

Australian Ten to Men longitudinal health study reported that a range of health and lifestyle factors affect male sexual health. In turn, sexual health has an impact upon relationships, family, fathering, and long-term male health outcomes (LaMontagne et al., 2016). Schlichthorst, Sanci, and Hocking (2016) in the Ten to Men study examined health and lifestyle factors such as smoking, alcohol consumption, illicit drug use, obesity, and other factors linked to sexual difficulties (e.g., lack or loss of sexual desire, sexual aversion and lack of sexual enjoyment, erectile dysfunction, orgasmic dysfunction, and premature ejaculation for men). Schlichthorst, Sanci, and Hocking (2016) deduce that sexual difficulties are complex and, while common among men with poor physical or mental health, the premorbid status of the male must be considered, as well as other health factors, including prescribed medications.

Warner and Frey (2013) recommend that preconception sexual health and sexual function be included as part of the standard health check inventory across the patients' entire life span and that primary health-care agencies be well positioned to do this (Warner & Frey, 2013).

Primary health-care agencies in this scenario have an opportunity to explore men's preconception health and lifestyle, especially when couples present for their first pregnancy counseling, conception, or antenatal assessment, or where a male attends a GP or a fertility clinic for sexual difficulties. Sexual health is a feature of general preconception health, even when a sexual difficulty must be treated separately.

Prospective Fathers

Despite the lack of attention given to the issue of male preconception health and primary health care in the literature, there is some evidence that many men are aware of the importance of their own health prior to conception and that they would receive advice and information about preconception health care from their family physician if it were offered and if they attend for assessment (Frey et al., 2012). Frey et al. (2012), however, recommend that awareness does not always translate to knowledge of critical issues and risk factors, proposing that health practitioners may not be discussing preconception health during routine visits (Frey et al., 2012; Schlichthorst, Sanci, Pirkis, Spittal, & Hocking, 2016).

Bodin et al. (2017) propose that men can be prompted to develop a procreative consciousness and that factors related to fertility, emotional response, knowledge, and being able to visualize their future child's and partner's impact may influence their thinking prior to conception. Male preconception health care thus provides an opportunity to engage men around epidemiological factors, lifestyle, diet, exercise, and genetic predisposition to develop preconception strategies to improve male health, relationship integrity, and

family dynamics. Preconception male health takes a holistic approach to the well-being of men by not just isolating their sexual health as a difficulty, or disease state (Hammarberg et al., 2017; Schlichthorst, Sanci, Pirkis, et al., 2016; Warner & Frey, 2013).

Male role modeling, however, has arguably perpetuated a social construction of fatherhood being typified for many young men as confusing, or as undoing the errors of their own fathers (Thompson, Lee, & Adams, 2013). Poor experiences of being fathered can be introjected and then unconsciously associated to a perceived low worth of fatherhood. These poor experiences of fathering then become normative, especially in the context of the stressors associated with parenting (Miller, 2011), thereby perpetuating an ineffective cycle of fathering.

Van der Zee, De Wert, Steegers, and De Beaufort (2013) further argue that the engaged father is a father who functions as a carer and who contributes to parenting success. Unhealthy male preconception lifestyle behaviors, together with disengaged fathering, continued morbidity, and unhealthy generational outcomes, can result in children copying the behavior of their fathers, which then underwrites and perpetuates poor future conception outcomes.

Changing Behavior

To ensure men are well equipped to manage lifestyle and environmental concerns associated with preconception, it seems appropriate to invite them to participate in discussions around changing their lifestyle (if problematic) to improve conception outcomes. Unfortunately though, men are reported to ignore the lifestyle evidence, with health practitioners seemingly at a loss as to how to engage those with obvious health issues around prevention and health promotion for preconception (Fullston, McPherson, Zander-Fox, & Lane, 2017; Rizio, Thomas, O'Brien, Collins, & Holden, 2016; Schlichthorst, Sanci, Pirkis, et al., 2016; Warner & Frey, 2013). A central proposition to developing an effective male health preconception promotion program therefore needs to understand and consider how to motivate young men as potential fathers to undertake any required behavior changes.

The preconditions for motivated behavioral change are seemingly absent within these dynamics. Addressing this barrier of self-stigma toward the worth of fatherhood would appear to be needed as preceding or at least simultaneous to any primary health-care clinic-based intervention for preconception health (Corrigan, Larson, & Ruesch, 2009; Greaves, Oliffe, Ponc, Kelly, & Bottorff, 2010). Findings on the positive influence of fathers on their children's behavior, confidence, and well-being (Opondo, Redshaw, Savage-McGlynn, & Quigley, 2016) are an example of the required message to men, the general public, and health practitioners.

If one takes a futures perspective where young men could see their future selves and how lifestyle might impact on their ability to father a child or even affect their child's future development or very existence, it is conceivable that they would be motivated to adopt healthy lifestyle behaviors (Blank, Musch, & Pohl, 2007). In this context, epigenetic biological knowledge and personal intervention could make a difference. At the moment, however, epigenetic evidence, while available, is not sufficiently increasing or showing potentially the effect of lifestyle and environmental influences on the male germ line (Kotelchuck & Lu, 2017b; Stuppia, Franzago, Ballerini, Gatta, & Antonucci, 2015). As Soubry (2018, p. 8) recommends, it is expected that more data on epigenetic paternal influences will follow in the next few years, but we need to remain careful in interpreting them.

It is possible that the not so simple things like smoking cessation, alcohol moderation, and exercise can be changed, but they will require male preconception commitment (if it is considered problematic) and engagement with a practitioner to change lifestyle behaviors, at least in the beginning, at a primary health-care level (Finegersh, Rompala, Martin, & Homanics, 2015; Rance & Treloar, 2015). The evidence is clearly there and it is really, at least initially, a matter of drawing men's attention to the need to change and convincing them to improve preconception health (Aitken, 2014; Aitken et al., 2004).

If men are educated that paternal smoking and other adverse health-related behaviors, for instance, have the potential to alter the sperm DNA and directly impact on the health and well-being of the offspring (e.g., childhood cancer in the offspring of male smokers), perhaps this will provide the motivation to view fertility perspectives differently (Ji et al., 1997). Appealing to the greater good would seem to have more persuasive power, but change must first begin individually.

The research literature implies that men's preconception health is a multifaceted professional challenge. Factors related to lifestyle behaviors, domestic discord, genetic and epigenetic damage to sperm DNA, generational learned negative behaviors in male children, and paternal involvement during the antenatal period, all figure in the preconception conundrum related to men's sexual preconception health (Carlson, Kendall, & Edleson, 2015; Rotheram-Borus, Tomlinson, Roux, Stein, & Le Roux, 2015; Sadicario, Kelpin, & Svikis, 2017; St. Fleur, Damus, & Jack, 2016). Furthermore, as a man ages, the more likely it is that his ability to conceive will be affected (Aitken, 2014).

A male health focus at the primary health-care interface can address the gendered perceptions of men in society and unpack these to illustrate the need for improving health prior to conception. Such interventions will arguably challenge the scope of practice for many health professionals

who are focused on women's health and fertility, often couched as couple fertility, or as female preconception services (Hammarberg et al., 2017; Moos, 2010).

Discussion

Enhancing pregnancy outcomes through addressing primary health preconception care for men comprises two key facets: first, the provision of motivational information to prospective fathers and second, to encourage and work with them to modify behaviors based on this new knowledge (Van der Zee et al., 2013). Fatherhood identity theory suggests that men undertake a significant shift in self-identity when considering themselves to be fathers. Included in this identity shift often are enhanced levels of motivation to be a good father, a giver of care, and provider of income (Carlson et al., 2015).

Using this preconception identity shift as a motivational factor offers hope for behavioral change being undertaken by men, given some of the resistances they seemingly hold. Preliminary research conducted with a small sample of nine men advises that while some men may acknowledge the importance of male preconception care, they are only willing to modify their behaviors and lifestyle in the face of strong evidence of the benefits to pregnancy outcomes (Van der Zee et al., 2013). While a systematic review reveals inconsistent data on a range of paternal risk factors (Shah & Shah, 2010), it has been noted that not addressing male preconception care until definitive evidence is produced would be morally irresponsible (Van der Zee et al., 2013).

One can argue from an ethical perspective that men have a moral responsibility to change preconception health behaviors and lifestyle in order to create a nurturing safe environment for rearing children. Nevertheless, the evidence tells us that many men experience difficulty shifting their priorities, despite the evident desirability of being strong fathers and good relationship partners. If the male partner continues to smoke during the pregnancy, for example, there is an increased likelihood that the prospective mother will not be able to stop smoking, given the strong association between maternal and paternal smoking behavior (Alio, Salihu, Kornosky, Richman, & Marty, 2010; Gage, Everett, & Bullock, 2007; Hemsing, Greaves, O'Leary, Chan, & Okoli, 2012).

Fathers are in a powerful position to positively influence maternal behaviors, such as drug use and early utilization of antenatal care, each of which can have a significant impact on birth outcomes (Misra, Caldwell, Young, & Abelson, 2010). It is proposed that the prospective father can alter his behavior to prevent both direct and indirect harm to his future child (Van der Zee et al., 2013). Paternal involvement has also been shown to increase rates of prenatal care and reduce maternal

alcohol consumption (Misra et al., 2010), and mothers who were married, or in cohabiting relationships, have been identified to be less likely to smoke, use drugs, or have low birth-weight offspring (Teitler, 2001). Clearly, providing male preconception information and ideas about how to improve health, and subsequently fertility outcomes, has potential benefits to male health generally, especially in the context of being a physically and emotionally healthy individual, a great father, and a strong relationship partner. The important role of fathers has been further highlighted to encourage men to be actively involved in their children's lives, particularly in the antenatal period and early childhood years (Department of Health and Ageing, 2010).

Conclusion

This article has argued that a primary health-care model is an appropriate way to tackle the problems related to men's preconception health not being visible in primary health care and to address the male health outcomes in need of improvement (Frey et al., 2012; Warner & Frey, 2013). Establishing a men's primary health preconception model that incorporates consideration of sexual and overall health, fathering, future generations, child development, relationship discord, and access to services is a step forward in the right direction. A holistically healthy father, one who is engaged in the shared process of parenting, provides a strong role model for ongoing healthy male child development (Bond, Heidelbaugh, Robertson, Alio, & Parker, 2010).

Confining the construct of preconception to women misses the broader male influence, with preconception health often defined by the layperson as whether "they (the couple) can, or cannot conceive" children. In terms of conception success, nonetheless, male factors alone, or in combination with female factors, contribute to about 50% of infertility causes (Esteves, Hamada, Kondray, Pitchika, & Agarwal, 2012). Additional to this limited biomedical perspective, a focus on male preconception health, particularly in terms of preparing men at the primary health-care level for fatherhood, has the potential to reap male health benefits. Potential issues and contexts related to general health, as well as sexual health, can be discussed with men as they prepare to become fathers.



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