levels of PC and PW compared to parents of children without ASD, while in some items in PW (items 14–18), parents of children without ASD displayed higher levels of PW than parents of children with ASD. In addition, mean scores for all items in the IPSI for parents of children with ASD were above the cut-off value of 3, exhibiting higher levels of PW and PC in their internet parenting styles. Moreover, mean scores for most items in the IPSI (except items 4, 7, and 23) for parents of children without ASD were above the cut-off value of 3, exhibiting higher levels of PW and PC in their internet parenting styles.

Table 2. Internet parenting styles among parents of children with and without autism

	IPSI ITEMS (MEAN SCORE)	WITH ASD	NO ASD	P-VALUE
1	I'M AROUND WHEN MY CHILD SURFS ON THE INTERNET.	4.00	3.19	< .001
2	I WATCH WHEN MY CHILD SURFS ON THE INTERNET.	4.00	3.00	< .001
3	AFTERWARDS, I CONTROL WHAT MY CHILD WATCHED ON THE INTERNET.	3.94	3.38	< .001
4	I USE SPECIAL SOFTWARE TO BLOCK CERTAIN INTERNET SITES FOR MY CHILD.	4.00	2.57	< .001
5	I STOP MY CHILD WHEN HE/SHE VISITS A LESS SUITABLE WEBSITE.	4.88	4.25	< .001
6	I STOP MY CHILD WHEN I SEE HE/SHE IS CHATTING.	4.31	3.97	< .001

7	I ONLY ALLOW MY CHILD TO SURF THE INTERNET AT SPECIFIC DAYS AND TIMES (E.G., ONLY WEDNESDAY AFTERNOON).	3.61	2.95	< .001
8	I LIMIT THE TIME MY CHILD IS ALLOWED IN THE INTERNET (E.G., ONLY ONE HOUR A DAY).	3.62	3.11	< .001
9	I LIMIT WHAT MY CHILD IS ALLOWED TO DO ON THE INTERNET (E.G., NO CHATTING ALLOWED).	4.00	3.87	0.006
10	I LIMIT THE TYPE OF WEBSITES MY CHILD IS ALLOWED TO VISIT.	3.89	3.66	< .001
11	I DETERMINE THAT MY CHILD CAN ONLY CONTACT PEOPLE VIA THE INTERNET THEY ALREADY KNOW PERSONALLY.	4.51	4.24	0.227*
12	I DEFINE INTERNET RULES TOGETHER WITH MY CHILD.	4.04	3.93	0.002
13	I EXPLAIN INTERNET RULES TOGETHER TO MY CHILD.	4.13	3.89	0.023
14	I DISCUSS WITH MY CHILD ABOUT WHAT HE/SHE HAS FOUND, OR WILL FIND ON THE INTERNET.	3.64	3.81	0.320*
15	I TALK WITH MY CHILD ABOUT WHAT HE/SHE DOES ON THE INTERNET.	3.45	3.82	< .001
16	I TALK WITH MY CHILD ABOUT WHOM HE/SHE MEETS VIA THE INTERNET.	3.21	3.91	< .001
17	I TALK WITH MY CHILD ABOUT THE RICH POSSIBILITIES OF THE INTERNET (LOOKING UP INFORMATION, PLAYING GAMES, CONTACTING FRIENDS...).	3.61	3.88	< .001
18	I TALK WITH MY CHILD ABOUT THE DANGERS RELATED TO THE INTERNET (COSTS, ADDICTION TO GAMES, COMPUTER VIRUSES, PRIVACY VIOLATION...).	3.40	3.95	< .001
19	I LISTEN TO WHAT MY CHILD TELLS ME ABOUT WHAT HE/SHE DID ON THE INTERNET.	4.26	4.23	0.263*
20	MY CHILD ASKS ME QUESTIONS WHEN HE/SHE ENCOUNTERS TECHNICAL PROBLEMS WHEN SURFING THE INTERNET.	4.65	4.05	< .001
21	MY CHILD ASKS ME QUESTIONS WHEN HE/SHE IS SURPRISED OR SHOCKED ABOUT THINGS HE/SHE HAS SEEN ON THE INTERNET.	3.86	3.60	< .001
22	MY CHILD ASKS ME QUESTIONS WHEN HE/SHE DOESN'T UNDERSTAND THINGS ON THE INTERNET (DIFFICULT WORDS, FOREIGN LANGUAGE, DIFFICULT).	3.95	3.74	< .001
23	I SIT TOGETHER WITH MY CHILD AT THE COMPUTER TO SURF ON THE INTERNET.	3.07	2.88	0.329*
24	I SHOW MY CHILD HOW TO SURF SAFELY ON THE INTERNET.	3.79	3.34	< .001
25	I SHOW MY CHILD "CHILD FRIENDLY" WEBSITES (LIBRARY, SONGS, CRAFTS, AND SCHOOL WEBSITE).	4.37	3.58	< .001

Discussion

Parenting is a complex task that comprises many behaviors and interactions between parents and their children. Parenting is becoming more demanding with the increased use of technology by today's children. Parenting children with disabilities, specifically children with ASD, was found to put more pressure on parents and to affect family dynamics in a profound way. This is due to increased levels of parenting stress and the continuous demands related to caring for these children. Previous research focused on understanding internet addiction among children with ASD and its relationship to parenting styles; however, there has been a lack of research on the internet parenting styles of parents of children with ASD and how they are comparable to parents of TDC. This study aimed to assess the similarities and differences in internet parenting styles of Saudi parents of children with and without ASD. It also aimed to discover the internet parenting styles of Saudi parents of children with and without ASD. The results showed that there was a significant difference between internet parenting styles in parents of children with ASD compared to those without ASD, agreeing with Clauser et al. (2020). Moreover, parents of children with ASD expressed higher levels of PC and PW compared to parents of children without ASD, as they scored above the cut-off value on all items of the IPSI. Saudi parents of children without ASD were also found to express high levels of PC and PW in their internet parenting styles; however, that was still less than parents of children with ASD. Likhitweerawong et al. (2020) found a similar result, in which parents of children with ASD showed more control over their children's behavior than parents of TDC. The significantly high level of PC among parents of children with ASD could be due to high levels of parental stress in these parents, which urges them to use more authoritarian approaches. Reed and Osborne (2014) and Likhitweerawong et al. (2020) confirmed this finding. Just and Berg (2017) offered another explanation of why parents of children with ASD might use more PC than parents of TDC. According to them, this might be due to parents' fear and attempts to protect their

children with ASD from internet harm. The results of this study also found that Saudi parents of children with ASD express significantly higher levels of PW than parents of TDC, which implies that Saudi parents of children with ASD communicate in a positive way with their children surrounding their internet usage, contradicting the findings from other studies (Clauser et al., 2020; Sun & Wilkinson, 2020).

Another objective of this study was to examine if there is any significant relationship between internet parenting styles in parents of children with ASD and parental characteristics (age, education level, and gender). Regarding gender, the results showed that Saudi fathers of children with ASD displayed significantly higher levels of PC and PW in their internet parenting styles compared to Saudi mothers. This agrees with the findings from other studies that suggest that mothers tend to adopt less control compared to fathers (Aunola et al., 2000). A logical explanation for this is that mothers are generally tender and express more emotion when dealing with their children compared to fathers who tend to express control and power.

With regard to parental age, this study found that there is a significant relationship between parental age group and internet parenting style among Saudi parents of children with ASD, as parents in the middle age group (36–45) showed a significantly lower level of PC than other age groups. However, Saudi parents of children with ASD who belonged to the older and younger age groups displayed significantly more PW and PC than parents who belonged to the middle age group. This finding agrees with the findings of Wang et al. (2005), which found that older parents control more and guide less than younger parents. It is also possible that younger Saudi parents tend to exhibit more warmth and control in their parenting styles toward their children with ASD than middle-aged parents because they are more concerned about their children's safety and behaviors while surfing the web, while middle-aged parents have more confidence in themselves due to experience. However, older parents could exhibit more warmth and control in their parenting styles than middle-aged parents as a result of the age

gap between them and their children, leaving them less confident in parenting and wanting to ensure their children's safety, thus causing them to control their internet usage.

Finally, with regard to parents' education level, this study found that there is a significant relationship between education level and PW in Saudi parents of children with ASD. The higher the parental education level, the lower the PW. This finding contradicts the finding of Pauwels et al. (2008) who found that a higher level of education in parents was correlated with a higher level of PW. This could be due to the age differences between the participants of this study and that of Pauwels et al.'s (2008) study, as they studied teenagers, while this study focused on children. It could be that highly educated parents in this study tended to use less warmth and communication regarding internet usage with their children as they were still young.

Limitations

First, this study had a relatively small sample size (n = 222). However, other studies researching related concepts had 50 or fewer participants (Carter & Hartley, 2021; Ekas & Kouros, 2021; Jamal et al., 2021). It is advisable, though, that future studies in special education and on families of children with ASD consider recruiting more participants. Second, this study employed a cross-sectional design, so predictions about future relationships between variables could not be inferred. Therefore, future studies should consider utilizing longitudinal designs in which causation can be investigated. In addition, qualitative studies would be useful to gain a comprehensive view of internet parenting style from parents' perspectives, which will allow the world to hear what they believe is their parenting style and describe their behavior when dealing with their children with ASD's online usage.

Finally, this study did not investigate children with ASD's challenging behaviors, such as repetitive patterns of performance or social and communication difficulties, or their relationship to internet parenting styles, as it was beyond the scope of this study. However, future studies should investigate the challenging

characteristics of children with ASD and how they may affect their relationship with their parents and consequently parenting styles.

Conclusion

Most parents of TDC and children with ASD have developed many styles to protect and limit their children's internet usage. There are significant differences between the internet parenting styles for parents of children with ASD and TDC. Parents exert more control over children with ASD because they view them as vulnerable and easy targets on the internet. This research might shape the direction of future research for interventions that will help protect children with ASD online.

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