

Parental Use of Personal Digital Assistants a Double-Edged Sword for Toddlers

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Abstract

This article investigates the profound physiological impact of Personal Digital Assistants (PDAs) within the context of the digital world on the lives of youth and adolescents. In an era where PDAs, predominantly smartphones and tablets, have become an integral part of daily existence, the effects on physical health are increasingly apparent. The excessive use of these devices is linked to a range of health concerns, including musculoskeletal issues such as "text neck" and repetitive strain injuries, digital eye strain, sleep disturbances, and an increased risk of accidents due to distractions. The sedentary lifestyle encouraged by PDA usage is a growing concern, as is the potential long-term risk of exposure to electromagnetic radiation. A comprehensive approach, which involves promoting balanced PDA usage and educating users on responsible device use, is essential to mitigate these adverse physiological effects on the youth of the digital age.

Keywords: Adolescence, Digital World, Personal Digital Assistant (PDA), Youth, Physiological Impact, Screen Time, Digital Literacy, Cyberbullying, Social-Media, Sleep Disturbance

Introduction

In an era dominated by the digital revolution, it is no secret that social media platforms like Facebook have become an integral part of our daily lives. For kids and youngsters, the allure of staying connected with friends, sharing life's moments, and exploring the vast virtual world through small handheld devices like smartphones and Personal Digital Assistants (PDAs) such as iPad, Smartphone, is undeniable. However, there is growing concern about the adverse effects of this digital exposure, particularly in terms of inappropriate content and its impact on young, impressionable minds.

Note that, the influence and power of the small screen, that are normally small handheld devices, often referred to as Personal Digital Assistants (PDAs) or smartphones, have opened up a world of information and social interaction at our fingertips. These devices allow young people to access social media, explore the internet, and engage with a multitude of digital content wherever they go. While this connectivity offers numerous benefits, there are potential drawbacks that parents, educators, and society as a whole must address. See Figure-1, where it is illustration combined aspect of PDAs, historically.

Moreover, Personal Digital Assistants (PDAs) and small handheld devices, often in the form of smartphones or tablets, have become an integral part of our daily lives. In recent years, these devices have found their way into the hands of many parents as they seek ways to keep their toddlers entertained, quiet, and occupied. While the use of PDAs can provide temporary relief for parents, it's essential to recognize the potential consequences and consider alternative approaches to childcare.

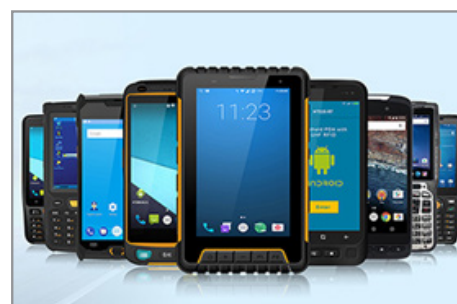


Figure 1: Combined Image of Different PDAs Images

(Source: www.amazon.com)

However, in today's digitally connected world, Personal Digital Assistants (PDAs), including smartphones and tablets, have become ubiquitous tools, and their impact on children's brains and behavior has been a subject of increasing concern. While these devices offer numerous educational and entertainment benefits, they also come with a range of adverse effects, both on the developing brain and behavior of children.

Parental Use of Personal Digital Assistants: A Double-Edged Sword for Toddlers

As we stated in the introduction of this article, small handheld devices assist in daily lives in active, parents drawba



Figure 2: Parental Monitoring PDAs Application

(Source: Courtesy of www.chamspy.com)

Here few points that parents can take into consideration:

- **PDAs as Digital Babysitters**

With the rise of technology and the increasing demands on parents, PDAs have been used as digital babysitters, providing a quick and easy way to keep toddlers entertained. Many parents turn to smartphones and tablets to distract their children, allowing them to complete household chores, work remotely, or simply enjoy a few moments of peace. While it might seem convenient in the short term, this reliance on PDAs as distractions comes with several concerns.

1. **Limited Social Interaction:** Excessive PDA usage can limit a toddler's opportunities for social interaction, hindering their development of essential social skills. Face-to-face communication, learning from others, and developing emotional intelligence are crucial aspects of early childhood development.
2. **Screen Time and Developmental Delays:** The American Academy of Pediatrics recommends that children under the age of two should have no screen time, as excessive exposure to screens can lead to developmental delays, language issues, and behavioral problems.
3. **Missed Learning Opportunities:** Young children learn best through hands-on exploration, play, and interaction

with the world around them. Overreliance on PDAs can rob toddlers of these valuable learning experiences.

4. **Content Control:** Parents may not always be aware of the content their child encounters on these devices, which can lead to unintentional exposure to inappropriate content or create misunderstandings in their young minds.

- **Balancing Technology Use**

While it is essential for parents to find moments of respite, it's equally important to balance technology use in the context of childcare. Here are some strategies that parents can employ:

1. **Set Time Limits:** If you use PDAs to keep your toddler occupied, establish clear time limits and stick to them. Ensure that the majority of your child's day involves active play, interactions with others, and learning opportunities.
2. **Quality Content:** If you decide to use digital content, choose educational apps or programs that align with your child's age and development stage.
3. **Engage Together:** Whenever possible, engage with your child during screen time. Discuss what they are seeing or playing, and make it a shared experience.
4. **Unplugged Play:** Prioritize unstructured, unplugged playtime for your toddler. Offer a variety of toys and activities to encourage creativity and physical development.
5. **Be a Role Model:** Set a good example by limiting your own PDA usage in front of your child. Children often emulate their parents' behaviors.

In conclusion, Personal Digital Assistants can be a valuable tool for parents when used mindfully and in moderation. However, they should not replace the essential activities that support a toddler's healthy development. Parents should seek a balance that allows them to have moments of respite while ensuring that their children have ample opportunities for social interaction, hands-on learning, and unplugged play. In this way, parents can effectively navigate the digital age without compromising their children's developmental well-being.

Adverse and Psychological Effects of Personal Digital Assistants (PDAs) on Children's Brain and Behavior

Excessive PDA use can lead to adverse effects on children's mental health, including increased screen time-related issues, addiction, and cyberbullying, affecting their behavior and emotional well-being.

- **Adverse Effects on the Developing Brain**

1. **Sleep Disruption:** The use of PDAs, especially before bedtime, can lead to sleep disruption. The blue light emitted from screens interferes with the body's production of melatonin, making it harder for children to fall asleep. This can result in insufficient rest, affecting cognitive development and mood regulation.
2. **Reduced Attention Span:** Excessive PDA use can contribute to reduced attention spans in children. Constant notifications and the instant gratification offered by these devices can make it challenging for kids to focus on tasks, impacting their ability to learn and retain information.

3. **Decreased Physical Activity:** PDAs often keep children indoors, reducing their physical activity levels. Lack of physical exercise can lead to health issues such as obesity and decreased overall well-being.
4. **Overstimulation:** The constant exposure to digital content can lead to sensory overload and overstimulation. This can make it difficult for children to manage stress and anxiety, affecting their emotional development.
- **Psychological Effects**
1. **Cyberbullying:** Social media and online interactions on PDAs can expose children to cyberbullying, which may result in feelings of fear, anxiety, and depression. It can also lead to a reluctance to communicate and socialize in the real world.
2. **Addiction and Dependence:** Children can develop addictive behaviors towards PDAs, making it challenging for them to disconnect from the digital world. This can lead to withdrawal symptoms, irritability, and negatively impact their behavior when device access is restricted.
3. **Reduced Empathy:** Overuse of PDAs can hinder the development of empathy. When interactions are primarily digital, children may struggle to understand the emotions and perspectives of others, leading to difficulties in building meaningful relationships.
4. **Social Isolation:** An excessive focus on digital interactions can lead to social isolation, as children may prefer online friendships to real-world connections. This isolation can result in feelings of loneliness and depression.
5. **Decline in Face-to-Face Communication:** PDAs can discourage in-person communication and create difficulties in understanding social cues, gestures, and non-verbal language. This decline in face-to-face interaction can affect children's social and emotional development.

- **Balancing PDA Use**

While it's important to be aware of the adverse and psychological effects of PDAs on children's brains and behavior, it's equally crucial to strike a balance in their use:

1. **Parental Guidance:** Parents should monitor their children's PDA use, set age-appropriate limits, and encourage alternatives like outdoor play, reading, and hobbies.
2. **Education and Awareness:** Teach children about responsible PDA use, online safety, and the potential risks they might encounter.
3. **Quality Content:** Encourage the use of educational and age-appropriate apps and content, ensuring that digital interactions contribute positively to their development.
4. **Role Modeling:** Parents and caregivers should set a good example by maintaining a healthy relationship with their own devices and showing that it's possible to disconnect and engage in face-to-face interactions.

In conclusion, Personal Digital Assistants are powerful tools with the potential to both benefit and harm children's brains and behavior. To mitigate the adverse and psychological effects, parents and caregivers must be proactive in managing PDA use, promoting a balanced lifestyle, and fostering strong interpersonal relationships that extend beyond the digital realm. By doing so, we can ensure that children develop into well-rounded, emotionally healthy individuals who are equipped to navigate the

challenges of the digital age.

The Digital Dilemma: Social Media, Small Screens, and the Impact on Youth Mental Health

It goes without saying that social media sites like Facebook have become an essential part of our everyday lives in a time when the digital revolution is sweeping the nation. The appeal of using small handheld gadgets like cellphones and PDAs to remain in touch with friends, share life's moments, and explore the huge virtual world is evident for children and young adults. But worries about the negative consequences of increased digital exposure are mounting, especially with regard to unsuitable information and how it affects young, sensitive minds.

Here are the top-level points that can be considered as associative of Digital Dilemma:

- **The Power of the Small Screen**

Small handheld devices, often referred to as Personal Digital Assistants (PDAs) or smartphones, have opened up a world of information and social interaction at our fingertips. These devices allow young people to access social media, explore the internet, and engage with a multitude of digital content wherever they go. While this connectivity offers numerous benefits, there are potential drawbacks that parents, educators, and society as a whole must address.

- **Inappropriate Content Exposure**

One of the primary concerns associated with kids and youngsters using social media through small screens is their exposure to inappropriate content. Social media platforms often struggle to regulate the content that gets posted, making it challenging to protect young users from explicit material, cyberbullying, or disturbing images. The ease of accessing this content on a handheld device can have profound effects on a developing mind.

- **Psychological Adverse Effects**

The constant influx of information, often in the form of carefully curated posts and images, can have a significant impact on a young person's mental health. Social media can foster unrealistic expectations, jealousy, and anxiety as young users compare their own lives to the seemingly perfect lives of others. The pressure to gain approval in the form of likes, comments, and shares can lead to self-esteem issues and heightened stress levels.

Moreover, the addictive nature of social media can lead to a decrease in attention span, making it difficult for young people to focus on important tasks or even enjoy real-life interactions. Research has shown a correlation between excessive social media use and increased feelings of loneliness and depression.

- **Parental Concerns and Responsibility**

Parents play a crucial role in monitoring and guiding their children's digital activities. Setting boundaries, discussing the potential risks, and encouraging open communication are essential steps in mitigating the adverse effects of social media on kids and youngsters. Many mobile devices offer parental control features that can help limit access to inappropriate content.

- **Education and Awareness**

Educators also have a responsibility to teach students about re-

sponsible digital citizenship. By emphasizing the importance of critical thinking, media literacy, and online safety, they can help prepare young people to navigate the digital landscape more thoughtfully.

In conclusion, the impact of social media, accessed through small handheld devices, on kids and youngsters is a complex issue with both positive and negative aspects. While it offers a means of staying connected and accessing valuable information, the potential for exposure to inappropriate content and psychological adverse effects cannot be overlooked.

It is imperative that parents, educators, and society as a whole take proactive steps to ensure that young people are equipped with the tools and knowledge to use social media responsibly and safely. By addressing these concerns, we can help create a healthier digital environment for the next generation.

The Complexity of Adolescence in a Digital World

Adolescence, often described as a transitional phase from childhood to adulthood, has always been a complex and challenging period. However, in today's digital world, the experience of adolescence has taken on new layers of intricacy. The pervasive presence of technology, the internet, and social media has profoundly influenced the lives of young individuals, shaping their identities, relationships, and overall development. This article explores the multifaceted nature of adolescence in the digital age, focusing on the challenges, opportunities, and key considerations that both adolescents and those who support them must navigate.

• Digital Identity Formation

One of the central aspects of adolescence is the formation of identity. In the digital world, this process takes on a new dimension. Adolescents craft their online personas through social media profiles, and the virtual world often becomes an extension of their real-life selves. They grapple with questions of authenticity, seeking validation through likes and comments while also managing the pressure to curate idealized versions of their lives. The virtual identity can be a source of empowerment but also vulnerability, as it opens the door to cyberbullying, privacy concerns, and the blurring of the line between the online and offline self.

• Peer Relationships and Social Dynamics

Adolescents have always relied on peer relationships for support and guidance, but the digital world has significantly altered the dynamics of these connections. Social media platforms have amplified both positive and negative aspects of peer interaction. Online friendships can offer valuable support networks, but they can also lead to social isolation and contribute to feelings of exclusion. The Fear of Missing Out (FOMO) often pervades online interactions, affecting self-esteem and mental well-being.

• Cyberbullying and Mental Health

The digital world has introduced a new form of bullying – cyberbullying – which can have severe consequences on adolescent mental health. The anonymity provided by online platforms can embolden individuals to engage in hurtful behaviors they might not exhibit in person. The result is often increased anxiety, depression, and, in extreme cases, suicidal thoughts among

adolescents. The negative impact on mental health is a pressing concern that demands vigilance and prevention efforts.

• Screen Time and Physical Health

Adolescents are spending more time on screens than ever before, which can have physical health implications. Excessive screen time can contribute to a sedentary lifestyle, obesity, sleep disturbances, and a range of health issues. The balance between screen uses and outdoor activities, exercise, and physical well-being is a critical aspect of the digital world that needs attention.

• Parental Guidance and Digital Literacy

Navigating the complexities of adolescence in the digital age requires collaboration between adolescents and their caregivers. Parents play a vital role in providing guidance, setting boundaries, and fostering digital literacy. Education on online safety, responsible device use, and the recognition of digital red flags is essential.

In conclusion, the digital world has brought both opportunities and challenges to the experience of adolescence. While it provides a platform for self-expression, creativity, and connection, it also introduces risks and complexities that demand thoughtful navigation. Adolescents need guidance, support, and the development of critical digital literacy skills to help them thrive in this digital landscape. Adolescence in a digital world is indeed a complex journey, and understanding and addressing these intricacies is paramount to the well-being and development of the next generation.

What Data Presenting Driven Digital Age?

The adverse impact of Personal Digital Assistant (PDA) usage, particularly with a focus on social media and platforms like Facebook, on the mental health of young individuals is a topic of growing concern. While PDAs provide a wealth of information and communication tools, they can also have several detrimental effects on youth mental health.

1. **Addiction and Obsession:** PDAs, equipped with social media applications, can be highly addictive. The constant notifications, the need to check for updates, and the desire for likes and comments can lead to obsession. This constant compulsion to engage with social media can lead to increased stress and anxiety, affecting youth mental health negatively.
2. **Fear of Missing Out (FOMO):** Social media platforms are often filled with carefully curated and idealized versions of people's lives. This can trigger a "Fear of Missing Out" (FOMO) among young users, leading to feelings of inadequacy, loneliness, and even depression. The need to constantly stay connected can lead to anxiety, as users fear they will miss out on important events or updates.
3. **Comparison and Self-esteem Issues:** Excessive use of social media encourages youth to compare themselves with others. This can lead to lowered self-esteem as they measure their lives against the often embellished or filtered lives of their peers. This constant comparison can foster feelings of worthlessness and inadequacy.
4. **Cyberbullying:** Social media platforms provide an avenue for cyberbullying, which can have severe consequences for the mental health of young individuals. Cyberbullying can

lead to anxiety, depression, and even suicidal thoughts in some cases.

5. **Reduced Real-world Social Interaction:** The digital nature of social media can lead to a decrease in face-to-face social interactions. This can lead to loneliness, as young individuals may substitute online interactions for real-world friendships and connections.
6. **Sleep Disturbance:** The use of PDAs, especially before bedtime, can disrupt sleep patterns, resulting in inadequate rest and affecting mood and cognitive function. Sleep disturbance can contribute to anxiety and depression.
7. **Information Overload:** Constant exposure to a barrage of information and social interactions can lead to information overload. Young individuals may find it challenging to manage this constant influx of data, causing stress and anxiety.
8. **Privacy Concerns:** Overexposure on social media can lead to privacy concerns, with young individuals often sharing personal information without fully understanding the potential risks. The fear of privacy breaches or online harassment can negatively affect mental well-being.

In conclusion, while PDAs and social media offer numerous benefits, they also come with potential adverse impacts on the mental health of young users. It is essential for parents, educators, and caregivers to be aware of these issues and provide guidance on responsible and balanced PDA and social media usage. Encouraging open communication and teaching digital literacy can help mitigate these adverse effects and promote healthier youth mental well-being in the digital age.

PDA Personal Digital Assistant and digital world driving physical Harm

Personal Digital Assistants (PDAs), which include smartphones and similar handheld devices, have transformed the way we interact with the digital world. While they offer tremendous convenience and connectivity, their use can sometimes lead to physical harm or health issues. Here are some ways in which PDAs and the digital world can impact physical well-being [1, 2]:

1. **Text Neck:** Excessive use of PDAs often involves looking down at the screen for extended periods, leading to a condition commonly known as "text neck." This can result in neck pain, strain, and even long-term musculoskeletal issues.
2. **Digital Eye Strain:** Staring at PDA screens for extended periods can cause digital eye strain, leading to symptoms like dry eyes, headaches, blurred vision, and fatigue. This condition is often exacerbated by the blue light emitted from screens.
3. **Repetitive Strain Injuries (RSI):** Typing, swiping, and tapping on PDA screens for prolonged periods can lead to repetitive strain injuries, such as carpal tunnel syndrome, affecting the wrists and hands.
4. **Sleep Disturbance:** The blue light emitted from PDA screens can interfere with the body's production of melatonin, a hormone responsible for regulating sleep. This can lead to sleep disturbances and result in inadequate rest.

5. **Accidents and Injuries:** The use of PDAs while walking or driving can distract individuals, increasing the risk of accidents and injuries. Texting and walking, for example, can lead to falls or collisions, while texting and driving is a significant cause of road accidents.
6. **Sedentary Lifestyle:** Excessive PDA use can contribute to a sedentary lifestyle, as individuals spend long hours sitting or lying down while engaging with digital content. This lack of physical activity can lead to health problems like obesity, cardiovascular issues, and reduced overall well-being.
7. **Radiation Exposure:** While the health effects of exposure to electromagnetic radiation from PDAs are a subject of ongoing research, some concerns exist regarding potential long-term risks.
8. **Addiction and Social Isolation:** Excessive PDA use can lead to addiction, where individuals neglect real-world interactions and physical activities. This isolation can contribute to various physical and mental health problems.

To mitigate the physical harm associated with PDAs and the digital world, it is essential to use these devices mindfully and in moderation. Individuals should be aware of ergonomics, take breaks, and practice good posture when using PDAs. Additionally, fostering a balanced lifestyle that includes physical exercise, outdoor activities, and face-to-face social interactions is crucial. Educating individuals, especially young people, about the potential risks and promoting responsible device use can help reduce the adverse physical effects associated with the digital age.

Artificial Intelligence Driven Treatment

Artificial Intelligence (AI) can play a significant role in helping to address the health concerns related to excessive device use, such as "text neck," repetitive strain injuries, digital eye strain, sleep disturbances, and the increased risk of accidents [3, 4].

Here's how AI can assist in treatment and prevention:

1. **Posture Monitoring:** AI-powered wearable devices can track users' posture while they are engaged with their PDAs. These devices can detect signs of "text neck" and poor posture and provide real-time feedback to encourage better ergonomics.
2. **Ergonomic Reminders:** AI algorithms can be integrated into smartphones and tablets to provide reminders and suggestions for maintaining proper ergonomic positions while using the device. This can help prevent musculoskeletal issues.
3. **Eye Health Monitoring:** AI can analyze eye movement and blinking patterns to identify digital eye strain. Users can receive alerts to take breaks, blink more frequently, or adjust screen settings to reduce eye strain.
4. **Sleep Tracking:** AI-driven sleep tracking apps can monitor an individual's sleep patterns and provide insights into how screen time affects sleep quality. These apps can make recommendations for improving sleep, including setting screen time limits before bedtime.
5. **Digital Detox Strategies:** AI can assist in developing personalized digital detox plans. These plans can include strategies for reducing screen time, setting goals for healthier

device use, and providing rewards for achieving those goals.

6. **Driver Monitoring:** AI can be used in vehicles to detect when a driver is distracted by their PDA. It can issue warnings or take corrective actions to minimize the risk of accidents.
7. **Content Filters:** AI algorithms can be integrated into parental control apps to filter out inappropriate content and ensure that children and adolescents are not exposed to harmful material.
8. **Health and Wellness Apps:** AI-driven health and wellness apps can offer exercises and relaxation techniques to combat the physical and mental health effects of excessive device use.
9. **Data Analytics:** AI can analyze vast amounts of user data to identify trends and patterns related to device usage and its impact on health. This data can be invaluable for healthcare professionals in tailoring treatment and prevention strategies.
10. **Telehealth and Consultations:** AI can facilitate telehealth consultations, allowing individuals to connect with healthcare professionals for advice and treatment related to the physical and mental health issues resulting from excessive device use.

In summary, AI has the potential to offer personalized, real-time solutions for mitigating the adverse effects of excessive device usage. By monitoring, analyzing, and providing recommendations, AI can empower individuals to take proactive steps in addressing the health concerns associated with PDAs and digital devices.

Conclusion

In conclusion, this article has delved into the multifaceted impact of Personal Digital Assistants (PDAs) on the well-being of children and adolescents. The adverse and psychological effects of excessive PDA use, particularly concerning social media, have been thoroughly examined. We've explored how PDAs influence various aspects of children's lives, from digital identity formation to peer relationships, highlighting the challenges and opportunities that arise in the digital world. We've also considered the physical health implications and the importance of a comprehensive approach to mitigate these adverse effects. It is clear that the digital age has introduced both unique complexities and

potential solutions for youth and adolescence. To navigate this terrain successfully, a balanced approach, including guidance, education, and responsible device use, is crucial to ensure the well-being of the digital generation [5, 6].

Furthermore, A comprehensive approach is often the most effective strategy when dealing with complex problems. These multifaceted challenges require a holistic perspective, where various aspects are considered and addressed in a coordinated manner. By recognizing the interconnected nature of the problem and employing a wide range of strategies, a comprehensive approach allows for a more in-depth understanding and, subsequently, more effective solutions. It involves collaboration, the integration of diverse perspectives, and the implementation of various tools and resources to tackle the complexity at its roots. Whether it is a societal issue, a public health crisis, or a multifaceted challenge, a comprehensive approach is a powerful means to achieve lasting and impactful solutions [5, 6].

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