



## Social media and children: what is the paediatrician's role?

Adamos Hadjipanayis<sup>1,2,3</sup> · Elisavet Efstathiou<sup>1,3</sup> · Peter Altorjai<sup>3,4</sup> · Tom Stiris<sup>3,5,6</sup> · Arunas Valiulis<sup>3,7</sup> · Berthold Koletzko<sup>3,8</sup> · Helena Fonseca<sup>3,9</sup>

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### Abstract

Social media use has become an integral part of children's and adolescents' lives. It has become a novel way of interaction among people and influences people's social lives and public opinion as well as people's purchasing decisions and businesses. Any website or platform that allows social interaction is considered to be a social media site. Social media use among children in 25 European countries has been reported to be 38% among 9–12 year olds and 77% among those aged 13–16 years. All these children report having their own profile on at least one social network site. While social networking provides children and adolescents with many opportunities and benefits, it also carries many risks. Among the benefits are socialization and communication enhancement, improving learning skills, positive impact on education and getting health information. Potential risks of social media use include falsifying age and identity, cyberbullying, sexting, Facebook depression, gamification, glamourization, cyberostracism and sleep disturbances.

**Conclusion:** Paediatricians play a vital role in promoting the physical, mental and social welfare of all children. There is a critical need for paediatricians to play an active role, guiding children and families appropriately through the impact of social networking, in order to become a real driver of children's development.

**Keywords** Social media · Social media use · Cyberbullying · Sexting · Gamification · Glamourization

### Abbreviation

SNS Social network site

### Introduction

Social media use has become an integral part of children's and adolescents' lives. Undoubtedly, children and families live in an era of a fast-paced, ever-changing world. Social media use is

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✉ Adamos Hadjipanayis  
adamos@paidiatros.com

Elisavet Efstathiou  
liza.efstathiou@gmail.com

Peter Altorjai  
peter.althorjai@gmail.com

Tom Stiris  
tom.stiris@medisin.uio.no

Arunas Valiulis  
arunas.valiulis@mf.vu.lt

Berthold Koletzko  
Berthold.Koletzko@med.uni-muenchen.de

Helena Fonseca  
helenaregalofonseca@gmail.com

- <sup>1</sup> Department of Paediatrics, Larnaca General Hospital, Inomenon Polition, 6042 Larnaca, Cyprus
- <sup>2</sup> Medical School, European University of Cyprus, Nicosia, Cyprus
- <sup>3</sup> European Academy of Paediatrics, Brussels, Belgium
- <sup>4</sup> Association of Hungarian Primary Care Paediatricians, Budapest, Hungary
- <sup>5</sup> Department of Neonatology, Oslo University Hospital, Oslo, Norway
- <sup>6</sup> Faculty of medicine, University of Oslo, Oslo, Norway
- <sup>7</sup> Vilnius University Medical Faculty, Institutes of Clinical Medicine and Health Sciences, Vilnius, Lithuania
- <sup>8</sup> LMU - Ludwig-Maximilians-Universität Munich, Dr. von Hauner Children's Hospital, Univ. of Munich Medical Centre, Munich, Germany
- <sup>9</sup> Adolescent Medicine Division, Department of Paediatrics, University of Lisbon, Lisbon, Portugal

one of the main factors for this new phenomenon. Social media has become a novel way of interaction among people and influences people's social lives, public opinion, and policy as well as people's purchasing decisions and businesses [40].

Any website or platform that allows social interaction is considered to be a social media site [47]. The term *social networking* is used to describe “the act of engagement”, whereas social media is the tool used to connect with a group of individuals. Social media provides a platform that offers a unique prospect of social interaction through sharing of texts, ideas, photos, videos or audio messages with other social media users [27]. The most popular social media sites at the time of publishing this piece of work are Facebook, YouTube, WhatsApp, Facebook Messenger, WeChat, Instagram, QQ, QZone, Tik Tok, Snapchat and Twitter [45].

In the twenty-first century, social networking takes place also on virtual gameplay platforms and virtual worlds [46]. Online multiplayer games like *World of Warcraft*, *League of Legends*, *Clash of Clans* and *Fortnite* have become very popular in recent years among children and adolescents. These games give them the opportunity to share with other people similar gaming interests. Virtual worlds such as *Club Penguin*, *Second Life*, *Minecraft*, *OurWorld* and *The Sims* are also very popular among adolescents.

The use of social media plays a huge part in the lives of many people. The influence of social media on children is profound. According to Common Sense Media research, 51% of the adolescents check social media websites more than once a day and 22% of them check more than 10 times per day [16].

A study focusing on the relationship between social media and socio-economic status showed that the predominant use of social media on the internet may correspond to lower socio-economic status [65]. However, a recent paper concludes that different forms of digital media usage are related to other social, cultural and economic aspects of social class status and contemporary social systems of distinction [64].

Paediatricians have a uniquely close relationship with children and their families, and an essential role to play in shaping the perception of a healthily balanced social media use for their patients.

The aims of this statement are to explore the potential benefits and risks of social media use by children and adolescents and to discuss how paediatricians can guide children, adolescents and their parents in promoting healthy use of social media in their daily lives.

## Social media use by children and adolescents - setting the scene

The internet is currently being used regularly by almost every 11–16-year-old child, the majority of 5–10 year olds and by around a third of 3–4 year-olds [39].

A study conducted in 2017 showed that almost a quarter (23%) of children aged 8–11 years old, and three quarters (74%) of those aged 12–15 years old have at least one social media profile; by the age of 12, half of all children have a social media profile [49].

The childwise monitor report in 2017 showed that 40% of children aged 7–16 use the internet for social networking, 47% to interact with family and friends and 54% to play games [14].

The Organisation for Economic Co-operation and Development (OECD) Programme for International Student Assessment investigated the online activities of 15-year-old students crosswise OECD countries and found that 73% of the students were participating in social networks on a daily basis [48]. In addition, 84% of them agreed with the statement “It is useful to have social networks on the internet” [48]. Social networking is one of the most popular online activities (62%), following internet use for school activities (85%), playing online games (83%) and watching video clips (76%) [38].

Furthermore, the rising use and easy access to mobile devices give children the possibility to be constantly connected to their online social networks. In addition, they are able to keep up to date with their social news at any time; they can receive messages from friends on their screens, and they can post personal events, thoughts and ideas [42]. Moreover, they can upload and share data including videos and photos, post comments, share links, tag photos, share game revisions, etc.

## Impact of social media on children and adolescents

While social networking provides children and adolescents with many opportunities and benefits such as widening social connections, enhancing communication and improving learning skills, it also carries many risks. Although risks do not always lead to adverse outcomes, it is essential to assess where and to which extent using social media may potentially induce harm to children [40].

### Positive impact

A wide range of benefits for children and adolescents who regularly engage with social media has been reported, including expanding their social network and autonomy and increasing the sense of emotional connection with peers, as well as enhancing communication [30, 53].

### Socialization and communication enhancement

Social media connections are nowadays an integral part of youngsters' lives mostly as a means of socialization [36]. If

a child/adolescent does not use social media (because of his/her own or his/her parents' decision), he/she might be at risk of social exclusion and of being stigmatized by his/her peers.

Social networking can have a positive impact on children's social development, improving their wellbeing [42, 63]. Social media provide an easy way for children to communicate with their friends. To illustrate this, 51% of 13–17-year-old US children reported communicating with their friends via social media [12]. Friendship with peers is an essential component and main driver for adolescents' psychological development and wellbeing [55].

In addition, research shows that communication using social media helps develop stronger relationships with peers through the opportunity to remain closer on a daily basis [59, 63]. Studies reveal that preadolescents and adolescents communicate online mostly to keep in contact with their current friends [52, 59]. Since online communication overcomes physical distance, virtual communication becomes an easier way of interaction with friends, in contrast with face-to-face communication [43].

Online communication diminishes feelings of loneliness as social networking helps create new friendships, although sometimes this may be just an illusion [7].

### Learning skills and positive impact on education

The participation of children in social networking activities contributes to the development of their social skills (as they communicate and interact online, creating their own virtual world) and creative skills (as they can create and share quality content online) [28]. Furthermore, social media may have a positive impact on children's education. Children can share ideas with other classmates about homework activities, and they have the opportunity to find new learning resources and expand their knowledge [50]. The notion of sharing knowledge with different individuals is termed "interprofessional education", leading to better outcomes as they learn from each other's experiences [9]. The creation of study groups through social networks that permit multiple-user conversations and homework sharing can contribute to the achievement of this kind of communication.

### Getting health information

Adolescents can find useful information regarding health issues through social media. They may have the opportunity of engaging in groups with similar health problems (such as diabetes, asthma, cystic fibrosis and other chronic conditions) where they can discuss their concerns and find answers and support through associated organizations [58]. They can also come across people who can offer their expertise in a specific field of health [33]. A 1997 review paper by WHO on sexual education programmes showed no supporting evidence for the

prior argument that sexual education programs may encourage sexual activities among adolescents [24]. Conversely, certain social network site (SNS) program interventions proved to have a positive effect on promoting sexual health [21].

Nowadays, there are also many mobile applications available in order to help users to get health information and to communicate with their doctors. These applications may also allow the users to track their calorie intake, exercise, sleep patterns, etc. [29]. Despite the positive impact of social media websites in getting health information, young children and adolescents may also come across inaccurate health information. Thus, parental involvement is required to be sure they are using reliable online resources.

### Potential risks and associated conditions of young persons using social media

The use of social media bears potential risks, in particular for younger users.

#### Falsifying age and identity

According to COPPA of the USA, 13 years of age is the lower limit for websites, particularly social network services, to collect personal information of any sort without parental permission [13]. Therefore, most social media platforms clearly prohibit children below this age limit to sign up. While EU does not have a similar regulation, the General Data Protection Regulation (GDPR) under Article 8 specifies the lower age limit to be 16 years. Currently, SNS users between ages 13 and 15 are mostly obliged to get parental permission.

However, falsifying age has unfortunately become a common practice for preadolescents. It has been estimated that 40% of the whole 13–19-year-old population of Facebook users were actually below the age limit [49]. Age fabrication brings instant access to age-restricted materials and is unfortunately also not uncommon among adults, the latter usually posing to be younger than actual.

The false identity created for social media, the "Facebook self", is usually more socially acceptable, intending to gain more popularity. Since this falsely represented self earns more rewards than the true one, the vicious circle goes on with more time spent on social media, creating content in the name of this false self, leading to addiction-like symptoms. Therefore, this phenomenon may also be considered as a gateway to possible mental behavioural pathologies overlapping other pathologies with narcissistic personality [22].

#### Cyberbullying

Cyberbullying is any behaviour performed through electronic or digital media by individuals or groups that repeatedly communicate hostile or aggressive messages intended to inflict

harm or discomfort on others. Cyberbullying, compared to traditional bullying, has the potential to be much more damaging because victims can be reached anytime of the day and because it provides anonymity which amplifies aggression as the perpetrator feels out of reach. Therefore, it may result in stronger negative outcomes compared to other traditional forms of bullying.

Moreover, the ability to hide behind fake names provides bullies the opportunity to communicate in content and language they would otherwise not use directly to someone's face [26].

### Sexting

Sexting refers to sending nude or sexualized texts, photos or videos to others through digital technology. Many of the above actions are spreading quickly via cell phones or the internet. Other sexual actions consist of online pornography, pursuing sexual material, searching for sex shops, looking for sex therapists and connecting with partners using the internet [41].

The prevalence of sexting cannot accurately be recorded due to the range of definitions and sampling methods.

The extensive sharing of sexting actions via smart phones and computers has been associated with a negative impact on the emotional and social wellbeing of the individuals involved [5]. Engaging in sexting activities is associated with earlier sexual debut, having multiple sex partners later on and also using drugs in combination with the above [8, 17]. According to a Czech longitudinal study, sexting should be treated as a precursor of offline sexual behaviour [57].

It can also cause spreading of sexual content material without consent, legal concerns (especially if those involved are under the legal consent age) and risk behaviours such as suicide [11, 54].

Blackmail, sexual abuse and lack of consent in publishing other people's photos are quite often associated with sexting [62]. An Australian study showed that half of the images shared on paedophile sites were taken from social media sites [34]. There is therefore an obvious need to make children understand the long-term impact of sexting on their own digital footprint.

### Facebook depression

“Facebook depression” was described in 2011 in an article focusing on the impact of social media on young individuals [50]. The authors claim that children and adolescents who spend a great deal of time on social media sites may begin to display classic symptoms of depression.

In addition, other studies support that daily overuse of social media networks has a negative impact on the emotional wellbeing of children and adolescents and predisposes them to

mental health problems such as anxiety, depression and other mental disorders [1].

Individuals suffering from Facebook depression may be at increased risk of social isolation, and they are also more vulnerable to being influenced by websites promoting drug abuse, risky sex practices and aggressive behaviours [50].

### Gamification

Gamification is applying game-like elements and principles to an originally non-gaming context and environment. Its techniques used online definitely rely upon mankind's historical needs for competitions, rewards and prizes based on human natural desire for achievement, competition, socializing, self-expression, self-esteem and also altruistic behaviour. According to the Bartle Test of Psychology [3], four categories of individuals can be identified: the achiever, the explorer, the socializer and the killer (or in some other contexts: the winner). A gamification environment usually relies on and builds up on all these elements. Gamification definitely has its advantages [32] in many areas such as the business world and educational fields and is even infiltrating the digital healthcare domain [56]. Social networks proved to be the ideal domain for gamification by leveraging engagement with immediate access and interaction with other peers. Gamification has already been used in children in areas such as exercise and nutrition interventional programmes [18–20]. However, gamification when not designed properly can be a source for feeling exploited and manipulated and it may also have a negative impact when certain mindset techniques utilized in the gaming environment are applied to real-life scenarios.

### Glamourization

It is by definition a way of making things appear better than they are, therefore gaining more attention and significance. When inside social media, people—even children—often use the platform to display a better version of themselves, and through the many independent channels, they are allowed to create and maintain separate identities with completely different social circles of acquaintances. These identities may differ for meaningful reasons—e.g. LinkedIn needs more business-like and conservative profiles; Facebook, on the other hand, is to represent the less professional face of the user [23]. Maintaining the “picture perfect” social media identity, driven by (sometimes the lack of) feedback comments, “shares” or “likes”—all serving as measures of popularity—creates a massive daily burden, which may result in neglecting the individual's own self in terms of actual physical appearance [2] and real-life human interactions.

Secondly, mass media—all printed, broadcasted and shared over the internet—has a huge role to play in glamourizing certain types of outlook and behaviour (e.g. carrying a

weapon, violent or flirtatious acting, etc.), which would normally be criticized and even rejected in real life [31, 51].

### Cyberostracism

While on one hand using any social media helps bring the positive feeling of being constantly connected, therefore preventing someone from feeling ignored or excluded, it can also have the opposite effect, which is termed *cyberostracism* [61]. Its name is derived from ancient Greek history meaning being temporarily expelled. In the online world, ostracism threatens the four basic human needs: belonging, self-esteem, control, and meaningful existence [60].

Ostracism is a tool of adaptation for a group of peers to eliminate unwanted members; however, for the ostracized individuals, it carries psychological burden, which could lead to unforeseen maladaptive reactions, such as avoidance coping strategies. Also, those being ostracized for long periods or on a frequent basis may have the potential to be more open and vulnerable to joining groups based on extremities, thus pushing the individual further out from the tracks of mainstream population.

### Privacy issues

Privacy issues such as identity theft, re-sharing pirated information on predator sites, sharing psychosocial information that should remain private and sharing revealing or embarrassing information that may be misused by others are some of the related concerns regarding the use of social media [12]. Pictures and videos posted and personal information shared via social networking cannot be removed and may cause undesirable effects if unfitting information is shared [12]. These kinds of activities place one's privacy at risk, which may often be underestimated by inexperienced media users, such as children and adolescents.

### Sleep disturbances

Children may spend long periods of time visiting social media sites, which may result in sleep deprivation due to delayed bedtimes and reduced total sleep duration. Furthermore, sleep disturbances may also be associated with the disruption of circadian rhythms due to the light emission from the electronic screen-based media devices [15, 35]. Negative outcomes including poor school performance, childhood overweight and obesity, and emotional issues have all been associated with sleep deprivation [4, 10].

According to the results of a systematic review which examined the association between screen time and sleep effects among school-aged children and adolescents, screen time is adversely linked with sleep outcomes in 90% of studies [25].

The two main sleep disturbances found were shortened sleep duration and delayed timing.

### The role of the paediatrician

Paediatricians play a vital role in promoting the physical, mental, and social welfare of all children. The responsibility for endorsing optimal development of children broadens the paediatrician's role to aspects outside the traditional boundaries of medicine [44]. Social media use by children has rapidly become an integral part of their lives. Whereas most paediatricians did not grow up in the “modern world” of social networks, the children they are taking care of have never been accustomed to a world without them.

### Recommendations

1. Paediatricians should regularly inquire about their young and adolescent patients' social media pursuits and habits and their potential negative effects, when taking a psychosocial history [37].
2. Paediatricians should be familiar with the types of social media to which children and adolescents may be exposed to. Thus, they should expand their knowledge about social networking in order to be able to support and educate both the children and their parents regarding this issue. Furthermore, they need to be familiar with safety and privacy issues of social networking communication. By increasing their knowledge about the usage of social media, they can promote sharing of information, ideas and training in media sites among families and educators, in order to better understand the benefits and risks of social media [37].
3. Paediatricians should be able to identify media-related matters and associated health conditions, to ensure timely recognition and appropriate management. Moreover, they should be aware of the most recent data on the influence of social media on children's development and wellbeing [37].
4. Paediatricians should provide suitable, opportunistic social media guidance for children and their parents during routine, follow-up consultations. Paediatricians' role is crucial in promoting greater levels of parental awareness concerning the dangers encountered by children during social media use (risks regarding both social and health issues) [37]. Paediatricians should be able to advise and encourage parents to do the following:
  - Become familiar with social media websites and how to use these websites appropriately.
  - Recognize challenging issues associated with social media use such as cyberbullying, “Facebook depression”,

sexting, sleep disturbances and exposure to inappropriate content.

- Learn about available reputable online resources regarding the risks of social media use.
- Explore social media together with their child and discuss their value and risks.
- Build up a friendly relationship with their children in order to be able to talk openly about social media and set limits for safe internet use.
- Facilitate the development of self-management skills in their children.
- Encourage parents to discuss with their children the use of social media and privacy settings during public social networking.
- Encourage their children to have valuable and positive experiences online and to establish effective digital skills through safe participation.
- Screen for social media exposure amount and content. Strategies for implementing household rules and setting limits are associated with reduced levels of depression [6]. It is much more important for parents to supervise online activities of their children via active participation, than using any available software to monitor internet use in their absence. At the same time, parents must be respectful of their children's privacy.

The world of social media plays a central role in today's children's lives. There is a critical need for paediatricians to play an active role, guiding children and families appropriately through the impact of social networking, in order to become a real driver of children's development.

#### Authors' contributions

- Adamos Hadjipanayis: study conception, design and drafting the article
  - Elisavet Efstathiou: drafting the article
  - Peter Altorjai: contributed to the improvement of the manuscript in terms of content
  - Tom Stiris: study conception and reviewed the manuscript
  - Arunas Valiulis: scrutinized and reviewed the manuscript
  - Bert Koletzko: scrutinized and reviewed the manuscript
  - Helena Fonseca: commented on the initial draft and contributed to improve the manuscript in terms of content.
- All authors have read and approved the manuscript.

#### Compliance with ethical standards

**Conflict of interest** The authors declare that they have no competing interests.

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