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Parenting and Digital Media: From the Early Web to Contemporary Digital Society

Deborah Lupton, News & Media Research Centre, Faculty of Arts & Design, University of Canberra, Australia

Sarah Pedersen, Department of Communication, Marketing and Media, Aberdeen Business School, Robert Gordon University, UK

Gareth M Thomas, School of Social Sciences, Cardiff University, UK

Abstract

Parents have accessed websites, online discussion forums and blogs for advice, information and support since the early days of the World Wide Web. In this article, we review the literature in sociology and related social research addressing the ways in which digital media have been used for parenting-related purposes. We begin with the longer-established media of parenting websites, online discussion forums, blogs, email, mobile phones and message and video services and then move on to the newer technologies of social media and apps. This is followed by a section on data privacy and security issues. The concluding section summarises some major issues arising from the review and points to directions for further research.

Introduction

Parents have accessed websites, online discussion forums and blogs for advice, information and support since the early days of the World Wide Web (which first became widely available to users in the mid-1990s). In this century, the advent of mobile media such as smartphones and tablet computers and Wi-Fi has allowed parents to access the web from almost any location. They can use social media platforms and apps (software applications for mobile devices) as part of their parenting practices. These technologies have brought with them

opportunities for parents to seek information and support and exchange details of their experiences with each other in a variety of ways. Such practices contribute to datafication, that is, rendering details of people's lives into digital data formats (van Dijck 2014) - not only of parents themselves but also of their children. The possibilities that now exist not only for voluntary sharing of one's personal data with others but also for data leakage and commercial exploitation of this information are key differences between the early digital media that were available to parents and those that they currently use.

In this article, we review the literature in sociology and related social research addressing the use of digital media for parenting-related purposes. We begin with the longer-established media of parenting websites, online discussion forums, blogs, email, mobile phones and message and video services and then move on to the newer technologies of social media and apps. A section on data privacy and security issues follows. The concluding section summarises some major issues arising from the review and points to directions for further research.

Websites and online discussion forums

Parenting websites have been in existence since the 1990s, and this medium remains popular for parents. Such sites frequently combine the provision of information about many pregnancy- and parenting-related topics, with opportunities for users to chat with each other on discussion boards. Many also feature advertising and product guides and directories for pregnancy and parenting products. Parenting websites now often offer their own customised apps to enable users to connect via their mobile devices and have established a presence on social media. For example, this includes using dedicated Facebook pages, Instagram or Twitter accounts to promote their content and generate further user discussion and reaction. The most highly-viewed sites attract tens of thousands of posts to the discussion boards and millions of views each month. The most popular include the UK-based Mumsnet and NetMums, the Australian sites Belly Belly and The Bub Hub and the US-based BabyCenter, CafeMom, Parents.Com and Parenting.Com (Alexa 2016). There is a range of more specialised sites for parents available as well. There are sites specifically for fathers, single parents, adoptive, foster or step-parents, parents in the military, people who adhere to attachment parenting principles, parents of multiples or special-needs children, parents with large families, or parents of children in specific age categories (infants, toddlers, school children or teenagers). Some websites are outlets for parenting magazines while others are provided by commercial enterprises such as infant product manufacturers or government or non-profit organisations

A plethora of social research studies has been published on parenting websites and discussion forums. Most researchers agree that women value these sites for providing support and information, although they are mainly complementary to the advice of healthcare professionals or trusted family members (Sarkadi and Bremberg 2005; Madge and O'Connor 2006; Plantin and Daneback 2009; Pedersen and Smithson 2010; Moravec 2011; Chen *et al* 2014; Johnson 2015; O'Higgins, Murphy, Egan *et al.* 2015; Lupton 2016). These sites offer an important venue for very personal topics like the disappointments and frustrations as well as

the pleasures of motherhood to be articulated (Lupton 2016; Pedersen and Lupton in press). The anonymity of such sites means that users are not constrained by the norms of face-to-face communication and can freely criticise other members of their families, particularly husbands (Madge and O'Connor 2006; Schoenebeck 2013; Pedersen, 2014). It has been suggested that the use of these media can lower rates of depression and lift self-esteem by providing validation for the 'normalcy' of mothers' experiences (Miyata 2002; Hall and Irvine 2009) and demonstrating that they are not the only mothers going through difficult times (Madge and O'Connor 2006; Brady and Guerin 2010; Gibson and Hanson 2013; Lupton 2016). Participation on these sites can also allow new mothers to be introduced to alternative perspectives and try out different versions of motherhood (Madge and O'Connor 2005; Phillips and Broderick 2014; Johnson 2015; Pedersen and Lupton in press).

Some researchers have claimed that the forums are mainly used by white, middle-class, heterosexual women (Worthington 2005; Madge and O'Connor 2006). However, others have shown that the use of parenting sites is more diverse, with lone parents and those with lower levels of education and income also finding support (Dunham *et al* 1998; Sarkadi and Bremberg 2005). Websites and discussion boards can be used by working-out-of-the-home mothers to perform maternal role identities while separated from their children (Chan 2008) or by lonely mothers looking to find friends (Parry *et al* 2013). They can also offer valuable support for parents dealing with particular challenges related to their child's health, behaviour or development (Fleischmann 2004; Lowe *et al* 2009; Holt 2011; Appleton *et al* 2014; Lupton 2016).

While there has not been as much research directed specifically at fathers' use of parenting websites and online discussion forums, a body of literature has been established on this topic, largely dominated by a small number of researchers in the Nordic countries and Australia. This literature has shown that men may also turn to these media for support and advice, particularly from other fathers. However, men who post on general parenting forums can find themselves criticised for violating the supportive function of these almost exclusively female communities (Brady and Guerin 2010; Pedersen 2015). Men who feel themselves relegated to secondary parent status may use forums to enact their fatherhood and to find information and emotional support and a place for self-reflection (Friedewald, Fletcher and Fairbairn 2005; Fletcher and StGeorge 2011; StGeorge and Fletcher 2011; Eriksson and Salzmann-Erikson 2013; Salzmann-Erikson and Eriksson 2013; Eriksson, Salzmann-Erikson and Pringle 2014).

Parenting websites can be particularly helpful in supporting men's transition to fathering (Hudson *et al* 2003; Fletcher, Vimpani, Russell *et al.* 2008; Nyström and Öhrling, 2008; StGeorge and Fletcher 2011) or the fathering of children with chronic or life-threatening illnesses (Nicholas, Sullivan, Mesbur *et al.* 2003; Nicholas, Chahauver, Brownstone *et al.* 2012; Swallow, Knafl, Sanatacroce *et al.* 2012). Focusing on the way in which fathers communicate on the forums, studies have identified the use of humour and stories as a communication tool (Eriksson and Salzmann-Erikson 2012; Fletcher and StGeorge 2011), particularly in the use and control of emotional or sensitive content (Nicholas, Sullivan, Mesbur *et al.* 2003).

Parenting websites and discussion forums have attracted attention from scholars working in gender studies. Some researchers argue that the forums reinforce traditional parenting stereotypes and unequal gender roles (Rashley 2005; Madge and O'Connor 2006; Brady and Guerin 2010; Ammari and Schoenebeck 2015) and tend to promote individual consumer-based solutions rather than addressing issues relating to the gendered division of parenting (Worthington 2005; Gambles 2010; Jensen 2013). However, other researchers have identified a growing feminist voice on some parenting website forums (Pedersen and Smithson 2013).

Blogs

Blogs written by parents are also a long-established digital medium available to other parents as a source of information or entertainment. Some of the most successful parenting blogs have changed in character and appearance in recent years. Blogs that may have originally begun as an archetypal 'mommy blog', such as Scary Mommy and KellyMom, have transformed into offerings that are similar to standard parenting websites. As with other parenting websites, many parenting blogs are now commercialised, with advertising and product recommendations provided on the sites as well as posts about personal parenting experiences. Some blogs are written by individuals while others are multi-blogging platforms. Both provide material that may depart from the confessional, autobiographical style of the archetypal mommy blog, such as travel reviews, news items and articles offering advice to parents, as well as including discussion boards.

Most research has focused on the genre of what is popularly known as 'mommy blogs': autobiographical journal-type blogs written by mothers describing their experiences of motherhood and related topics (Lopez 2009; Morrison 2010, 2011). Research about such blogs has focused on the American blogosphere, with the average mother blogger found to be white and middle-class with higher levels of education, income and technological ability compared with non-blogging mothers (Strif 2005; Thompson 2007; Powell 2010; Whitehead 2015). Studies on readers' use of parenting blogs show that they are mostly read by readers who are also bloggers and who form supportive communities (Ratliff 2009; Morrison 2010; Webb and Lee 2011; Zhang 2011; Chen 2013; Hunter 2015;), that both bloggers and readers employ deliberate social strategies to manage conflict (Morrison 2014) and that readers can also be empowered by the presentation of motherhood offered in the blogs (Morrison 2010; Chen 2013). Researchers have found that key to mommy blogging are community formation and the presentation of the self, allowing women to negotiate the tension between themselves and their role as mothers (Morrison 2010; Webb and Lee 2011; Gibson and Hanson 2013). Blogging may also help mothers maintain intimacy between themselves, their children and their partners (Zhang 2011) and improve new mothers' well-being and perceptions of social support (McDaniel, Coyne and Holmes 2012).

Here again, for those researchers who have adopted a gender studies perspective, assessments of mommy blogs have been conflicting. Mommy blogging is a contested practice that has been criticised and marginalised within the wider female blogosphere (Lopez 2009; Morrison 2010). Some researchers have argued that mommy blogs actively reject 'good' mothering ideologies as represented in the mainstream media, offering a more authentic picture of motherhood or

radical collective voice (Friedman and Calixte, 2009; Lopez 2009; Ratliff 2009; Powell 2010; Chen 2013). Others criticise the genre as reinforcing women's hegemonic role as nurturers, forcing them into 'digital domesticity' (Chen 2013) or for 'heroising' the physical evidence of pregnancy, such as stretch marks and scars, as evidence of good motherhood (Husbands 2008).

A small number of studies have addressed the topic of blogs written by fathers. Their findings echo research about fathers' use of online forums: particularly relating to the use of humour for online communication, the limited amount of fathering advice available and a rejection of stereotypes (Åsenhed et al 2014; Johansson and Hammerén 2014; Ammari and Schoenebeck 2015). These studies have particularly focused on young and first-time fathers' identity formation and search for support from others in similar situations. In direct contrast to work on mother blogging, much of this work has been undertaken outside the US, particularly Sweden (Åsenhed et al 2014; Johansson & Hammerén 2014) and Zhang's (2011) work on mothers and fathers blogging in China.

Email, mobile phones and digital messaging and call services

Parents frequently use digital media and devices to communicate with each other and with their children, especially during periods of physical separation. The ubiquity of mobile devices and more ready access to Wi-Fi means that parents can maintain such contact much more easily than in the past, and often at little cost if they use free services for email, messaging or audio or video calls. Smartphones facilitate both calls and messaging that can take place in real-time. Parents can use their phones to browse the web or conduct searches for information at any time and virtually any location. Mothers of young children, in particular, have begun to rely on smartphone functions to maintain connections at the same time as caring for their children: texting or accessing a news site or search engine online, for example, while feeding their infants in the middle of the night (Gibson and Hanson 2013; Lupton 2016).

A collection of studies based in countries as diverse as New Zealand, Australia, the UK, the Philippines, Ireland and Spain have looked at the ways in which mothers use digital media such as email, text messaging services, video call services such as Skype and FaceTime and mobile phones to keep in contact with their children when they are physically separated (Devitt and Roker 2009; Wajcman, Rose, Brown et al. 2010; Madianou and Miller 2012; Longhurst 2013, 2016; Vancea and Olivera 2013; Madianou 2016). These researchers observe that mothers can feel that they have regular contact with their children via these media, which allow for real-time communication, and in the case of video call services, the opportunity to see visual images of their children as they chat. This can be particularly important for mothers who have children living in different countries that they rarely see in person (Madianou and Miller 2012; Madianou 2016).

These researchers have pointed out that digital media is another way for women to perform 'good' motherhood by continuing to communicate with and show affection and concern for their children and thereby maintain familial bonds and intimacy. Using these media to connect with their children (including adult children who have left home), therefore, is often

a form of 'emotional labour' for women (Longhurst 2016). Fathers who are away from home due to divorce or work requirements, however, also often use digital media such as mobile phones, texting and Skype to connect with their children (Viry 2014; Ammari and Schoenebeck 2015). It could, therefore, be argued that notions of 'good' fatherhood also include men using digital media to connect with their children in such ways, although the literature on this is limited.

Social media

The emergence of social media since the early years of this century has provided newer ways of connecting with other parents and exchanging personal details of pregnancy and parenting experiences. Social media such as Facebook, YouTube, Pinterest, Twitter and Instagram offer parents the opportunity to upload their own material and respond to, curate, tag or share other people's content. As we noted earlier, many parenting websites now provide opportunities for users to connect with their content via their social media pages or profiles. As well as personal Facebook accounts, there are also numerous specific Facebook pages for parents. Content on Twitter and Instagram may be readily found via hashtags that point to their pregnancy or parenting focus. YouTube has become a central forum for content creation and sharing about pregnancy and parenting. Videos showing the stages of development of the foetus, labour and birth, infants' 'firsts' as they progress through the development phases and 'how to' portrayals of anything from putting a cot together to breastfeeding, both from healthcare or childcare experts and parents themselves, can be found in abundance on that platform.

Only a small number of studies have been published thus far on how parents use social media. A Pew Research Center survey (Duggan and Lehnhart 2015) of American parents reported that mothers slightly more than fathers used social media to give and receive support via their networks. Mothers were also more likely to agree that social media were a source of useful parenting information. Several studies across a number of countries in the global North have found that Facebook is used far more frequently than other social media platforms by both mothers and fathers (Gibson and Hanson 2013; Morris 2014; Ammari, Kumar, Lampe *et al.* 2015; Ammari and Schoenebeck 2015; Duggan and Lehnhart 2015; Lupton and Pedersen 2016). Facebook has also become an important way that mothers who are physically separated from their children can keep up with their activities and news (Madianou 2016).

Social research has demonstrated that mothers with infants and young children value the use of such social media as Facebook mothers' group pages to find opportunities to meet other mothers living nearby in person, alleviating feelings of isolation and boredom (Gibson and Hanson 2013; Morris 2014; Lupton and Pedersen 2016; Lupton 2016). This is also the case for parents of special-needs children, who often rely on Facebook to find specific support groups and information related to the needs of their children (Ammari, Schoenebeck and Morris 2014), as well as stay-at-home fathers, who use Facebook pages to connect with other men in their situation (Ammari and Schoenebeck 2016). Research on LBGT parents' use of social media (Ammari and Schoenebeck 2015; Blackwell, Hardy, Ammari *et al.* 2016) has found that

they use social media sites to alleviate feelings of marginalisation and stigmatisation by interacting with other parents in their position, engaging in advocacy or identifying allies.

Parents often use their personal Facebook accounts to announce and convey details about their pregnancy, inform friends about the birth of their baby and post updates and images of their children (Bartholomew, Schoppe-Sullivan, Glassman *et al.* 2012; Morris 2014; Ammari, Kumar, Lampe *et al.* 2015). One survey of 2,000 British parents' use of social media for sharing their young children's images conducted by an internet safety organisation estimated that the average parent would have posted almost 1,000 images to Facebook (and to a much lesser extent, Instagram) by the time their child reached five (Knowthenet 2015). An interview-based study of American parents found that while most used Facebook for sharing images, Instagram was also used by several participants (Ammari, Kumar, Lampe *et al.* 2015). One researcher has analysed the ways in which Russian women use Instagram to portray and celebrate their pregnant bodies (Tiidenberg 2015) while Leaver (2016) has discussed the use of this platform for posting foetal ultrasound images. A third study examined the use of transgressive breastfeeding selfies posted to Instagram as a mode of challenging received norms of idealised motherhood (Boon and Pentney 2015).

Apart from an analysis of amateur childbirth YouTube videos (Longhurst 2009) and medical researchers' appraisals of YouTube videos as a source of medical information (for example, Keelan, Pavri-Garcia, Tomlinson *et al.* 2007), very few scholarly articles have been published about what content is available for parents on YouTube and how parents use this platform. However, one study drawing on focus-group interviews with women living in Sydney found that YouTube was mentioned as an important source of information about preparing for childbirth and caring for infants (Lupton 2016).

Apps

Hundreds of apps have been designed for pregnant women and mothers (and, to a much lesser extent, their partners). For women who are trying to conceive, there is a multitude of ovulation and fertility tracking apps available. When conception is achieved, pregnancy apps encourage women to engage in practices such as tracking foetal growth, heart rate and movements and their biometrics, playing pregnancy-related games, shopping for baby products, photographing their baby bumps, and sharing photographs, ultrasound images and other details about foetuses (Thomas and Lupton 2015). Once the infant is born, another range of apps is directed at monitoring infant feeding, sleeping, growth and development and providing information about childcare. Some apps provide access to their own discussion groups while others offer access to general social media sites or parenting sites. Several apps now connect to wearable devices and 'smart' objects. Various biosensing tools are on the market to help women monitor their ovulation in preparation for conception, as are smartphone attachments that allow women to monitor foetal heart rate. Parents can also purchase digital baby monitors that provide livestream images of their infants to their mobile devices, as well as wearable devices or sensor-embedded clothing for their babies that measure infant biometrics such as their movements while sleeping, body temperature and heart rate.

Social researchers have begun to realise the growing importance of mobile app use in pregnancy and parenting. Market research demonstrates that pregnancy apps are more popular than fitness apps as demonstrated by downloads (Dolan 2013), with some of the most popular of these apps being downloaded in the hundreds, thousands or millions (Thomas and Lupton 2015). Several academic studies have demonstrated that many women find pregnancy and parenting apps to be useful sources of information and support. These apps are valued because they can be readily accessed on users' mobile phones and provide information in a convenient format (Lagan, Sinclair and George Kernohan 2010; Declercq, Sakala, Corry *et al.* 2013; Derbyshire and Dancey 2013; Hearn, Miller and Fletcher 2013; Rodger, Skuse, Wilmore *et al.* 2013; Johnson 2014; Kraschnewski, Chuang, Poole *et al.* 2014; Peyton, Poole, Reddy *et al.* 2014; O'Higgins, Murphy, Egan *et al.* 2015; Lupton and Pedersen 2016; Lupton 2016). Apps are used to find information about pregnancy and parenting, track children's sleeping and feeding habits and their development, share information about children and connect with friends and family via social networks (Frizzo-Barker and Chow-White 2012; Gibson and Hanson 2013; Lupton and Pedersen 2016; Lupton 2016). While some studies have revealed that women engage with apps to fill their knowledge gaps because current prenatal services do not meet their needs (Kraschnewski *et al.* 2014), others report that apps can be perceived as particularly important for disadvantaged women who may lack access to other educational resources (O'Higgins, Murphy, Egan *et al.* 2015).

Research from a gender studies perspective has identified the assumptions and discursive strategies embedded in the content of apps. It has been noted that pregnancy and parenting apps privilege the responsibilisation of pregnant women and mothers for monitoring their own and their children's bodies (Johnson 2014; Lupton and Thomas 2015; Thomas and Lupton 2015). Drawing on interviews with women around their app use, Frizzo-Barker and Chow-White (2012) argue that because apps allow for continual connection, they can both empower and constrain women's experiences. Women can use apps to connect efficiently with family members and other mothers, juggle domestic tasks, practice 'remote mothering' and monitor their child's safety and security. In so doing, however, mothers are conforming to expectations that they perform well both at home and at work and that they will always be online and available. Apps can, therefore, reproduce and intensify pressures on mothers and further serve to individualise their experiences, even as they promise to alleviate these pressures and promote social networks.

Only a handful of studies has addressed the content of apps designed for fathers. In conjunction with critical analyses of apps designed for women, this research recognises that apps serve to reproduce stereotypical, gendered and heteronormative assumptions about pregnancy and parenting. The vast majority of commercial pregnancy apps are clearly targeted at women only, containing pink colour schemes, stereotypically feminine imagery, and advice and alerts about 'my pregnancy' (Peyton, Poole, Reddy *et al.* 2014). As well as constructing what constitutes 'good fatherhood' – that is, urging men to take action to learn about elements of pregnancy/fatherhood and provide partners with knowledgeable and emotionally-sensitive support – apps portray fathers in ways that condescend to them and trivialise their role. Fathers are represented as bumbling, if well-meaning, requiring coaxing and the use of

humour to encourage them to take an interest in pregnancy and parenting (Johnson 2014; Thomas and Lupton 2015).

Data privacy and security issues

Parents are now constructing a digital profile of their children by uploading information about them to digital media – and often before the children are born. Parents also reveal many aspects of their lives via their engagement with digital media – from web searches and browsing habits to their experiences of pregnancy and parenting. Many parents actively desire features of apps and other software that allow them to input personal details of themselves and their children owing to the tailored convenience such personalisation allows. They also value the reassurance that digital surveillance capacities offer them (Hearn, Miller and Fletcher 2013; Peyton, Poole, Reddy *et al.* 2014; Lupton and Pedersen 2016; Lupton in press). However, these very personal details are not only valuable for those who use these media as personal digital data now attract value as part of the digital knowledge economy (Andrejevic 2014; van Dijck 2014). Governments, commercial bodies, workplaces and educational institutions, as well as cybercriminals, routinely access people's data for their own purposes. Personal data are now used to construct profiles of people that can have major implications for their life opportunities, such as their access to employment, travel, health and life insurance and credit (Polonetsky and Tene 2013; Crawford and Schultz 2014).

Information about people who are expecting a new member of the family or have recently become parents is particularly commercially valuable, as they are typically in the market for new goods and services (Dembosky 2013; Marwick 2014). Details uploaded to apps such as a pregnant woman's expected date of delivery are sought after by commercial entities (Dembosky 2013). It is estimated that online marketers pay far more for pregnant women's browsing data compared with other internet users (Vertesi 2014). These details have value in other ways as well. They can be used for illegal activities, such as using stolen data to make fraudulent health insurance claims. Medical and health data are frequently subject to data breaches (Huckvale, Prieto, Tilney *et al.* 2015) and incidents of hackers gaining access to private details about young children via digital baby monitors or digital toy manufacturer databases have been reported (Owens 2015; Peterson 2015).

Some research identifies that parents are beginning to consider these issues (Ammari, Kumar, Lampe *et al.* 2015; Ammari and Schoenebeck 2015; 2016). This is particularly the case for parents who already find themselves in positions where privacy of sensitive personal details are important to them – such as LBGT parents (Blackwell, Hardy, Ammari *et al.* 2016). However, the Pew Research Center survey of American parents found that few were concerned about content posted about their children by other family members or caregivers on social media (Duggan and Lehnhart 2015). A survey of Australian mothers similarly found a low level of concern about data privacy and security issues related to their personal data or those of their children (Lupton and Pedersen 2016). Some parents are cautious about sharing information about their children on sites such as Twitter (Morris 2014). However, many do not check the privacy settings of their Facebook accounts or think about the privacy issues related to this site, despite typically posting large amounts of material about their children there

(Morris 2014; Duggan and Lehnhart 2015). Here again, as with other aspects of parenting, taking responsibility for protecting children's privacy tends to be viewed as 'mothers' work' (Ammari, Kumar, Lampe *et al.* 2015).

Conclusion and directions for future research

Our review shows that digital media remain highly important sources of information, emotional support and advice for pregnancy and parenting. Over the past few generations in the global North, parenting has become individualised as traditional norms have dissolved and families increasingly live apart from each other. Children are represented as precious and vulnerable, subject to many risks and dangers from which their parents must work to protect them (Zelizer 1985; Beck and Beck-Gernsheim 1995; Lupton 2012b; 2012a). A high degree of responsibility is placed on parents (and especially mothers) constantly to seek out information and provide the best possible care for their children (Marx and Steeves 2010; Henwood, Shirani and Coltart 2012; Lupton 2012b; 2012a; Holloway and Pimlott-Wilson 2014). In this context, it is not surprising that women and men find using digital media to access other parents, advice and connection to the world outside of parenting – as a way of alleviating feelings of isolation, boredom, loneliness, anxiety or uncertainty about caring for and protecting children – very valuable.

There are notable lacunae in the research we have reviewed here. Despite evidence that social media sites are highly used by pregnant women and parents (particularly mothers), not only as sources of information and support but also for uploading details about their experiences to share with other users, very little social research has investigated such practices. What kind of content do parents choose to share or engage with when using social media? How do they make these decisions and what do they think the implications are of these decisions for themselves, their children and friends, family and others? What do they understand about how other actors and agencies are using their personal data? While some parents are beginning to use self-tracking apps and wearable technologies to monitor themselves or their children, hardly any research is available that provides details about these practices. Furthermore, the social and geographic diversity of digitally-engaged parents have not received enough attention. There has been far more of a focus on how mothers compared with fathers use digital media for pregnancy and parenting and the type of content and devices that are available to them. Greater attention has been paid to the digital media practices of parents who are white, heterosexual, cis-gendered, able-bodied and live in the global North compared with other social groups.

The tacit assumptions and gendered nature of digital media for concepts and performances of pregnancy and parenting also require more detailed investigation. As demonstrated in several studies we have reviewed, apps and other digital media reproduce stereotypical representations of women and men and about the ideals of 'good' parenting. Recent research has identified the incorporation of the use of digital media into dominant concepts of the idealised parent (and particularly, the 'good' mother). Using digital media to search information and conduct self-monitoring while pregnant and once infants are born, to share images and other information about them and monitor their growth and development, as well

as to maintain communication with children have all become ways of performing 'good' motherhood. Given the often very public nature of people's interactions with digital media, such as the material they upload to social media platforms, some elements of the performance of parenting have become more open to the view (and potential judgement) of others. The impact of this move towards public performances of parenthood and how parents are negotiating this issue is another area we identify for future research.

Finally, the increasingly blurred boundaries between the forms of digital media available to parents is worthy of much greater scholarly attention. Apps link to websites, smart objects link to apps, apps connect to social media platforms, which in turn connect to websites – and so on. A cross-platform and cross-media ecology of digital media for pregnancy and parenting has developed, in which these connections generate a complex network of material and social relationships. The constant connectivity afforded by mobile media contributes to what Madianou (2016) refers to as 'ambient co-presence', in which users are constantly aware of others who are not physically present by relating to them regularly via their digital networks. Future research will need to acknowledge this complexity and constant connectivity, and direct attention at how parents negotiate their use of these interconnected media and how they assess the value or credibility of the information and advice that they access on these media. It should also incorporate investigations of how parents negotiate the digital media they use with face-to-face interactions with friends, family members and healthcare professionals.

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