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“The appy for a happy pappy”: Expectant fatherhood and pregnancy apps

Abstract

Many mobile software applications (‘apps’) related to pregnancy have been developed for the global market, yet little research has explored how expectant or new fathers are represented in such technologies. Drawing on a critical discourse analysis of the descriptions of pregnancy apps available in two major online stores, we identify how these media artefacts represent a problematic version of performing fatherhood. On the one hand, notions of ‘intimate’ fatherhood are enacted by emphasising the importance of men acquiring knowledge about pregnancy/childbirth and providing emotional and informed support to their partner as she experiences pregnancy, childbirth, and new motherhood. However, many apps also condescend to expectant fathers and trivialise their role, assuming that they need entertainment, humour and encouragement to promote their involvement. We suggest that such meanings are reflected in wider social expectations, norms, and paradoxes in relation to the role of men in contemporary parenthood. Further research is required to explore how men engage with apps and how apps contribute to their understandings and practices of expectant and new fatherhood.

Keywords

Apps, fatherhood, masculinities, parenting, pregnancy, sociology

Word count

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Introduction

In recent years, sources of pregnancy and parenting support and advice have increasingly moved online. Parents across the globe with access to the internet are now offered a plethora of information across a range of digital media, including not only online forums but also newer technologies like social media platforms and apps (software applications) for mobile devices. Indeed, apps are one of the latest digital-media technologies to have entered the realm of pregnancy and parenting advice and support. Hundreds of apps have been designed for – and marketed towards – pregnant women, allowing them to engage in practices such as tracking foetal growth and their own biometrics, locating baby names, shopping for baby products, photographing baby-bumps, and sharing both photographs and experiences via social media. A far smaller number of pregnancy apps have also been produced specifically for fathers, although many pregnant apps directed at women include references to their male partners.

The portrayal of fatherhood in such apps is the focus of this article. We locate our critical discourse analysis of such apps within a growing but limited literature on men’s use of digital technologies related to pregnancy and fatherhood. We also draw on the larger literature around the social, cultural, and political dimensions of contemporary fatherhood. In what follows, after describing our methods and analytical strategy, we outline our findings on how fatherhood is represented in the pregnancy apps that we examined. Finally, we reflect on the implications of our analysis for future work on men as parents and partners.

Contemporary fatherhood and digital media

Research on fatherhood in countries in the global North suggests that men have now become more prominent figures in the parenting landscape. There has been a burgeoning recognition of fathers’

importance in their children's life and care, regardless of the family's social class, age, or ethnicity. This research demonstrates how contemporary idealised fatherhood involves expectations around the articulation of a nurturing parent and the expression of positive emotions toward children. In the context of economic, policy, and political shifts around fatherhood and more nuanced understandings of gender, masculinities, and power, the practices and discourses of paternal involvement are increasingly endorsed during pregnancy, birth, and the early weeks and months of a child's life. Through a language of caring and bonding – of establishing an emotional connection – men in the global North are now urged to be involved in pregnancy, support their partners, and provide loving care to their children (Lupton & Barclay, 1997; Milkie & Denny, 2014; Shirani, Henwood, & Coltart, 2012)¹. Dermott (2014) refers to this approach as 'intimate fatherhood', contending that this concept is gaining ever more political and public attention.

As Ammari et al and Schoenebeck (2015) argue, we are at a critical juncture for studying the ever-evolving role of fatherhood and how digital media contributes to dominant concepts and practices of fatherhood. Studies from the UK, Australia, and USA have found that men themselves may struggle with how to conform to their ideals of fatherhood in the context of changing views and expectations about what makes a 'good father' (Lupton & Barclay, 1997; Shirani et al., 2012; Williams, 2008), including during their partner's pregnancy. Recent UK and Nordic research has found that fathers report feeling socially invisible and alienated (Eriksson and Salzmänn-Erikson 2013; Salzmänn-Erikson and Eriksson 2013), positioned as 'bystanders' during pregnancy with their emotions and experiences being overlooked by partners and healthcare workers (Draper, 2003; Locock & Alexander, 2006), and prejudged as inept parents and as needing to accept the position of 'secondary' parent (Salzmänn-Erikson and Eriksson 2013). Drawing on interviews with UK fathers about their partners' pregnancy, Ives (2014: 1008) found that participants positioned themselves as 'separated, side-lined, or excluded, to varying degrees' during pregnancy. The men located themselves as partners or parents who assumed a distanced role. They felt surplus to requirements or interlopers in a private space, that is, as 'present, but not participating' (2014: 1009). This side-lining, however, was not always experienced as negative by the men in Ives' study. Instead, perceiving this distance as unavoidable, men drew on masculine ideals of 'the stoical protector' who guards and supports his partner and the foetus in order to account for this role.

Digital media provide a potential avenue for men to learn about fatherhood and express and share their experiences with each other. Many studies have shown pregnant women in the global North tend to be isolated from experienced family members and simultaneously expected to devote significant attention to avoiding risk in the interests of ensuring a healthy baby (Lupton, 2012). In this context, the opportunity to go online to seek information about pregnancy and discuss their experiences is valued (see reviews of this literature by Doty & Dworkin, 2014; Lupton, Pedersen, & Thomas, 2016). Far less attention has been directed towards fathers' use of digital media. Some studies conducted in the UK, Europe, USA, and Australia have found that some men use the internet to gather information on pregnancy and fathering and seek support to help practice intimate fatherhood (Eriksson & Salzmänn-Erikson, 2013; Fletcher & StGeorge, 2011; Johansson, Rubertsson, Rådestad, & Hildingsson, 2010; Niela-Vilén, Axelin, Salanterä, & Melender, 2014; Salzmänn-Erikson & Eriksson, 2013). Some men have also blogged about fatherhood or used social media platforms to share experiences (Ammari & Schoenebeck, 2015; Åsenhed, Kilstam, Alehagen, & Baggens, 2014; Duggan & Lehnhart, 2015). However, it has been observed that fathers are not as highly engaged as mothers in online activities (Duggan & Lehnhart, 2015) and that current digital media often fail to address and represent the experiences of fathers (Brady & Guerin, 2010). Other studies suggest that men feel alienated from online parenting resources as they are often directed primarily at mothers (Fletcher & StGeorge, 2011). Moreover, fathers can feel inhibited about expressing their feelings and experiences on social media sites, worrying both about privacy and opening themselves to disapproval from other users (Ammari & Schoenebeck, 2015).

Apps for mobile devices are a relatively recent entry into the panoply of digital media available to new and expectant parents, yet have quickly become popular with women. Previous researchers have noted that pregnancy and parenting apps are highly used by expectant and new mothers (Derbyshire & Dancey, 2013; Hearn, Miller, & Fletcher, 2013; Johnson, 2014; Kraschnewski et al., 2014; Lupton, 2016; Lupton &

Pedersen, 2016; Rodger et al., 2013). It is possible that apps could provide an important source of information and support for expectant fathers too. Apps, like other media texts, are sociocultural artefacts that convey information and draw on and reproduce dominant meanings, tacit assumptions, and practices (Lupton, 2014). Yet apart from some mention by Johnson (2014), no research on what apps offer expectant fathers and how such men are portrayed in these new media artefacts has been published. The digital portrayal of fatherhood in such apps, thus, is the focus of this article.

Methods

The apps that we examined relating to fatherhood were identified as part of our study looking at the ways in which pregnancy apps available in the two major app stores (Google Play and the Apple App Store) in June 2015 were presented to potential users via the app descriptions that developers publish in the stores. Elsewhere, we have presented the findings of our analysis of pregnancy apps that are directed at women (Thomas & Lupton, 2015) and those which seek to ludify pregnancy (that is, render it into a playful experience) for a range of users (Lupton & Thomas, 2015).

We identified apps related to pregnancy in each store by using key terms including ‘pregnancy’, ‘childbirth’, ‘conception’, ‘foetus/fetus’ and ‘baby’. After Authors 1 and 2 (who collected all of the data) agreed on the types of apps that we intended to include in our sample, Author 1 carried out preliminary searches. These were shared with Author 2 who conducted further searches to identify apps missed in earlier searches, thus ensuring that the process was rigorous and consistent. Both Author 1 and Author 2 discussed which apps should be included and there was full agreement about their inclusion. All three authors contributed to the analysis process (more on the analytical strategy below). As we wanted to explore the range of different portrayals of pregnancy for the full variety of purposes and audiences, we included all human pregnancy-related apps in our analysis. After eliminating apps from the dataset that were clearly not human pregnancy-related, we were left with 665 apps on Google Play and 1,141 on the Apple App Store for inclusion in our study. Many of these apps were shared across the app stores, but it is notable that Apple offered almost twice as many as did Google.

In our corpus, the number of pregnancy apps designed specifically for men was minute compared with those designed for women. The limited number of apps aimed at expectant/new fathers mirrors the wider lack of parenting material tailored for men (Lee et al. 2013). Thirteen apps for men provided general information and advice about expectant fatherhood: ‘Breaking Dad: 4 Expecting Dads’; ‘Dad2be’; ‘Dad2be Quiz’; ‘Dad2be Lite’; ‘iGyno for Men’; ‘mPregnancy’; ‘New Dad – Pregnancy for Dads’; ‘Pregnancy for Dads’; ‘Pregnancy For Dads – How To Take Care of Your Pregnant Wife’; ‘Pregnant Dad Lite’; ‘Who’s Your Daddy? The Pregnancy Guide for First Time Dads’; ‘The Dad’s Club’; ‘Guys Guide to the Delivery Room’. A further two apps were games (‘Mr. Dad on Pregnancy’; ‘Super Dad – Baby Care Game’), and another two were calendars for ovulation, menstrual, and fertility (‘Ovulation Calendar for Men – Conception & Pregnancy Calculator’; ‘Period.Me’).

After further searches for apps designed for fathers, we identified an additional nine apps that offer general parenting tips for men, including some discussion of pregnancy and childbirth: ‘In Dad’s Care: Baby Care Guide’; ‘Super Daddy in the First Year’; ‘Quick Tips for New Dads’; ‘Parenting Advice for Fathers’; ‘Inspiring Dads’; ‘Baby Helper for New Dads’; ‘30 Days to Become a Better Father’; ‘In Dad’s Care: 6-12 Months New Baby Care Guide’; ‘25 Must Know Secrets for New Dads’). Another five apps offered games referring to expectant fatherhood as part of general fatherhood apps: ‘Dad Jealous’; ‘Dad Bod’; ‘Dad Caring Newborn Baby Games’; ‘Super Dad Adventure’; ‘Ask Ya Dad’. Two apps provided information about fathering rights (‘Fathers Rights Apps’; ‘Fathers You Have Rights’), one app was devoted to exercise tips for fathers (‘Dad Bod – 7 Minute Fitness Plan’), and another to achieving a work-life balance (‘Busy Dad, Hi-Tech Dude’). As well as analysing these apps designed specifically for fathers, as part of our examination of all the pregnancy app descriptions included in our corpus (including those directed at women or both parents), we noted the ways in which men as prospective fathers were represented compared to expectant/new mothers.

We undertook a critical discourse analysis of these app descriptions. App descriptions include the title and logos of each app, screenshots from the app to illustrate their visual content, verbal overviews of their content and purpose, and, in some cases, information about app developers. Critical discourse analysis is a form of textual content analysis incorporating recognition of the broader context in which texts are produced and read (van Leeuwen, 2009). It allows us to concentrate on the social, cultural, and political dimensions of apps and what they reveal about tacit assumptions and power relations. Discourse is a form of social practice that is socially constitutive: it shapes actions, identities, and selves and reproduces dominant social relations (Fairclough, Mulderrig, & Wodak, 2011). In our analysis, we adopted the perspective that, like any other form of media, the content of apps and the ways in which they are described by their developers in advertising, such as the descriptions on app stores, are discursive texts (Lupton, 2014).

When analysing pregnancy apps that portrayed fatherhood in various ways, we carried out an analysis of the title of each app, the textual accounts of its content and use, and the images that were employed, such as the logo of the app and the screenshots used to illustrate its content and style. Our analysis was guided by a number of questions developed by drawing on the critical discourse analysis literature referred to earlier, and more specifically, Lupton's (2014) suggestions for critically analysing the textual features of apps. The questions included: What features of the app descriptions are employed by the developers to attract prospective users? What appeals do the apps make to both female and male users? What assumptions about gendered parenting and about pregnancy and reproduction are reproduced to convey meaning and represent the app as a desirable commodity? How are expectant fathers figured in relation to a pregnant partner? What assumptions and values relating to the concept of the 'good' father and supportive partner to a pregnant woman reproduced in the app descriptions? What are the absences in these representations?

The research team included one male and two female researchers with training in sociology, history, gender studies, and media and cultural studies between them. Each app was analysed individually by each author in response to the questions above. We then discussed our interpretations to generate our analysis. As each of us examined the corpus of texts several times, we iteratively identified recurring discourses and themes, and worked together via verbal interactions as well as generating written analysis and commenting on each other's insights to flesh out these themes and discourses and, in turn, explain their broader implications. We discuss our findings below, grouped under three major themes that we identified in app descriptions: informing and educating fathers; encouraging men to be attentive and supportive; and ludifying fatherhood. As we note, gendered stereotypes and assumptions about the role of fathers compared with mothers permeate all three themes.

Findings

Informing and educating fathers

Most of the apps descriptions that we examined sought to present apps as pedagogical agents, providing essential information and advice for men about how they should behave as partners to pregnant women and as new fathers. Men are urged to engage in such activities as identifying pregnancy and childbirth items to purchase, take Lamaze and parenting classes, choose baby names, and seek evidence and data on maternal health (e.g. around diet), labour/childbirth (and subsequent pain relief methods), the postnatal period, first aid, and taking care of newborn children. Such features are frequently framed by some apps, like 'Dad2be', as offering 'advice and opinions from a well-meaning friend'. Although apps for expectant mothers and fathers represent pregnancy and new parenthood as requiring the amassing and mastery of information, there was a distinct gendered difference in relation to the types of information offered to expectant fathers compared to mothers. In discussions of pregnancy, whilst women were assumed (and, indeed, expected) to be fully invested in the pregnancy and development of their foetuses in apps directed at them (Thomas & Lupton, 2015), expectant fathers were typically represented as secondary and less committed, requiring

encouragement to take an interest in the pregnancy. Since the ‘focus is on the woman’, men are assumed to be ‘uncertain of their role’ (‘Pregnancy for Dads – How to Take Care of Your Pregnant Wife’).

Our analysis of pregnancy apps directed at women found that a key element was their role as pedagogical agents, providing detailed information for women and encouraging them to learn as much as they could about their pregnancy and foetal development (Thomas & Lupton, 2015). By contrast, while apps designed for fathers-to-be also sought to offer information, this was advertised as being short and informative. In ‘Quick Tips for New Dads’, for instance, fathers are offered ‘short, punchy tips’ to browse ‘whether you’re sitting on the train, in front of the TV, or on the toilet’. Pregnancy apps for men often represent them as overly taxed by too much information during a pregnancy, encouraging them – as such – to use apps for accessing manageable pieces of information. In the app ‘mPregnancy’, men are said to find pregnancy books ‘too long and boring’. This particular app, indeed, encourages pregnant women to download the app for their partners if they are ‘having a hard time making [their male partner] read pregnancy books’.

Men are also assumed to need information that women do not. The ‘mPregnancy’ app for fathers, for example, offers men advice on how to prepare a nursery and build furniture for the new arrival as well as how best to organise their finances ready for their family’s expansion. We found few apps explicitly designed for women that highlighted these issues. Apps that provide information for men about early parenthood also tend to assume that men know very little about caring for infants and position them as the much less interested and expert parent compared with female partners. For example, the app description for ‘In Dad’s Care: Baby Care Guide’ tells users that this ‘easy-to-read’ guide will help fathers – alone with the baby at home – ‘keep out of trouble’ on account of the information provided and offer women ‘freedom’ by ‘handing Dad the baby’ to allow her to ‘go out’. Some apps present an image of the father who is ‘hurry-scurry when nursing their babies’, becomes ‘annoyed’ by crying, and is in need of both help and intervention through apps which ‘answer all of [his] problems’ (‘Super Daddy in the First Year’).

A host of apps designed for pregnant women and new mothers additionally offer ‘guides’ for men (‘Beginnings: Pregnancy, Birth and Beyond’; ‘Pregnancy by Bounty’) and can be personalised for men (‘Pregnancy+’). Even where this personalisation is not possible, apps concurrently enact this role of the ideal father as knowledgeable about pregnancy and childbirth. Apps encourage fathers-to-be to help during childbirth (‘Pregnancy’; ‘Hypnobirthing Hypnosis by Mindifi’), track biometric data such as due date (‘Glow Nurture’; ‘Pregnancy Calculator’) and menstrual cycles to detect fertile days (‘Happy Stork’), and provide ‘emotional support, plan trips and romantic evenings at the perfect time without having to ask’ (‘Cycles – Period Tracker’). What is more, expectant fathers are encouraged to read magazines to ‘navigate the uncharted territory of the first OB/GYN visit, maternity ward, and first Father’s Day’ (‘Pregnancy Magazine’), and share information and biometric data – such as foetal heartbeats – through social media to allow them to ‘bond’ with the baby (‘My Baby’s Beat’) and ‘participate in the process of the baby’s development from the early stages of the pregnancy’ (‘Fetal Doppler Unborn Heart’). Thus, apps act as a doorway through which men are encouraged to use other media in their performance of knowledgeable expectant fatherhood.

In apps for pregnant women, mothers-to-be are depicted as requiring and wanting detailed information about their own bodies and the development of the foetus. Specifically, they are invited to monitor their bodies closely as part of ensuring that their baby is born healthy (Lupton & Thomas, 2015; Thomas & Lupton, 2015). Likewise, many apps directed at expectant fathers encourage men to monitor a partner’s body or remind them to take up health imperatives. In the app ‘New Dad – Pregnancy for Dads’ and many others, users can ‘track’ a partner’s pregnancy by obtaining weekly updates of the baby’s growth as well as knowledge about what’s ‘going on inside your partner’s body’. The app ‘iGyno for Men’ presses users to ‘share the same events and moods’ with their partner, using the app ‘iGyno’ (an app produced by the same company but designed for women), and ‘reinforce the bond and harmony in their relationship’. The app claims that this will help partners become ‘more and more one and the same’ and help men manage their ‘unique emotions’ and ‘sexual activity in the best possible way’. Like the ‘Ovulation Calendar for Men’,

'iGyno for Men' includes features that record menstrual cycles, ovulation, and fertile days, thus enrolling men in a web of surveillance of women's bodies via digital-monitoring technologies.

Encouraging men to be attentive and supportive

Another typical feature of app descriptions was encouraging men to be attentive to their partners, namely, taking care to both support them emotionally and bolster their confidence. Pregnant women were portrayed in these apps as emotionally labile and lacking confidence about their physical attractiveness owing to their transformed body shape. Contributing to the happiness of their partners was presented as a major goal for men. 'New Dad – Pregnancy for Dads' incites fathers to 'surprise' partners with 'titbits of information about the development of your baby, while making sure that she is comfortable and happy'. This includes a 'keep your wife happy' widget with 'tips submitted to us by husbands all over the world'. Some tips, as shown in one of the advertising screenshots, urge the user to 'tell your wife she's beautiful' and 'take a romantic walk together'. Compliment notifications are a common feature of apps for men, with fathers-to-be encouraged to praise their partner throughout the pregnancy.

The importance of men providing emotional support to their partners, and to be more emotionally expressive towards them, is also extended to childbirth. 'Pregnancy for Dads' is an app designed specifically for men to 'help their wife in the delivery room'. Here, the 'good' father 'sacrifices', 'supports' and 'feels', despite these emotions being 'neglected and least understood'. The app incites expectant fathers to overcome their 'introverted' attribute (relating to conveying emotions) by 'playing their role right from the moment his partner is diagnosed to be pregnant'. Since 'some men just do not know what to do [...] or are not armed with some knowledge' about childbirth, this app is framed as confronting and resolving this deficiency.

The notion that men's emotional attachment to their foetus is lacking is reflected in the availability of apps – such as 'Fetal Doppler Unborn Heart' – to detect foetal heart rate. This app locates men as reliant on technological innovations to 'bond' with their child and 'participate in the process of the baby's development from the early stages of the pregnancy'. Similarly, 'In Dad's Care: Baby Care Guide' claims that in order for fathers to bond with their children, they 'have to work at it a bit' since bonding 'is faster for the mum'. Here again, a significant difference in the representation of men compared with women is evident. There was little suggested in apps directed at women that they would need great encouragement to bond with their foetuses, with this being simply assumed (Thomas & Lupton, 2015). In contrast, with regards to fathers, the idealised attributes of connectedness and desire to support partners seem to require prompts and pointers.

Ludifying expectant fatherhood

Elsewhere, we have commented on the ways in which one genre of pregnancy apps directed at women and young girls ludifies expectant motherhood, representing it as an opportunity to engage in playful and aesthetic practices (Lupton & Thomas, 2015; Thomas & Lupton, 2015). This feature of apps was also evident in apps that were designed for men, particularly aimed at encouraging men to acquire greater knowledge of, and interest in, their partners' pregnancy. For example, 'Mr. Dad on Pregnancy' – a 'social, "snackable" game aimed at knowledge discovery and learning' – is advertised as 'deliver[ing] the information you need to know in a fun, new way'. Presenting facts in a trivia fashion, the app offers 'important tips and facts to help you through the mysterious experience of pregnancy'. Users earn points by answering questions correctly and beating the timer; scores are recorded and multiple games against different players are possible at one time. As well as increasing the 'knowledge' of, and ludifying, pregnancy for fathers-to-be, this app encourages the notion of fatherhood as a competitive endeavour. It asks users to challenge, or rather 'go head-to-head' against, fellow fathers-to-be or the device itself. It also encourages men to play in order to acquire 'bragging rights' over a partner and 'impress' them, thus proving that 'you care about the pregnancy by beating her in a game'. Finally, the app markets itself as offering fathers 'the tools, resources, and practical strategies to be the fathers they want to be – and their family needs them to be'.

Many of the apps advertised for expectant fathers, unlike those marketed at their pregnant partners, contain humour. For instance, the likes of ‘Pregnancy Dad Lite’, ‘In Dad’s Care: Baby Care Guide’, and ‘Quick Tips for New Dads’ describe themselves as ‘survival guides’. Elements of humour are located in a vast array of other apps through images; for example, the logo for ‘Breaking Dad: 4 Expecting Dads’ features a cartoon male looking puzzled. The app ‘Pregnancy for Dads – How to Take Care of Your Pregnant Wife’ includes screenshots of quotes such as ‘Be nice to me, my wife is pregnant’ and ‘Pregnancy is the happiest reason ever for feeling like crap’. ‘Who’s Your Daddy? The Pregnancy Guide for First Time Dads’ claims it uses ‘humour and language you won’t need a medical dictionary to decipher’. This app, described on their official website as ‘the app for a happy pappy’ and advertised with a logo of a moustache above a pacifier, guides fathers-to-be through the ‘daunting nine months of pregnancy’ with 290 daily tips (e.g. ‘Mood swings? What mood swings? There are no mood swings. Remember that’, ‘That hot girl over there... Don’t even think of looking at her if you’re with your partner’), 42 weekly updates (for example, week 0-7 describes the ‘weight of expectation’ [referring to foetal weight] as 0 grams and foetal size as 0cms or ‘the size of a unicorn’), a timeline of key events, and ‘a veritable smorgasbord of tools’ (e.g. hospital bag, to-do list, baby names, and ‘a contraction counter you will never use’). Furthermore, the app is described as providing fathers with advice on ‘what to do and what not to do’ and ‘nine months’ peace of mind for the price of a small beer’.

In this app, among others, the ‘good’ father is portrayed as taking an active involvement in their partner’s health and wellbeing and in foetal development; he tracks maternal health (e.g. providing nutritional advice for partners using the app FAQ), collects facts, takes heed of tips, consults images of how the baby develops in utero, ‘makes the pregnancy a pleasant experience’ for their partner, and tracks gestational age, trimester, and the number of remaining days until childbirth. However, using humour – such as a due date calculator containing the phrase ‘You have XX weeks remaining as a free man’, depending on the week of gestation – arguably contributes to the portrayal of fathers here as less than enthusiastic about the fathering experiences awaiting them. Indeed, much of this information appears to be overly-simplistic and patronising, despite many such apps being developed by men themselves, that is, ‘by dads for dads’ (‘In Dad’s Care: Baby Care Guide’). For example, in the app ‘mPregnancy’, embryo and foetal size at different stages of gestation is shown ‘in terms that men understand’ and/or as ‘an object well known to men’, such as comparing the unborn body to a football or the cap on a beer bottle. In ‘Dad2be Quiz’, one screenshot includes a picture of a pacifier and asks men to identify the object, with possible answers being a pacifier/‘dummy’, an ear plug, and a golf tee.

Similarly, ‘Super Daddy in the First Year’ advertises itself as ‘both serious and funny’ by providing ‘humorous language and warm and professional tips’. ‘The Dads Club’ app description quips that ‘It’s ironic – We don’t worry about having a baby; we worry about making one too early!’ The ‘Quick Tips for New Dads’ app also contains a section entitled ‘Poo’ – featuring a man pulling an amusing yet disgusted face while holding a brown-stained nappy – and explains why excrement may be a greenish colour, the product of which (meconium) ‘may be the most adhesive substance known to man’. Another app for new fathers, ‘Quick Tips for New Dads’, also offers information that is ‘no nonsense’ and contains ‘no waffle’ (‘just quick, practical advice to be a great dad and earn brownie points’). As with many such apps, this app is presented as being developed by fathers, that is, in this particular case, men who have experienced ‘the screaming, eating, pooing mess that comes crashing into your life’ and have ‘already been there and got the sick-stained t-shirt!’. This type of sardonic description of new infants, the chaos that they may bring into a household, and their lack of bodily integrity are rarely found in apps directed at women.

The use of humour, seemingly designed to make pregnancy information more palatable for men, can also be used to try to neutralise difficult experiences. For example, in ‘The Dad’s Club’, an app primarily for men trying to improve fertility chances, men are told that sperm should be kept ‘healthy and in tip-top gold medal swimming condition’ to ‘ensure you have a turkey in the oven’. Men are provided with ‘schooling on how this whole process of knocking up your lady works’ and information such as ‘Did you know that sperm lives inside a vagina for 5-7 days? Yep, your army of swimmers hang out just waiting for an egg to show up at the party!’

Discussion

In our analysis of pregnancy app descriptions, we have shown how ‘good’ fatherhood is enacted via such technologies. Like women who are preparing for birth, the ideal expectant father is represented as requiring information and education in how to support and help his partner and care for an infant. Both parents are positioned as deficient in their knowledge of pregnancy and parenting, requiring apps to act as pedagogical agents. This focus on information reflects notions of ‘good’ parenthood for both parents (but especially women) that assume not only that they want education about pregnancy and parenthood, but that they are willing to (and should) actively access such information and use it in their everyday lives. Pregnancy and parenthood, thus, becomes a reflexive and risk-avoiding pursuit, requiring formal modes of knowledge and the acquisition of information to enact it successfully. These discourses of ideal parenthood rest on middle-class and neoliberal assumptions about the individual’s capacity and responsibility for educating themselves and acting upon information, positioning parenthood as both autonomous and privatised (Holloway & Pimlott-Wilson, 2014; Lupton, 2008, 2012; Shirani et al., 2012).

Not only are fathers-to-be in these apps urged to take action to learn about elements of pregnancy, childbirth, and new fatherhood, but they are expected to provide pregnant partners with knowledgeable and emotionally-sensitive support. These ideas are reproduced as part of a performance of a family-oriented masculinity in which fathers share childcare activities. The apps for early parenthood – in conjunction with pregnancy apps for men – emphasise that men should support and care for their partners as well as their children. They are, thus, located in contemporary representations of intimate fatherhood, corresponding with overt political and policy commitments – together with cultural and discursive shifts – in practices and assumptions concerning fatherhood that we outlined earlier.

Our analysis, however, concurrently demonstrates strong ambiguities and conflicts in portrayals of expectant fatherhood in apps. Whilst the emotionally-sensitive, involved, and caring father is championed and a paternal reflexivity is promoted, there are many portrayals of fathers that condescend to them and trivialise their role, repeatedly depicting fatherhood as ‘keeping up appearances’ (Johnson, 2014) rather than involving men actually participating as an equal future parent. The ‘emotionalisation of contemporary fatherhood’ (Johansson and Hammarén, 2014: 375) is diluted, and occasionally openly contradicted, by the depiction of men in some apps as emotionally closed and incapable of expressing feelings. The discourse of these app descriptions is that men need to *work at* bonding with their born or unborn child, they require supervision once a child is born, and they need to learn how to be a suitable father and partner.

The apps we examined suggest that men can mainly become involved in pregnancy as a supportive partner by engaging with technology. It is typically contended in the apps that men – unlike their pregnant partners – cannot possess embodied knowledge and, so, must use technology to address this deficit. This finding correlates with Ammari and Schoenebeck’s (2015) work on parental use of social media. They suggest that while fathers use social media to ‘learn how to be a good father’, mothers do not frame their motivations in the same way. There are also resonances here with the findings of Draper’s (2003) research on how ultrasound scans become important for men’s identification as fathers. Since men have no direct embodied knowledge of pregnancy, technologies like ultrasound, for Draper, can signal the beginning of a pregnancy’s reality; men, in turn, **are subsequently configured** as both an appropriate and supportive partner. Whether this framing is problematic or incongruous to contemporary parenthood requires further attention.

Importantly, as well as rendering fatherhood a learned practice, apps assume a commonality among fathers. That is, they rely on an overly naïve and monolithic category of ‘fathers’ or ‘fatherhood’, presuming this to be a singular group that is universal across national and cultural practices. These apps, then, appeal to a particular *type* of father - namely, the young, middle-class heterosexual father who is willing and able to seek to achieve the ideals portrayed in the apps, such as seeking to learn as much as they can about pregnancy and parenting. In her study around the classed aspects of ‘involved’ fatherhood, Gillies (2009) points to how policy-sanctioned models of fatherhood are grounded in middle-class perspectives. They promote a visible and public form of fathering, ‘overlooking or downplaying the crucial hands-on practical

care that may be provided by many working-class fathers on a daily basis' (2009: 50). Similarly, Hammond-Rashley (2005) contends that parenting websites are primarily geared toward a well-educated, white, middle-class audience, whilst Johansson and Hammarén (2014) point out that young Swedish men writing blogs about fatherhood are also typically within this narrow demographic (thereby excluding young working-class fathers who may not have the capital to perform such roles).

Likewise, in pregnancy apps for men, the notion of an involved and caring father is influenced by contemporary ideals deriving from figurations of middle-class responsibilised fatherhood. By presupposing an audience of young, middle-class users in a heterosexual relationship and who are the biological parent of a child, apps enact tacit assumptions of fathers and, particularly, of 'good' fatherhood. As such, apps become grounded in heteronormative assumptions masking any diversity; step-fathers, gay couples, adoptive fathers, surrogate pregnancy, and single fathers are not acknowledged or addressed. Our analysis of pregnancy apps designed for women found similar appeals to well-educated white women in heterosexual partnered relationships (Thomas & Lupton, 2015) This exists in tension with recent research that has produced nuanced accounts of varying experiences among different groups of fathers (Dermott and Miller 2015; Gillies 2009; Johansson and Hammarén 2014).

In our analysis, we also identified how discourses of fatherhood in apps are still suffused with, and reinforce, heteronormative gender expectations and stereotypes. In these apps, pregnant women are portrayed as possessing 'natural authority over pregnancy and childrearing decisions' (Ives, 2014: 1013). Throughout many pregnancy apps, directed both at men and women and whether using humour or not, the father's role is trivialised and marginalised. These apps reproduce the notion that men and women negotiate parenting arrangements in a context in which mothers are still considered more important to their child's welfare than the father and 'instinctively' hold a greater capacity for nurturance. As such, fathers are positioned as requiring greater help than mothers in establishing a connection with their child (particularly during pregnancy) and in nurturing their child once born. While genuine attempts are made in many apps to provide accessible information, the strategies employed usually rely on gendered archetypes that depict fathers as requiring motivation to be interested in pregnancy and fatherhood, while mothers are represented as 'natural' and 'expert' parents. The father is portrayed, then, as a vital but not equal partner. Men are viewed as secondary and detached parents compared to women, who are represented in apps as largely responsible for parenting and, in terms of childcare, are innately superior to fathers who should 'make a good stab at it, but not worry too much about the details' (Hammond-Rashley 2005: 69).

Hammond-Rashley's (2005) research on the website BabyCenter shows how this website, though appearing to promote broad-minded and progressive parenting ideologies by emphasising equal parenting between women and men, actually reproduces traditional gendered and problematic parenting roles. For instance, fathers on BabyCenter could access a 'Dad's Cheat Sheet for Childbirth Class' which will 'spare' them 'some messy surprises' by being more aware than other expectant fathers, who only become 'interested in their babies' around childbirth. Similarly, Sunderland's (2009) analysis of parenting magazines recognises how discourses concerning the importance of fathers in their children's lives, and in supporting their partners, are undermined by portrayals of men that marginalise and trivialise their parental role. As our analysis of pregnancy apps demonstrates, these media reproduce similar representations of parents-to-be. Although such discourses in apps may be 'small, simple moments of rhetorical excess' (Hammond-Rashley, 2005: 60), they fix information and recommendations that a male or female reader is likely to find and can, arguably, reinforce outdated ideas around fatherhood.

The inept, foolish, and reluctant father is a stock character of product marketing² and wider popular media (Lupton & Barclay, 1997; Scharrer, 2001). The apps we examined often portrayed fathers using a similar stereotype. The use of such unsophisticated humour in apps may be attempts by developers – who mostly self-identify as men and fathers – to reveal themselves as 'human rather than exemplary fathers, in a playful, non-self-deprecating manner' (Fletcher and StGeorge, 2011: 1108). Previous research suggests that men often use humour in interactions with other fathers online. While Ammari and Schoenebeck (2015) identify how fathers viewed humour as an appropriate way of communicating online (and for not taking themselves too seriously), Fletcher and StGeorge (2011) found that fathers in an online chatroom use humour to highlight a

gap between real-life parenting and idealised practices, and ease tensions between caring responsibly for a child and the inevitable conflicts and mistakes that occur for new parents. Eriksson and Salzmänn-Erikson (2013) also demonstrates how men employed humour to confirm experiences with other fathers that nurtured their caring skills and allowed them to incorporate care into a repertoire of ‘masculine’ activities.

It is possible to argue that the strategy of humour provides a forum for subtly rather than overtly challenging normative assumptions about fatherhood. For instance, Ammari et al. (2017) suggest that tasks traditionally classified as feminine and ‘women’s work’ – including home improvements, arts and crafts, and cooking – are reshaped by fathers, online and offline, as do-it-yourself (DIY) practices which craft a particular subject position that does not threaten normative masculine narratives. Amidst shifting notions of gender in the home, these men did not seek to disrupt conventional gender norms but, rather, deployed DIY values and practices to legitimise their work and skills, challenge normalised perceptions of fatherhood, and construct a domestic masculinity. It may be argued that similar strategies are portrayed in the apps we examined. Rather than seeking to challenge normative masculinity, and thereby lose potential consumers, they attempt to work with and build on these norms in their role as pedagogical agents. Nonetheless, we view it as problematic that the apps we examined mostly portrayed fathers as clumsy, unwise, and uninterested. While the brand of humour used in the apps attempts to render them more appealing to male users, it also tends to conform to, and reproduce, social norms and expectations that describe or discuss fathers in debilitating or dismissive ways, that is, as the ‘baby entertainer, bumbling assistant and line manager’ (Sunderland, 2000: 249).

Conclusion

In conjunction with other media portrayals, apps may have enduring effects for educating people about gender, parenthood, and identity. Apps present an important means through which men can gather information on pregnancy and parenting and, possibly, feel more involved in the process. Our research suggests, however, that the types of discourses and representations of men as fathers that current apps enact are problematic. Users are presented with an image of modern fathers who are supportive and involved, but who simultaneously embody the position of inept and secondary figures, thus following culturally and historically specific ‘scripts’ that portray fathers as floundering, feckless, and flawed. We know little, as yet, about how men are using these apps (or not). Further research needs to address what men make of the pregnancy and parenting apps offered to them, what types of digital media they find most helpful, and how these media are used as part of a system of support, advice, and information – digital and non-digital – as they navigate their way through both pregnancy and fatherhood.

Notes

1. This is not to suggest that men have never felt strong paternal feelings. Rather, it appears to be more culturally acceptable for men to openly express emotional literacy (Dermott and Miller, 2015).
2. In 2012, a Huggies advert advertised its diapers and wipes by ‘[putting] them to the toughest test imaginable: dads, alone with their babies, in one house, for five days, while we gave moms some well-deserved time off’. The advert was greeted with outrage by many people, resulting in the advert being pulled.

References

- Ammari, T., & Schoenebeck, S. (2015). Understanding and supporting fathers and fatherhood on social media sites *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 1905-1914): ACM.
- Ammari, T., Schoenebeck, S., & Lindtner, S. (2017). The crafting of DIY fatherhood. Proceedings of the 20th ACM conference on computer-supported cooperative work and social computing (pp. 1363-1375). Portland, OR, February 25- March 1. ACM.
- Åsenhed, L., Kilstam, J., Alehagen, S., & Baggens, C. (2014). Becoming a father is an emotional roller coaster – an analysis of first-time fathers' blogs. *Journal of Clinical Nursing*, 23(9-10), 1309-1317. doi: 10.1111/jocn.12355
- Brady, E., & Guerin, S. (2010). "Not the romantic, all happy, coochy coo experience": a qualitative analysis of interactions on an Irish parenting web site. *Family Relations*, 59(1), 14-27
- Derbyshire, E., & Dancey, D. (2013). Smartphone medical applications for women's health: what is the evidence-base and feedback? *International Journal of Telemedicine and Applications*,
- Dermott, E. & Miller, T. (2015). More than the sum of its parts? Contemporary fatherhood policy, practice and discourse. *Families, Relationships and Societies*, 4, 183-195.
- Dermott, E. (2014). *Intimate Fatherhood: A Sociological Analysis*. London: Routledge.
- Doty, J. L., & Dworkin, J. (2014). Online social support for parents: a critical review. *Marriage & Family Review*, 50(2), 174-198. doi: 10.1080/01494929.2013.834027
- Draper, J. (2003). Men's passage to fatherhood: an analysis of the contemporary relevance of transition theory. *Nursing Inquiry*, 10(1), 66-78. doi: 10.1046/j.1440-1800.2003.00157.x
- Duggan, M., & Lehnhart, A. (2015). Parents and Social Media. *Pew Research Center*,
- Eriksson, H., & Salzmänn-Erikson, M. (2013). Supporting a caring fatherhood in cyberspace – an analysis of communication about caring within an online forum for fathers. *Scandinavian Journal of Caring Sciences*, 27(1), 63-69. doi: 10.1111/j.1471-6712.2012.01001.x
- Fairclough, N., Mulderrig, J., & Wodak, R. (2011). Critical discourse analysis. In T. van Dijk (Ed.), *Discourse Studies: A Multidisciplinary Introduction* (pp. 357-378): Sage London, UK.
- Fletcher, R., & StGeorge, J. (2011). Heading into fatherhood—nervously: Support for fathering from online dads. *Qualitative health research*, 21(8), 1101-1114
- Gillies, V. (2009). Understandings and experiences of involved fatherhood in the United Kingdom: Exploring classed dimensions. *The ANNALS of the American Academy of Political and Social Science*, 624, 49-60.
- Hammond-Rashley, L. (2005). "Work it out with your wife": gendered expectations and parenting rhetoric online. *NWSA Journal*, 17(1), 58-92
- Hearn, L., Miller, M., & Fletcher, A. (2013). Online healthy lifestyle support in the perinatal period: what do women want and do they use it? *Australian Journal of Primary Health*, 19(4), 313-318. doi: <http://dx.doi.org/10.1071/PY13039>
- Holloway, S. L., & Pimlott-Wilson, H. (2014). "Any advice is welcome isn't it?": Neoliberal parenting education, local Mothering cultures, and social class. *Environment and Planning A*, 46(1), 94-111
- Ives, J. (2014). Men, maternity and moral residue: Negotiating the moral demands of the transition to first-time fatherhood. *Sociology of Health and Illness*, 36, 1003-1019.
- Johansson, T., & Hammarén, N. (2014). 'Imagine, just 16 years old and already a dad!' The construction of young fatherhood on the Internet. *International Journal of Adolescence and Youth*, 19, 366-381.
- Johansson, M., Rubertsson, C., Rådestad, I., & Hildingsson, I. (2010). The Internet: one important source for pregnancy and childbirth information among prospective fathers. *Journal of Men's Health*, 7(3), 249-258. doi: <http://dx.doi.org/10.1016/j.jomh.2010.04.004>
- Johnson, S. (2014). "Maternal devices", social media and the self-management of pregnancy, mothering and child health. *Societies*, 4(2), 330-350

- Kraschnewski, L. J., Chuang, H. C., Poole, S. E., Peyton, T., Blubaugh, I., Pauli, J., . . . Reddy, M. (2014). Paging "Dr. Google": does technology fill the gap created by the prenatal care visit structure? Qualitative focus group study with pregnant women. *Journal of Medical Internet Research*, *16*(6), e147. doi:10.2196/jmir.3385
- Lee, S. J., Neugut, T. B., Rosenblum, K. L., Tolman, R. M., Travis, W. J. & Walker, M. H. (2013). Sources of parenting support in early fatherhood: Perspectives of United States Air Force members. *Children and Youth Services Review*, *35*, 908-915.
- Locock, L., & Alexander, J. (2006). 'Just a bystander'? Men's place in the process of fetal screening and diagnosis. *Social Science & Medicine*, *62*(6), 1349-1359
- Lupton, D. (2008). 'You feel so responsible': Australian mothers' concepts and experiences related to promoting the health and development of their young children. In H. Zoller & M. Dutta (Eds.), *Emerging Perspectives in Health Communication* (pp. 113-128). New York: Routledge.
- Lupton, D. (2012). 'Precious cargo': risk and reproductive citizenship. *Critical Public Health*, *22*(3), 329-340
- Lupton, D. (2014). Apps as artefacts: towards a critical perspective on mobile health and medical apps. *Societies*, *4*(4), 606-622
- Lupton, D. (2016). The use and value of digital media for information about pregnancy and early motherhood: a focus group study. *BMC Pregnancy and Childbirth*, *16*(1), 171
- Lupton, D., & Barclay, L. (1997). *Constructing Fatherhood: Discourses and Experiences*. London: Sage.
- Lupton, D., & Pedersen, S. (2016). An Australian survey of women's use of pregnancy and parenting apps. *Women and Birth*, online first. doi: <http://dx.doi.org/10.1016/j.wombi.2016.01.008>
- Lupton, D., Pedersen, S., & Thomas, G. M. (2016). Parenting and digital media: from the early days of the web to contemporary digital society. *Sociology Compass*, submitted
- Lupton, D., & Thomas, G. M. (2015). Playing pregnancy: the ludification and gamification of expectant motherhood in smartphone apps. *M/C Journal*, *18*(5),
- Milkie, M., & Denny, K. (2014). Changes in the cultural model of father involvement: descriptions of benefits to fathers, children, and mothers in *Parents' Magazine*, 1926-2006. *Journal of Family Issues*, *35*(2), 223-253
- Niela-Vilén, H., Axelin, A., Salanterä, S., & Melender, H.-L. (2014). Internet-based peer support for parents: A systematic integrative review. *International journal of nursing studies*, *51*(11), 1524-1537
- Rodger, D., Skuse, A., Wilmore, M., Humphreys, S., Dalton, J., Flabouris, M., & Clifton, V. L. (2013). Pregnant women's use of information and communications technologies to access pregnancy-related health information in South Australia. *Australian Journal of Primary Health*, *19*(4), 308-312. doi: <http://dx.doi.org/10.1071/PY13029>
- Salzmann-Erikson, M., & Eriksson, H. (2013). Fathers sharing about early parental support in health-care - virtual discussions on an Internet forum. *Health & Social Care in the Community*, *21*(4), 381-390. doi: 10.1111/hsc.12028
- Scharrer, E. (2001). From wise to foolish: The portrayal of the sitcom father, 1950s-1990s. *Journal of Broadcasting & Electronic Media*, *45*(1), 23-40
- Shirani, F., Henwood, K., & Coltart, C. (2012). Meeting the challenges of intensive parenting culture: Gender, risk management and the moral parent. *Sociology*, *46*(1), 25-40
- Sunderland, J. (2000). Baby entertainer, bumbling assistant and line manager: Discourses of fatherhood in parentcraft texts. *Discourse Society*, *11*, 249-274.
- Thomas, G. M., & Lupton, D. (2015). Threats and thrills: pregnancy apps, risk and consumption. *Health, Risk & Society*, online first before print. doi: 10.1080/13698575.2015.1127333
- van Leeuwen, T. (2009). Critical discourse analysis. In K. Tracy, C. Illie & T. Sandel (Eds.), *The International Encyclopedia of Language and Social Interaction*: Wiley Online Library. Retrieved from <http://onlinelibrary.wiley.com/book/10.1002/9781118611463>.
- Williams, S. (2008). What is Fatherhood?: Searching for the Reflexive Father. *Sociology*, *42*(3), 487-502