human
reproduction

ORIGINAL ARTICLE *Reproductive epidemiology*

Factors that influence the childbearing intentions of Canadian men

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BACKGROUND: The role of men in the childbearing decision process and the factors that influence men's childbearing intentions have been relatively unexplored in the literature. This study aimed to describe the factors that strongly influence the childbearing intentions of men and to describe differences in these factors according to men's age group.

METHODS: A telephone survey (response rate 84%) was conducted with 495 men between the ages of 20 and 45 living in an urban setting who, at the time of contact, did not have biological children. Men were asked about what factors strongly influence their intention to have children. Univariable and multivariable logistic regressions were conducted to determine if these factors were significantly associated with age.

RESULTS: Of those sampled, 86% of men reported that at some point in the future they planned to become a parent. The factors that men considered to be most influential in their childbearing intentions were: the need to be financially secure, their partner's interest/desire to have children, their partner's suitability to be a parent and their personal interest/desire to have children. Men who were 35–45 years old had lower odds of stating that financial security (crude OR: 0.32, 95% CI: 0.18–0.54) and partner's interest in having children (crude OR: 0.57, 95% CI: 0.33–0.99) were very influential, but had higher odds of stating that their biological clock (crude OR: 4.37, 95% CI: 1.78–10.76) was very influential in their childbearing intentions than men in the 20–24 year age group.

CONCLUSIONS: The factors that influence men's intentions about when to become a parent may change with age. Understanding what influences men to have children, and what they understand about reproductive health is important for education, program and policy development.

Key words: reproduction / men / childbearing / paternal age

Introduction

The role of men in the childbearing decision process, as well as the influences of paternal age on birth outcomes, have not been explored within the literature to the same extent as maternal factors (Chalmers and Meyer, 1996; Dudgeon and Inhorn, 2004). It is well known that the average age of childbearing among women has increased steadily over the past 20 years in developed countries, yet a similar trend seems to be occurring among men who are becoming fathers (Bray et al., 2006; Tough et al., 2007). For instance, statistics from England and Wales report that in 1993 fathers aged 35 years or over accounted for 25% of live births within marriage, which increased to 40% in 2003 (Bray et al., 2006).

The association between advanced maternal age and adverse birth outcomes has long been recognized, which has led to some concern regarding the trend towards having children later in life.

Paternal age, on the other hand, has received less attention although some research has found that men older than 35 years are twice as likely to be infertile as men younger than 25 (Ford et al., 2000). Some studies have also found associations between advanced paternal age and the risk of autism spectrum disorder (Reichenberg et al., 2006), schizophrenia (Malaspina et al., 2001), Down syndrome and other chromosomal anomalies (Fisch et al., 2003), autosomal dominant mutations (Friedman, 1981), congenital anomalies (Yang et al., 2006), preterm birth and low-birthweight (Zhu et al., 2005; Astolfi et al., 2006; Reichman and Teitler, 2006), miscarriage and fetal death (de la Rochebrochard and Thonneau, 2002). However, the associations reported between advanced paternal age and adverse birth outcomes have been somewhat inconsistent within the literature (Chen et al., 2008; Sartorius and Nieschlag, 2010). This could be due to a limited understanding of the factors that influence male fertility as well as

inadequate control of confounding factors (Chen et al., 2008; Sartorius and Nieschlag, 2010).

With evidence indicating that advanced parental age impacts birth outcomes, it is important to understand how the delay in childbearing comes about. Previous studies have shown that the male partner's intentions and desires can affect the timing of first pregnancy as well as women's desire for becoming pregnant (Chalmers and Meyer, 1996; Lazarus, 1997). One study found that women's desire to conceive is closely related to their evaluation of their particular relationship (Zabin et al., 2000) and other studies found that men play an important role in influencing the reproductive health behaviors of women both directly and indirectly (Thomson, 1997; Dudgeon and Inhorn, 2004). A longitudinal study conducted by Thomson (1997) concluded that husbands and wives desires to have a child were equally influential when examining a couple's births (Thomson, 1997). This study found when only one partner (male or female) wants to have a child, the birth rate is approximately half of that observed when both partners want to have a child (Thomson, 1997).

With regards to the timing of childbearing, much of the literature has focused on factors that influence women's intentions of when to have children. Recently, some studies have emerged that are beginning to shed light on men's perspectives, although a number of these studies have been drawn from specific populations (e.g. university students, those on low-income seeking reproductive health care) as opposed to a broader community population (Lampic et al., 2006; Virtala et al., 2006; Foster et al., 2008). Understanding the perspectives of men from a broader community population with regards to the timing of childbearing will provide a more comprehensive picture of the factors contributing to the growing number of people who are having children after age 35. This study was undertaken among a broad sample of men to address the following objectives: (i) to describe the factors that strongly influence the childbearing intentions of men and (ii) to describe differences in these factors according to men's age group.

Materials and Methods

Participants and setting

English-speaking men and women between the ages of 20 and 45 years, residing in Calgary and Edmonton, Alberta, Canada, without biological children at the time of contact were involved in this population-based study. Participants were recruited through a random-digit dialing technique. An urban setting was chosen as delayed childbearing was found to be more prevalent in these areas when compared with rural settings (Tough et al., 2007). Individuals without children were chosen to understand what women and men deem important prior to pregnancy, and to minimize the confounding knowledge of previous pregnancies. An overall response rate of 84% (1506/1791 conversed with and eligibility established) was obtained for this survey and only male respondents are included in this analysis.

Questionnaire

The questionnaire was developed by collecting information from focus groups with women, and 10 convenience interviews undertaken with men. Seventeen questions about factors that would influence the participant's desires about when to have children were answered on a five-point Likert scale, the choices being: Not At All, Not Very Much, Neutral,

Somewhat and Very Much. Questions about demographics and history of family structure and function were also included. Data were collected between October 2003 and February 2004 using a computer-assisted telephone interview (Ci3 WINCATI, Sawtooth Software).

Primary measures

Responses to questions about factors that influenced childbearing were collapsed into two categories: (i) Very Much and (ii) Somewhat, Neutral, Not Very Much and Not At All. This grouping allowed for the identification of only highly influential factors in the timing of childbearing.

Statistical analysis

This analysis was completed using SPSS (Statistical Package for the Social Sciences: PC version 15.0) and significance was set at $P < 0.05$. Men were grouped into four age groups: 20–24 years; 25–29 years; 30–34 years; and 35–45 years. Descriptive statistics were used to describe the characteristics of study participants stratified by age group. Categorical variables were expressed as frequencies and percentages with 95% CIs. χ^2 tests were used to assess for differences in participant demographics. Univariable logistic regression was used to determine whether age was significantly associated with any of the factors deemed to be very important in influencing men's childbearing intentions. Multivariable logistic regression was undertaken to determine what demographic variables (age group, annual household income, highest level of education completed, ethnicity and marital status) were associated with the four most commonly reported factors that influenced childbearing decisions and the ideal age to begin parenting.

Ethical approval

This study was approved by the Conjoint Health Research Ethics Board at the University of Calgary.

Results

Participants

The questionnaire was completed by a total of 495 men with a mean age of 30 years. Over 50% of these men had completed post-secondary education (trade, college or university level; Table I). The majority of respondents were Caucasian, non-smokers, single/never married, working for profit and having a total household income between $30 000 and $59 999 (Table I). Men in the 20–24 age groups were more likely to have completed less education, have a lower family income, and were more likely to be renting a home or living with their parents (Table I). Almost all participants (95.8%) were raised by their biological parents. Furthermore, a large proportion of the participants indicated that their parents were not divorced or separated by the time the participants were 16 years of age (Table I). Men aged 20–24 were more likely than the others to have had their parents divorced/separated (Table I). Most of the participants did not live within a blended family (i.e. a family consisting of a combination of step parent and step siblings) at any point in their lives (Table I). About a third had a partner (31.6%), and only 6.3% of the entire sample was currently trying to become pregnant with their partner. Eight men reported that they and their partner had sought out fertility treatments to assist them in conceiving and 13 men had step-children.

Table I Characteristics and upbringing of participants, by men's age group.

Characteristic	Overall (n = 495), n (%)	20–24 Years (n = 135), n (%)	25–29 Years (n = 116), n (%)	30–34 Years (n = 122), n (%)	35–45 Years (n = 122), n (%)	P-value
Married or common law	161 (32.3)	23 (17.0)	40 (34.5)	50 (40.0)	48 (39.0)	<0.001
Ethnicity						0.668
Caucasian	411 (83.0)	111 (83.5)	92 (79.3)	104 (84.6)	104 (84.6)	
Other	84 (17.0)	22 (16.5)	24 (20.7)	19 (15.4)	19 (15.4)	
Education completed						<0.001
Did not complete post-secondary education	204 (41.0)	104 (77.6)	35 (30.4)	25 (20.0)	40 (32.3)	
Completed post-secondary education	294 (59.0)	30 (22.4)	80 (69.6)	100 (80.0)	84 (67.7)	
Annual household income						<0.001
<$29 999	79 (18.8)	39 (37.1)	17 (17.3)	10 (9.5)	13 (11.6)	
$30 000–$59 999	143 (34.0)	26 (24.8)	33 (33.7)	84 (45.7)	36 (32.1)	
$60 000–$89 999	78 (18.6)	15 (14.3)	20 (20.4)	18 (17.1)	25 (22.3)	
$90 000 or more	120 (28.6)	25 (23.8)	28 (28.6)	29 (27.6)	38 (33.9)	
Own home, condo or duplex	185 (37.2)	11 (8.1)	35 (30.2)	63 (50.8)	76 (62.3)	<0.001
Main activity is working for profit	374 (75.1)	67 (49.6)	85 (73.3)	114 (91.2)	108 (88.5)	<0.001
Smoking status						0.782
Current smoker	122 (24.4)	36 (26.7)	29 (25.0)	24 (19.2)	33 (26.8)	
Ex-smoker	87 (17.4)	21 (15.6)	19 (16.4)	24 (19.2)	23 (18.7)	
Never smoked in lifetime	290 (58.1)	78 (57.8)	68 (58.6)	77 (61.6)	67 (54.5)	
Consumed alcohol in past year	448 (89.6)	121 (89.6)	109 (94.0)	115 (92.0)	103 (83.1)	0.032
Parents separated before participant was 16	101 (20.4)	46 (34.1)	15 (13.0)	23 (18.4)	17 (14.0)	<0.001
Lived in a blended family at any time	72 (14.4)	26 (19.3)	10 (8.6)	20 (16.0)	16 (13.0)	0.104

Note that the denominators within the tables may vary due to: participants who may have responded 'don't know', participants who were ineligible to answer the question for various reasons, as well as participants who may not have given a response to the question. Thus, the percentages given in brackets are the valid percentages.

Table II Ideal age to begin parenting, by men's age group.

	Overall (n = 448), n (%)	20–24 Years (n = 127), n (%)	25–29 Years (n = 110), n (%)	30–34 Years (n = 109), n (%)	35–45 Years (n = 102), n (%)	P-value
Ideal Age to begin parenting						<0.001
Before 30 years of age	233 (52.0)	86 (67.7)	63 (57.3)	47 (43.1)	37 (36.3)	
30 years of age or over	130 (29.0)	27 (21.3)	29 (26.4)	36 (33.0)	38 (37.3)	
Age not important	85 (19.0)	14 (11.0)	18 (16.4)	26 (23.9)	27 (26.5)	

Note that the denominators within the tables may vary due to: participants who may have responded 'don't know', participants who were ineligible to answer the question for various reasons, as well as participants who may not have given a response to the question. Thus, the percentages given in brackets are the valid percentages.

Plans for childbearing

Eighty-six percent of men indicated that they planned to have children; of those who did not plan to ever have children, 5% indicated that they had considered children in the past. The proportion of men who never wanted, nor planned to have children, was 9.2%. Men who did not want to become fathers were significantly more likely to be married

Table III Factors influencing the timing of childbearing, by men's age group.

The following factors were very influential in men's desire about when to parent[a]	Overall (n = 495), n (%)	20–24 Years (n = 135) OR (95% CI)	25–29 Years (n = 116), OR (95% CI)	30–34 Years (n = 122) OR (95% CI)	35–45 Years (n = 122) OR (95% CI)
The need to be financially secure	243 (53.5)	Ref	0.63 (0.38–1.07)	0.60 (0.38–1.02)	**0.32 (0.18–0.54)**
Partner's interest/desire to have children	213 (50.7)	Ref	0.79 (0.47–1.33)	0.71 (0.42–1.21)	**0.57 (0.33–0.99)**
Partner's suitability to be a parent	202 (48.1)	Ref	0.63 (0.37–1.06)	1.08 (0.63–1.84)	0.74 (0.43–1.29)
Personal interest/desire to have children	178 (39.4)	Ref	0.73 (0.43–1.23)	1.16 (0.69–1.95)	0.73 (0.43–1.25)
Health status	150 (33.0)	Ref	0.58 (0.33–1.00)	0.75 (0.43–1.28)	0.94 (0.55–1.61)
The need for a permanent position in employment	138 (30.7)	Ref	0.85 (0.49–1.47)	0.92 (0.53–1.60)	0.65 (0.36–1.17)
The amount of time devoted to education and training	117 (26.0)	Ref	0.66 (0.38–1.14)	**0.40 (0.22–0.73)**	**0.34 (0.18–0.64)**
The amount of time devoted to career	117 (25.8)	Ref	0.67 (0.38–1.17)	0.54 (0.30–0.97)	0.62 (0.34–1.11)
The need to own a home	98 (21.6)	Ref	0.66 (0.37–1.20)	0.58 (0.32–1.07)	**0.42 (0.22–0.82)**
Proximity to family for social support	65 (14.5)	Ref	0.93 (0.47–1.81)	0.56 (0.26–1.19)	0.54 (0.25–1.18)
Desire to travel	58 (12.8)	Ref	0.52 (0.24–1.13)	0.54 (0.25–1.16)	0.64 (0.30–1.36)
Concerns of losing job while taking parental leave	54 (12.0)	Ref	**0.21 (0.09–0.54)**	**0.26 (0.11–0.62)**	0.55 (0.27–1.13)
Culture or faith	53 (11.8)	Ref	**0.42 (0.19–0.93)**	0.58 (0.28–1.21)	**0.27 (0.11–0.70)**
Feeling of the 'biological clock' ticking	47 (10.4)	Ref	1.32 (0.46–3.77)	1.89 (0.71–5.07)	**4.37 (1.78–10.76)**
Concerns of not advancing in employment while taking parental leave	29 (6.6)	Ref	0.44 (0.15–1.30)	0.46 (0.16–1.36)	0.61 (0.22–1.69)

Bold values indicate statistically significant ($P < 0.05$).
Question: 'How much of the following factors would influence your decision(s) about when to parent?' Response choices included: very much, somewhat, neutral, not very much and not at all.

or in a common law relationship ($P = 0.02$), be Caucasian ($P = 0.02$), be current or former smokers ($P = 0.004$), own their homes ($P = 0.02$) and be working ($P = 0.04$) than those who planned to have children or had considered having children in the past.

More than half of men felt that the ideal age to begin parenting was before 30 (Table II) and specifically 47.8% felt it was ideal to begin parenting between the ages of 25 and 29. Men who were 30 years of age or older were more likely to indicate it was ideal to begin parenting at age 30 or older or that age was not important (Table II). Only 2% of all men believed it was ideal to begin parenting after the age of 35.

Factors influencing timing of childbearing

The top four factors that were stated to be very influential in determining the timing of parenting were similar among men of all four age groups. These were financial security (53.5%), partner's interest/desire for having children (50.7%), partner suitability to parent (48.1%) and one's own interest/desire for having children (39.4%; Table III). Men who were currently married or in a common law relationship were significantly less likely to report that concerns about losing their job while on parental leave ($P = 0.04$) and were significantly more likely to report that feelings of a biological clock ($P = 0.04$) were very influential factors in determining the timing of parenting.

In the univariable (Table III) and multivariable (Table IV) analyses, financial security significantly differed by men's age group, with men aged 35–45 being less likely to rate this as a very important factor than men in the 20–24 age group (crude OR: 0.32, 95% CI: 0.18–

0.54). The greatest number of significant differences were noted between the 20–24 year age group and the 35–45 year age group, with older men being less likely to rate partner's interest/desire to have children (crude OR: 0.57, 95% CI: 0.33–0.99), amount of time devoted to education and training (crude OR: 0.34, 95% CI: 0.18–0.64), the need to own a home (crude OR: 0.42, 95% CI: 0.22–0.82) and culture/faith (crude OR: 0.27, 95% CI: 0.11–0.70) as being very important in influencing their intentions regarding when to become a parent (Table III). Men in the oldest age group were significantly more likely to report that the feeling of a biological clock ticking (crude OR: 4.37, 95% CI: 1.78–10.76) was a very important factor in their childbearing intentions when compared with men in the youngest age group (Table III). As seen in the multivariable analysis (Table IV), very few demographic factors were significant predictors of factors that men deemed very influential in their childbearing intentions.

Discussion

In this analysis, we demonstrate that in an urban setting in Canada almost 90% of men between the ages of 20 and 45 who do not currently have children, plan to become a parent at some point in their lives. These figures are similar to those reported in studies of male university students in the Nordic countries. Lampic et al. (2006) found that 97% of male university students in Sweden wanted to be fathers at some point in time (Lampic et al., 2006), while Virtala

Table IV Demographic predictors of factors that strongly influence childbearing intentions.

	Financial security	Partner's interest	Partner's suitability	Personal interest	Ideal age to begin parenting ≥30
Age group					
20−24	Ref	Ref	Ref	Ref	Ref
25−29	0.68 (0.36−1.28)	1.07 (0.56−2.03)	0.67 (0.35−1.28)	0.71 (0.37−1.36)	0.97 (0.44−2.15)
30−34	0.65 (0.33−1.28)	1.21 (0.60−2.44)	1.29 (0.64−2.60)	1.12 (0.57−2.20)	**2.58 (1.14−5.85)**
35−45	**0.32 (0.17−0.62)**	0.85 (0.44−1.67)	0.76 (0.39−1.49)	0.75 (0.39−1.45)	**3.45 (1.58−7.55)**
Annual household income					
<$29 999	Ref	Ref	Ref	Ref	Ref
$30 000−$59 999	0.94 (0.49−1.80)	1.01 (0.52−1.98)	0.94 (0.48−1.83)	0.64 (0.33−1.22)	**0.44 (0.20−0.99)**
$60 000−$89 999	0.93 (0.45−1.90)	1.37 (0.70−2.85)	1.12 (0.54−2.33)	0.73 (0.35−1.49)	0.50 (0.21−1.22)
≥$90 000	0.73 (0.38−1.42)	1.31 (0.70−2.58)	0.89 (0.45−1.77)	1.11 (0.58−2.15)	0.69 (0.31−1.55)
Education					
Did not complete post-secondary education	Ref	Ref	Ref	Ref	Ref
Completed post-secondary education	0.81 (0.50−1.30)	0.81 (0.49−1.33)	1.31 (0.80−2.16)	1.06 (0.65−1.73)	**1.85 (1.02−3.38)**
Ethnicity					
White	Ref	Ref	Ref	Ref	Ref
Other	0.92 (0.52−1.64)	0.73 (0.40−1.34)	**0.53 (0.29−0.97)**	1.01 (0.56−1.82)	0.55 (0.26−1.16)
Marital status					
Single	Ref	Ref	Ref	Ref	Ref
Married/common law	1.08 (0.68−1.72)	0.64 (0.40−1.03)	1.04 (0.65−1.67)	0.72 (0.45−1.16)	0.78 (0.44−1.38)

Bold values indicate statistically significant ($P < 0.05$).

et al. (2006) showed that 87.4% of male university students in Finland wanted to become parents (Virtala *et al.*, 2006). In the face of declining fertility rates in developing countries, it is encouraging that so many men hope to become fathers. However, a study examining male parenting desires and birth rates in eight European countries found that parenting desires outweigh actual births, with anywhere from 0.12 to 0.75 additional children per couple expected based on reported male desires (Puur *et al.*, 2008).

While most participants in the current study believed that the ideal age to begin parenting was between the ages of 25 and 29, as men became older, they had higher odds of reporting that the ideal age to begin parenting was over 30. As men approach their preconceived ideal age to parent, they may adjust their perceptions, so that they can meet other preconditions to having children (e.g. financial security, finding a suitable partner). Over half of all participants felt that financial security was a very influential factor in determining when to parent, followed by partner interest/desire to have children, and partner suitability to parent. These findings support those from previous studies conducted with women in the USA and Australia (Zabin *et al.*, 2000; Hammarberg and Clarke, 2005; Foster *et al.*, 2008), and studies with men in Sweden and the USA (Lampic *et al.*, 2006; Foster *et al.*, 2008). In the current study, financial security was more often reported among men aged 20−24 and less often among men aged 35−45 as being a very influential factor. However, men aged 35−45 had a significantly higher income than those aged 20−24. It may be that these older men had already obtained financial security,

and thus, it was no longer seen as a prerequisite to having children. These findings could also potentially reflect career and professional stability; older men tend to have completed their education and be more established in their careers, whereas younger men tend to be in the midst of career development or completing their education.

From this study, it appears that many men would like to mitigate the financial risks of having children by obtaining a certain level of financial security before starting a family. However, there are other risks to childbearing that the majority of men are unaware of. Less than 40% of men recognize the link between advanced maternal age and the increased risk for adverse birth outcomes such as low-birthweight/preterm delivery or multiple births (Tough *et al.*, 2007). With men being highly involved in a woman's decision-making process about when to become pregnant (Chalmers and Meyer, 1996; Lazarus, 1997), there is a need for strategies to inform these individuals about the risks of waiting to have children, allowing them to make more informed decisions that weigh the benefits and risks of delaying childbearing. Although those aged 35−45 had the highest odds of reporting their 'biological clock' as being very influential in their childbearing intentions, only 1 in 10 participants indicated that this was an influential factor in determining when to parent. Langridge *et al.* (2005) also found that biological drive was predictive of men's childbearing intentions, but this factor was a stronger predictor for women than it was for men (Langridge *et al.*, 2005). While we acknowledge that outside of a relationship where childbearing is possible, men cannot influence the timing of childbearing; however, by

informing men and women throughout the lifespan about the risks of delayed childbearing, it is hoped that they may be more informed when making childbearing decisions within the context of a partnership.

The main limitation within this analysis is the potential lack of generalizability of the findings to all populations. Participants consisted mainly of urban residents, wherein the issue of delayed childbearing is most acute; therefore, these results may not reflect the feelings of men residing in rural settings. Additionally, no information is available on those who chose not to participate in the study; as such, it is possible that the findings of this study are not representative of all urban men in Alberta. It is unknown in which direction this possible selection bias may have affected the overall results. Economic and ethnic factors were fairly uniform among the participants involved in the study. The way in which this study was designed, however, allowed for random population sampling and thus the creation of a more accurate representation of an urban population. The population of men sampled is similar with regards to proportion of visible minorities, employment rates, income, educational attainment and smoking status that is seen in the 2001 Canadian Census community profiles for the cities of Calgary and Edmonton (Statistics Canada, 2003) and the 2003 Canadian Community Health Survey (Brennan et al., 2010). Statistical correlation for multiple testing was not undertaken; hence it is possible that spurious associations may have been found by chance alone. However, as this is a descriptive study that does not aim to assess the validity of a specific hypothesis, this is less of a concern.

As seen in this analysis, the ideals deemed important before parenting did not differ greatly between men of different ages, yet more individuals are delaying childbearing (Bray et al., 2006; Tough et al., 2007). While achieving financial and relationship security can have many positive long-term effects on family stability and child health and development, these benefits need to be weighed against the potential costs of delayed childbearing. Ultimately, most men hope to someday become parents, but they lack information on the negative impacts delayed childbearing can have on fertility and birth outcomes (Lampic et al., 2006). To ensure that men are able to make informed decisions related to family planning goals, educational activities regarding the health and social consequences of delayed childbearing aimed at the population need to be undertaken. Additionally, workplace policies that support men and women in parenting when their reproductive health is optimal should be explored.

Authors' roles

Funding

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