Received: 2 May 2018 | Revised: 20 August 2018 | Accepted: 20 August 2018

DOI: 10.1111/aogs.13449

ORIGINAL RESEARCH ARTICLE

Men's expectations and experiences of fertility awareness assessment and counseling

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Funding information
RS received a PhD grant from the Rosa Ebba Foundation and the Danish Health Insurance Fund (15-B-0095). EK was funded by an European Society of Human Reproduction and Embryology Travel/Training Fellowship in collaboration with ReproUnion.

The Fertility and Assessment Clinic, Copenhagen University Hospital, Rigshospitalet was established in 2011 as part of the ReproSund collaboration followed by the ReproHigh and ReproUnion collaborations, which were co-financed by EU Regional Funding.

Abstract

Introduction: Men play an important role in couples' decisions about the timing of parenthood and they tend to delay parenthood. The reasons for delaying childbearing are multifaceted and complex. Their decisions may be based on a lack of accurate information about the reproductive life span and the consequences of delaying parenthood. The aim of this study was to explore men's expectations and experiences of fertility counseling.

Material and methods: Data were collected through semi-structured qualitative interviews with 21 men attending either the Fertility Assessment and Counseling Clinic in Copenhagen or in Horsens, Denmark. The men had no known fertility problems before going to the fertility counseling. They were interviewed before and after fertility counseling.

Results: The men were not concerned about their fertility before going to counseling. They believed they would be able to conceive whenever they wanted. Three of them had low semen quality and felt "punched in the gut" when they received these results at the fertility counseling. The study participants preferred clear and concrete information, and relevant knowledge at the right time was very important. The men felt empowered after the fertility counseling because they were equipped with concrete information that could inform their parenthood plans and decisions. Even the men who received unexpected bad news felt positive about the counseling. The participants perceived their knowledge and awareness of risk factors concerning fertility had increased.

Conclusions: Men may benefit from an individualized approach where their fertility is assessed and they receive tailored fertility counseling specific to their personal fertility results. This type of intervention may be effective in increasing men's fertility awareness because it is personally relevant.

KEYWORDS
childbearing, delayed childbearing, family formation, fertility awareness, male, qualitative research

1 | INTRODUCTION

There is an increasing recognition that men play an important role in couples' decisions on the timing of parenthood. Most Western men wish to become fathers in the future but they often intend to have children at an age beyond their own and their female partner's optimal fertility. Childless men seldom hypothesize about their own future risk of infertility due to delay.[1-3]

Danish men are 3 years older than women in general when they have children. The mean age of first-time fatherhood in Denmark has increased from 28.5 years in 1980 to 31.2 years in 2016.[4] Unfortunately, delayed childbearing and advanced paternal age is associated with higher rates of infertility, a greater reliance on reproductive technologies, more risks of adverse maternal, fetal, and infant outcomes, smaller than intended family sizes, and increased permanent, unintentional childlessness.[5]

The reasons for delaying childbearing are multifaceted and complex and include factors such as relationship status, personal readiness, and career and financial stability.[1,3,6] In the context of these factors, research suggests that men and women may also delay parenthood based on a lack of accurate information about the reproductive life span and the consequences of delaying parenthood.[7] Recognizing men's role in decision-making about timing of parenthood, several studies have examined men's fertility knowledge.[3,8-20] These studies have shown that men have critical gaps in their knowledge on fertility issues and assisted reproduction. For example, men underestimate the impact of the age-related decline in fertility in women[9,16-18,21] and overestimate the success rates of fertility treatment.[9,11,16-18] Men also lack knowledge about risks to fertility,[10] the impact of age on male fertility,[12] and the incidence of infertility.[6]

This body of research suggests that men may be making decisions about timing of parenthood based on false assumptions about the reproductive life span and the consequences of postponing parenthood. Educational initiatives have been undertaken in many countries in order to increase men and women's fertility awareness.[7,12,22] This small body of literature suggests that increased fertility awareness and intentions on the timing of parenthood may be linked.[7]

The Fertility Assessment and Counseling (FAC) Clinic, Copenhagen University Hospital, Rigshospitalet in Denmark, was developed in response to the increase in delayed childbearing and gaps in fertility awareness in order to support informed childbearing decisions. There is a need to investigate whether this type of intervention has an impact on the critical issues of delayed childbearing and gaps in fertility awareness and knowledge. The purpose of our study was to explore men's expectations and experiences of fertility assessment and counseling through qualitative interviews conducted immediately before and some weeks after fertility counseling. This is the first study to our knowledge that explores men's expectations and experiences of this type of intervention.

Key message

Before attending the Fertility Assessment and Counseling Clinic men had low expectations of fertility counseling. Afterwards they felt informed and empowered by being given concrete and relevant information about their fertility.

2 | MATERIAL AND METHODS

The Fertility Assessment and Counseling Clinic in Copenhagen, Denmark, was established in August 2011 to offer men and women with no known fertility problems assessment and counseling on their present and future fertility. Another clinic was later opened in Horsens, Denmark. Copenhagen is Denmark's capital city and Horsens is a smaller city with 58 000 inhabitants in rural Denmark. Men and women undergo an individualized face-to-face fertility counseling free of charge and without a referral. It includes a risk assessment with questions about their medical history, reproductive life, and lifestyle factors, which they fill out before fertility counseling.[23,24] The men provide a sperm sample that is analyzed by in-clinic technicians. Sperm concentration and volume are categorized according to World Health Organization criteria.[25] During fertility counseling the men are provided with these results and a personal risk score based on the findings of the risk assessment and sperm analysis. Men who had booked fertility counseling with their partner were eligible to participate in the study. The men received invitations to participate via email, followed up via telephone. A total of 24 men were contacted, of whom 21 agreed to participate in this study and 19 of the 21 participants attended the Fertility Assessment and Counseling Clinic on the initiative of their partner.

We developed two semi-structured interview guides with open-ended questions. The first interview focused on the participants' family formation intentions and their expectations of the Fertility Assessment and Counseling Clinic and the second on their experiences of the FAC Clinic. The main questions were: What are your expectations and experiences of the counseling? What did you get out of the counseling? The men were interviewed face-to-face twice during 2015; before and after fertility counseling at one of the two clinics. The second interview was performed from 1 to 2 weeks after fertility counseling, depending on their preference and availability. All interviews were conducted by the first author (RS) and took place either at the FAC Clinic or at their homes. The interviews were audio-taped and transcribed verbatim and anonymized. The duration of the interviews varied from 15 minutes to 1 hour, with an average duration of 26 minutes. In general, the second interview took longer than the first.

The transcripts were analyzed according to qualitative content analysis.[26] Salient sentences and paragraphs that related to the study questions were identified and labeled with a code reflecting their meaning. Codes were grouped into categories, sub-themes, and an overall theme based on similarities and differences between the men's experiences. To increase trustworthiness, the analysis followed Lincoln and Guba's[27] guidelines and the consolidated criteria for reporting qualitative research (COREQ).[28]

2.1 | Ethical approval

This study followed the principles of the Declaration of Helsinki II for medical research. The study was approved by the Data Protection

Agency (SUND-2017-45). According to Danish law, interview studies do not require permission from a scientific ethics committee. All participants provided their written, informed consent. The interviews were anonymized and identifiable data were kept in a separate document that was available to only the first author.

3 | RESULTS

The participants' average age was 34.0 years, and their partners' average age was 32.9. They had been in a relationship for an average of 4.5 years. Nine couples were trying to conceive. Seven men were from the clinic in Horsens and 14 from Copenhagen. The men had medium to high vocational training. There were no differences in results based on setting or vocational training. All the men had a partner. In all but two cases, the men came to the FAC Clinic on their partner's initiative.

The agreed overall theme was "Increased fertility awareness." The sub-theme for the interview before the fertility counseling was "Expectations" with the category "No expectations, no worries." For the interview after the fertility counseling, the sub-theme was "Experiences" with the categories "Informed and empowered," "Satisfied with the consult," "Surprised and unexpected," and "Maybe it's time to make a change?".

3.1 | Increased fertility awareness

The main theme was increased fertility awareness. The men's expectations and experiences related in a general way to awareness. Prior to the fertility counseling it referred to a lack of awareness of the potential for fertility problems. After the fertility counseling it referred to an increase in awareness about their fertility status and potential risks to fertility along with their personal reactions to this new awareness.

3.2 | Before fertility counseling: Expectations

3.2.1 | No expectations, no worries

The men were used to protecting against pregnancy so the thought that they might not be able to conceive was not something they had considered or wanted to consider. Instead, they wanted to focus on Plan A (ie, their preferred form of biological parenthood) and were not concerned about their fertility. The only reference to expectations was that they expected that they would receive concrete information about their fertility status:

> Expect to get a full clarification if we are both, what's it called, fertile. (Paul, 40, before)

The men had few expectations of fertility counseling because they had not given it much thought up till then, and were uncertain about what the counseling would include:

> I do not know what to expect, to be honest. (Adam, 46, before)

They had few expectations of the counseling because most of the men attended the fertility counseling at their partner's request. The pattern was of following their partner's lead in the process:

> I have not been proactive at all in this process. (Norbert, 36, before)

Thus, they agreed to their partner's suggestion to attend the fertility counseling but they had not thought about it in any detail or what they could gain from it.

3.3 | After fertility counseling: Experiences

3.3.1 | Informed and empowered

As in the interviews before the fertility counseling, the men appreciated receiving specific concrete information in the counseling session; for example, seeing their sperm under the microscope or receiving the results of their semen test. Information provided as numbers or statistics was preferred, as it was consistent with the way they liked to process information.

Receiving fertility counseling appeared to make their fertility personally relevant, meaning that if they had not already done so, they began to think about their fertility and the possibility of parenthood:

> [My thoughts about fertility have] gone from nothing to suddenly becoming very relevant. (Eric, 28, after)

For some it was useful because it made them think about and reflect on their fertility in a new way:

> Some of these questions do cause one to reflect a little more about some things. I do not know if I'm more clear about all these things, but I think that it has been helpful, such as being asked some of these questions or thinking about some of the things. (Brian, 37, after)

When describing their experience at the FAC Clinic, most of the participants indicated that it was a positive experience because they felt they gained valuable new knowledge about fertility. The men believed that the new knowledge could assist them to achieve their goals of having children. They felt one step closer to their goal, which felt empowering and helpful:

> If we make the decision, we will do it on an informed basis. (Lawrence, 38, after)

With information, they could devise a plan of action. They would rather know if they had low semen quality and not "waste time" trying

for several months. They preferred to know whether there were any problems with their fertility so they could start fertility treatment or start thinking of other alternatives:

> Why go through all that trouble if you still know that it is quite impossible, then it could well be that you should start somewhere else. (Daniel, 29, before)

Most of the men said that their experience left them feeling reassured about their fertility and their opportunity to become a parent:

> Relaxation around it because we have become better informed about what our real possibilities are. (Herman, 32, after)

They also said that they no longer needed to use "Dr Google" because they felt they were well informed:

> I think we got answers to what we needed to, so I have not needed [Google]. (Carl, 26, after)

After the fertility counseling the men felt that the "baby project" (ie, their focus on the goal of becoming a parent) had become more concrete. Attending the session with their partner, seeing their partner being scanned, seeing their sperm cells under the microscope and being provided with information helped them feel more committed to the task and that in this way it had become more real:

> The project becomes more concrete when you have sought counseling about it. (Herman, 32, after)

3.3.2 | Satisfied with the consultation

The men felt satisfied with the fertility counseling whether or not they received encouraging or discouraging results. They indicated that negative results were provided with sensitivity and tact.

Even those who were initially somewhat uncertain about the appointment felt satisfied afterwards. The contrast between participants' impressions before and after fertility counseling is illustrated in the quotes:

> [Fertility counseling] seems to diminish some of the coincidence and romance of it. I think that it is a bit boring. (Paul, 40, before)

> The counseling is good because you are really led around by the hand, and followed around in every corner of your life and what could potentially affect your fertility. (Paul, 40, after)

3.3.3 | Surprised and unexpected

At this stage, most of the men had only recently started trying to conceive or had not yet tried. As a result, they did not expect that there would be a bad semen test result:

> I never gave it a thought that I wouldn't be able to, or that it would be a problem for me at all. (Daniel, 29, after)

They may have wondered about their female partner's fertility but very few had worries about their own. They believed that, given they lived a fairly healthy life, they should not have any fertility problems. Overall, they wanted to think positively and not worry about a negative outcome.

Three men received negative test results indicating poor semen quality. Since they had assumed they were fertile they experienced the negative test results as a "punch in the gut." This feeling was still present 1-2 weeks after counseling, when the follow-up interview was conducted.

The men felt they had received a "blow" to their sense of masculinity or manliness:

> To propagate life, or even more to the point, [it is] one's reason for being and existing. It would be a shame if it just died out. But it was like, really, something that impacted my sense of masculinity. (Daniel, 29, after)

Having received a test result indicating poor semen quality, the men wanted to have another test. They also tried to find a logical explanation for the negative test result (eg, they had recently ejaculated, were stressed, or had drunk too much coffee):

> [I'm skeptical]; could it be true? I was very quick to notice that the doctor said that another sample was necessary. (Lawrence, 38, after)

They wanted to focus on their ideal, which in all cases was biological fatherhood, and anything else (eg, considering fertility treatment or adoption) was too upsetting to consider:

> I cannot handle the fact that we need clinical help. (Daniel, 29, after)

The men's lack of acceptance of these results also fueled a desire in them for more information, to find explanations, and to identify possible solutions. While there was some denial of the test results, they also sought out opportunities to empower themselves with information or to find solutions, such as to learn the statistics about the prevalence of low semen quality:

> There's nothing horrible about it, when I see the statistics and see how many people have issues with low sperm quality—so one is not alone in this situation, and it seems that there still are possibilities.
>
> (Lawrence, 38, after)

3.3.4 | Maybe it's time to make a change?

The men indicated that fertility counseling had made them think about the possibility of changing their behavior to increase their chances of conceiving with their partner. They felt forced to address the issue of when to try to conceive or the reality that they might experience fertility problems. To these men, lifestyle behavior change was a very tangible and concrete way to increase their chances of conceiving. That said, they wanted to change things only when it was necessary (ie, if they had a low semen quality). Prior to fertility counseling the men had assumed they were fertile, so did not expect they needed to change their behavior. However, attending counseling helped them to start thinking about their fertility and being more open to potential behavioral change to improve their fertility, even though at this stage they were not ready to make any changes unless it was necessary and relevant at the present time (eg, when starting to conceive with partner, or finding out they had poor sperm quality). When they considered changing their behavior they were more open to small changes that were easier to implement, such as cutting down on coffee, if necessary in the future. They also talked about perhaps bringing forward their plans to have a family because of what they had learned about female age and risks to fertility (ie, by starting earlier to have a greater chance of conceiving).

> [I've learnt] enough to bring forward my decision … to get started with starting a family. (Frederic, 31, after)

However, some of the men said that the fertility counseling did not change their attitude about when they would start a family:

> As long as the lights are green, well, then I do not think there's anything we should do, at least not just now. (Paul, 40, after)

4 | DISCUSSION

The men in this study believed they had received helpful and relevant information at fertility counseling. McBride et al. talk about teachable moments, where naturally occurring health events are thought to motivate people to adopt risk-reducing health behavior spontaneously.[29] Starting to think about their fertility can be viewed as a naturally occurring health event for men, and this is a suitable time for reflecting on their family formation preferences and presents an opportunity to increase their fertility awareness in their decisions over timing for childbearing. It is important to target men when this knowledge has the potential to be personally relevant (ie, when starting to think about their fertility and the possibility of parenthood) to increase the likelihood that they will internalize this knowledge. Our findings suggest that there might be strength in the individualized approach where clients are assessed and receive tailored counseling specific to their personal fertility results in order to create such a moment of relevance.

In our study, the men were not concerned about their fertility before going to the FAC Clinic. They assumed they would be able to conceive whenever they tried.[1] Our findings confirm previous research that men have significant knowledge gaps in their understanding of fertility.[3,11,16,18,21] The pervasiveness of these misconceptions was apparent in the men's lack of acceptance of bad test results (ie, by wanting to be tested again because they were certain they were fertile). According to Connell's theory of masculinity, this may also have been a way of maintaining their sense of masculinity in the face of a threat of infertility.[30] Consistent with previous research suggesting that men experience infertility as a life crisis,[31] the men felt "punched in the gut" or blindsided by the results, given that they had no inclination that they could have a problem. They took their fertility for granted. This lack of knowledge may serve as a barrier to help-seeking in men.[32] This suggests the need for continued efforts to increase men's fertility awareness.

Our findings provide support for the notion that there are gender differences in help-seeking behavior, as most of the men attended fertility counseling on the suggestion of their partner.[33] Our results show that men prefer clear and concrete information in the form of numbers and statistics and by viewing their sperm cells under a microscope. These findings have important implications for the provision of fertility awareness interventions to men and confirm that their preferences should be taken into account when developing such interventions so the information is relevant and timely.[7]

Given significant gaps in men's and women's fertility knowledge, researchers have called for the development of fertility awareness interventions. A few recent studies have tested the efficacy of interventions in increasing fertility knowledge.[7,34] These studies indicate that knowledge increases, albeit in the short-term. This research does not measure the personal impact of these fertility awareness efforts, nor the individuals' experience of undergoing these interventions. Our findings provide important insights into these under-examined areas. In particular, some of the men felt empowered after fertility counseling because they were equipped with concrete information that could inform their parenthood plans and decision-making. Even those who received unexpected bad news felt positive about the intervention. Although the potentially negative impact of fertility awareness (eg, increasing anxiety) has been studied, our study provides clear evidence of the positive impact of such interventions. Such counseling can be a cue to action to the men so they change their behavior. Some of the men said after the fertility counseling they were considering starting a family earlier than they previously intended. That said, the short follow-up period (1-2 weeks after the fertility counseling) was not long enough to

determine whether the participants' increased awareness actually resulted in behavior change. In this short-time frame one might expect increases in knowledge to be maintained but we do not know if they were maintained in the long term. Future follow-up research should examine whether this knowledge was maintained over time and whether the counseling session was indeed a cue to action, as suggested.

Lincoln and Guba's[27] guidelines and the COREQ consolidated criteria for reporting qualitative research[28] for qualitative data were implemented in the analytic process to ensure the trustworthiness of the findings. Briefly, that involved the following steps. To ensure credibility we recruited participants until data saturation was determined. The analysis and interpretation of the data were discussed over several time points with the authors from several disciplines. To allow readers to decide whether the findings were transferable, we provided information about the men who participated and the analytic process. We aimed for dependability of the findings through a detailed documentation of the analytic process. We included all study authors in the analytic process with the goal of reducing the likelihood of research bias and selectivity (meeting Lincoln and Guba's confirmability criterion). Given the co-authors' wide range of expertise, all these processes were seen as strengthening the trustworthiness of the study findings.

Our findings must be qualified based on the self-referred nature of attendance to the FAC Clinic, which points to the possibility of a potential selection bias. The men had a medium to high vocational training and no single men were interviewed in this study so our understanding of men's expectations and experience is limited to those who have a higher education and are in a heterosexual relationship. It may be that participants were hesitant to provide negative feedback about their experience. However, given that the interviewer was not based in the clinic, it is more likely that they would provide honest feedback than if they were interviewed by one of the doctors or nurses.

5 | CONCLUSION

The reasons for delayed childbearing are complex and multi-factored. Gaps in fertility knowledge may be one of these factors. The findings suggest that fertility awareness efforts should be tailored to men's preferences. There may be strength in an individualized approach where men are assessed and receive individualized fertility counseling specific to their personal fertility results in order to increase the relevance of the information. Fertility counseling could be a cue to action for men to change their behavior to increase their chances of conceiving and achieving their parenthood goals.

CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article

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How to cite this article: Sylvest R, Koert E, Vittrup I, et al. Men's expectations and experiences of fertility awareness assessment and counseling. *Acta Obstet Gynecol Scand*. 2018;97:1471–1477. https://doi.org/10.1111/aogs.13449