Perceptions of pregnancy preparation in women with a low to intermediate educational attainment: a qualitative study

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Abstract

Objective

In the promotion of periconceptional health, appropriate attention has to be given to the perceptions of those who are most vulnerable, such as women with a relatively low socioeconomic status based on their educational attainment. The aim of this study was to explore these women's perceptions of pregnancy preparation and the role they attribute to healthcare professionals.

Design

We conducted semi-structured interviews with women with a low to intermediate educational attainment and with a desire to conceive, of which a subgroup had experience with preconception care. Thematic content analysis was applied on the interview transcripts.

Findings

The final sample consisted of 28 women. We identified four themes of pregnancy preparation perceptions: (i) "How to prepare for pregnancy?", which included health promotion and seeking healthcare; (ii) "Why prepare for pregnancy?", which mostly related to fertility and health concerns; (iii) "Barriers and facilitators regarding pregnancy preparation", such as having limited control over becoming pregnant as well as the health of the unborn; (iv) "The added value of preconception care", reported by women who had visited a consultation, which consisted mainly of reassurance and receiving information.

Key conclusions and Implications for practice

The attained insights into the perceptions of women with a low to intermediate education are valuable for adapting the provision of preconception care to their views. We recommend the proactive offering of preconception care, including information on fertility, to stimulate adequate preparation for pregnancy and contribute to improving perinatal health among women who are socioeconomically more vulnerable.

Keywords

Preconception care, educational attainment, qualitative research, pregnancy outcomes, fertility, health behaviour

Introduction

Optimizing preconception health does not only reduce the risk of poor pregnancy outcomes but also the risk of developing non-communicable diseases later in life (1-3). This reduction of risk is paramount as many poor pregnancy outcomes as well as non-communicable diseases are to a great extent preventable. Despite high quality perinatal care in the Netherlands for example, perinatal mortality remains high compared to other European countries (4-6). Moreover, similar to other health outcomes there is a social gradient observable in pregnancy outcomes (7-9). People in the lowest part of the social gradient, typically people who live in a deprived neighbourhood, face substantially higher risks to have poor pregnancy outcomes (10-12). Furthermore, the uptake of obstetric care has been shown to be lower among women who are socioeconomically disadvantaged (13). Therefore, attention has to be given to women who are socioeconomically vulnerable when promoting health at the start of pregnancy. A crucial period for health promotion is the periconception period, defined as the fourteen weeks before and ten weeks after conception, due to the processes of gametogenesis, organogenesis and placental development (14).

An increasing body of evidence suggests that preconception care (PCC) interventions can contribute to better pregnancy outcomes by identifying biomedical, behavioural and psychosocial risk factors prior to conception (15, 16). However, delivery and uptake of preconception care is still low (17, 18). The improvement of the uptake of PCC and of perinatal health outcomes relies partly on the extent to which women prepare for pregnancy. Actively preparing for pregnancy is associated with positively changing lifestyle behaviours (19). The extent to which women prepare for pregnancy is related to their perceptions about pregnancy preparation. As behavioural research indicates, perceptions underpin behaviour to a certain extent, for example pregnancy related behaviour (20, 21). As such, perceptions may influence whether women would prepare for pregnancy and make use of PCC. Based on previous research, we assume that a lacking or an inadequate perception of the need of pregnancy preparation most probably leads to no, or inadequate, pregnancy preparation (22, 23). Women's lack of awareness and their perception of absence of risks have been frequently identified as barriers for PCC use (23). Little is known about the perceptions and motivations of women who have used PCC (24). Besides, most of the studies have focussed on attitudes towards PCC and on subgroups of women with a medical risk (e.g. diabetes), but less on women with a desire to conceive and their general notion of preparing for pregnancy (23, 24).

To study perceptions of pregnancy preparation, we focussed on women with desire to conceive who are socioeconomically more vulnerable for adverse pregnancy outcomes.

We used low to intermediate educational attainment as a proxy measure for low to intermediate socioeconomic status (SES). Educational inequalities, as an indicator of socioeconomic inequalities, have been demonstrated in various pregnancy outcomes, for instance birthweight (25, 26). Assessing the perceptions of women with a relatively low educational background, with and without PCC experience, will provide insights into why and how these women prepare for pregnancy and whether this includes consulting a healthcare professional for PCC. These insights are valuable for the improvement of periconception health, in part via the improvement of the uptake and delivery of PCC. Therefore, the aim of this study was to explore perceptions of pregnancy preparation of women with a relatively low educational attainment and the role they attribute to healthcare professionals. We aimed at achieving this by interviewing women with a desire to conceive, of which a subgroup had received PCC.

Methods

Study population

This study was approved by the Medical Ethics Committee of the Erasmus MC. Written informed consent was obtained from all participants. The study population consisted of two subgroups. One subgroup, the PCC-group, was recruited from the Healthy Pregnancy for All (HP4All) Preconception Care study (27). This study, conducted in 14 Dutch municipalities, aims to assess the effectiveness of a recruitment strategy for PCC and the effectiveness of individual PCC consultations. The recruitment strategy included an invitational letter for PCC from a general practitioner (GP) and/or from the municipality. Women aged 18 to 41 years who applied for a PCC consultation with their GP or midwife were asked to participate in a cohort study. For our study, a selection of eligible participants was made based on the following criteria: consent to be contacted for an additional study, having received a PCC consultation in 2014, and an indication for having a low to middle SES based on a low or intermediate educational attainment (International Standard Classification of Education up to and including level 4). The selection resulted in a sample of 36 participants eligible for an interview. The other subgroup, the non-PCC-group, was recruited using a professional recruitment service specialized in finding suitable participants for scientific research. This service has a database of people willing to participate in scientific research. From this database, participants were identified based on whether they had a low to middle SES, a low to intermediate education attainment (as explained for the PCC-group above) and a desire to conceive in the nearby future. This resulted in a sample of 18 eligible participants.
We aimed at interviewing fifteen participants (thirty in sum) in both the PCC-group and the non-PCC-group, as we expected to reach saturation of responses at that num-

ber. We were able to conduct 15 interviews in each group, but we had to exclude two participants from the PCC-group as they did not meet the inclusion criteria after all (see figure 1).

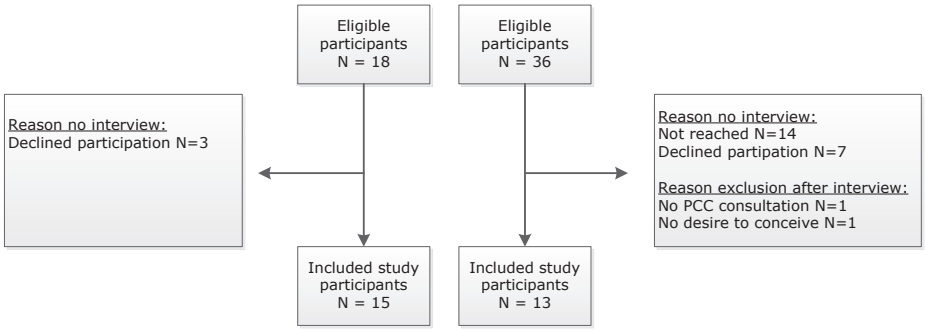

Figure 1: Enrolment of participants

As a result, we had a final sample of 28 participants. Our aim was to have a sample with a variation in participant's characteristics such as age, ethnic background and prior experiences with pregnancy.

Data collection

Semi-structured interviews were conducted in the spring of 2015 by four researchers in close collaboration. The interviews were carried out at the Erasmus MC, at participant's homes, or by telephone if preferred. The semi-structured interviews were conducted using a two-part topic list. The first part focused on perceptions and behaviour with regard to pregnancy preparation. The second part listed questions on perceptions concerning healthcare needs prior to pregnancy. For the PCC-group, this second part included questions about their experience with PCC. The interviews were audio recorded and transcribed verbatim for analysis.

Data analysis

We used an inductive process of thematic analysis as described by Braun and Clarke to identify the key themes of perceptions in the transcriptions (28). Firstly, we familiarised ourselves with the data and generated an initial coding scheme. Together, two researchers with experience in qualitative research adjusted the coding scheme through an iterative process of analysing the transcripts. We used NVivo10 software (QSR International, 2012) for the analysis. Subsequently, based on our coded fragments, themes and sub-themes were mapped in Excel. The two researchers performed this step together to discuss and refine the themes during the process. Representative citations were selected and translated to English.

Results

Study participants' characteristics

With respect to our inclusion criteria of low to intermediate education attainment, our final sample of 28 participants consisted mainly of women who had attained or were currently attaining an intermediate education (n=24). Thirteen women did not have a paying job; three of them because they had not finished their education yet. We achieved variation of other socio-demographic characteristics in our sample, with in both subgroups a similar composition: the women's age ranged from 24 to 41 years in the PCC-group (median 32) and 21 to 38 years (median 29) in the non-PCC-group; four women did not have a Dutch background in the PCC-group and five in the non-PCC-group; six women were mothers at the time of the interview in the PCC-group and eight in the non-PCC-group. The group of non-responders (referred to in figure 1) seemed to have similar background characteristics as the group of participants.

The perceptions

We identified three themes of pregnancy preparation perceptions in both groups which are perceptions about: (1) how to prepare for pregnancy? (2) why prepare for pregnancy? (3) barriers and facilitators regarding pregnancy preparation. We described one more perception theme in the PCC-group: (4) the added value of PCC.

(1) How to prepare for pregnancy?

1.1 Health related preparations

Participants from both groups mentioned similar ways to prepare for pregnancy such as; quitting smoking, moderating or abstaining from alcohol, reducing stress, the timely use of folic acid supplementation, losing weight and having a healthy diet. *"The moment I would like to become pregnant, I wouldn't go 'all out' at a party. I would abstain from drinking alcohol." (Interview 7 non-PCC-group) "First of all I would quit smoking, …. , furthermore I would eat healthy, so that the baby receives good nutrition which the baby needs." (Interview 13 PCC-group)*

1.2 Healthcare related preparations (non PCC-group)

We asked the participants of the non PCC-group about what they perceived to be the role of caregivers, especially the GP, in the period they are trying to conceive. Most participants mentioned that first and foremost it is in fact one's own responsibility to adequately prepare for pregnancy. *"First of all it depends on yourself, whether you go to the GP or midwife for information, because they won't just come to you…. but actually I don't think I would go, because I always think positive, no one thinks that their pregnancy would not go well."*

(Interview 7 non-PCC-group) These participants consider that the future mother should seek care herself when she considers this to be necessary. *"I would contact my GP because I have used contraceptives for years,* ***so I would like to know what the procedure is [emphasis added]*** *…." (Interview 11 non-PCC-group)*

The participants were nevertheless positive about the suggestion of a GP who proactively asks them about their desire to become pregnant, provided that these questions are asked when reproductive issues, such as contraception or teratogenic medications, are being discussed. "*As he [the GP] prescribes medication, he should tell you to be careful with this medication in case you want to become pregnant." (Interview 4 non-PCC-group) "I actually think that a GP, Midwife, and gynaecologist could tell you [about pregnancy preparation], because many women do not know, or are ashamed to ask." (Interview 7 non-PCC-group)* Some participants referred to the mother-to-be and the healthcare professional as having a shared responsibility for the adequate preparation of pregnancy. These participants did however also emphasize that it is the mother-to-be who eventually has to follow the advice of the healthcare professional and therefore the ultimate responsibility falls on her. *"A healthcare professional gives advice, but you have to follow that advice." (Interview 8 non-PCC-group)*

1.3 Healthcare related motivations and expectations (PCC-group)

We asked the PCC-group what their motivations and expectations were when they decided to visit a healthcare provider before pregnancy. For most participants, the PCC invitational letter, which they had received from their GP or municipality, was the trigger to make an appointment. *"We had received a letter… and then I thought let's start with this PCC consultation, and all the information that we can get is welcome." (Interview 6 PCC-group)* However, some participants already had plans to visit their GP because of pregnancy related questions. *"… I had been thinking, should I go to my GP or not, and that same week, a total coincidence, I received a letter about the start of consultations for women with a desire to become pregnant."(Interview 11 PCC-group)* Most women went without specific expectations to their PCC appointment, as they were not familiar with PCC, but they perceived it as a possibility worth exploring. *"I didn't know what it entailed, so I thought there is no harm in trying." (Interview 14 PCC-group)* Some women expected to receive information, an examination, or a general check-up.

(2) Why prepare for pregnancy?

2.1 Questions about conception and fertility

For most participants questions about conception and fertility were the major reason to consider preparing for pregnancy. For both groups, the participants' willingness to

seek pregnancy related care such as consultation from a doctor seemed to increase in case they would experience problems with becoming pregnant. *"Yes, I might go [to the GP]….. for example, if I would face difficulties getting pregnant." (Interview 3 non-PCC-group) "We already had a desire to have child for some time but still had not succeeded. Therefore, we wanted an appointment with the GP…" (Interview 13 PCC-group)* In the PCC-group, questions about fertility and fertility problems were for about half the group the main reason to actually visit the healthcare professional for a PCC consultation.

2.2 Assuring health of the mother and child

In both groups, some participants mentioned that they would consider pregnancy preparation as it may benefit their own health and the health of their future children. In response to their miscarriage for example, two participants mentioned that they would explore ways to adequately prepare for pregnancy in light of possible future pregnancies. *"Well yes [visiting a doctor] because of my miscarriage, see what is there, blood tests or something, check whether my belly is healthy, I assume it is, but you never know." [When would you do that?] "Well, anyway before you are pregnant… I think maybe a month ahead, but yeah, you cannot really determine that." (Interview 12 non-PCC-group)* The participants' perceptions of adequate preparation consisted of checking their vitamin status, as well as making sure components of oral contraceptives and tobacco smoke were, as they phrased it, "*cleared out of the body*." Working with potential harmful substances was also mentioned by a veterinary assistant as a reason to inform her employer about her desire to conceive and as a reason to have visited a PCC consultation. *"Because of my work [as a veterinary assistant] I wasn't sure about what I could and could not do…. anaesthesia, x-rays….sedation using gas, is that dangerous? these kind of questions.."(Interview 12 PCC-group)*

(3) Barriers and facilitators regarding pregnancy preparation

3.1 Facilitator

Most participants from both groups mentioned that they felt adequately prepared for pregnancy. They mentioned that ample information about pregnancy preparation is available, especially on the Internet, which enables them to adequately prepare for pregnancy. *"Yes [having sufficient possibilities to prepare for pregnancy], nowadays you can find everything on websites, health websites, Google, everywhere really." (Interview 1 non-PCC-group)*

3.2 Barriers

Despite the fact that most participants felt adequately prepared for pregnancy, many also perceived barriers in terms of having limited control over their chances to conceive and the course of their pregnancy. *"You just hope, you cannot say 'I want', but you actually hope that God lets you become pregnant". (Interview 2 non-PCC-group)* They also mentioned

that they had limited control over their ability to ensure good health for their future children during pregnancy. *Well as far as I know you cannot do anything about it [actual pregnancy going well], but you can help it a bit." (Interview 1 non-PCC-group)* The latter perception was more pronounced in the non-PCC-group than in the PCC-group.

Some participants, mainly of the non-PCC-group, mentioned that they experienced preparing for pregnancy and accessing pregnancy-related information as stressful and burdensome. *"I do not go looking for answers on the internet, because then I go crazy. (Interview 14 non-PCC-group)* This was also mentioned as a reason not to explore or to "*give up*" on ways to prepare for pregnancy, such as giving up folic acid supplementation when it takes too long to become pregnant, finding it difficult to commit to healthy food not knowing how long it takes to become pregnant, and not succeeding in quitting smoking before and during pregnancy. *"I tried taking folic acid for a period, but you know, the longer it took [getting pregnant] the more I forgot taking it. Thus, yeah at a certain time you just stop taking it. (Interview 14 non-PCC-group)" "Yeah I tried quitting smoking but it took so long, so .. yeah… Well my mother also smoked during her pregnancy and here I am, so yeah…" (Interview 10 non-PCC-group)* In the PCC-group, a few participants also referred to the difficulty of committing to for instance a healthy lifestyle, since it may take a while to become pregnant.

Some participants from the non-PCC-group reported that pregnancy was a "natural" event that does not require any special preparation or planning if one is not ill. *"No, no [not going to a doctor before pregnancy unless there is a problem with becoming pregnant], it is different when I would be pregnant, then I would ask right away what I could do." (Interview 3 non-PCC-group) "Otherwise you are just planning all the time, I am against that, you should not plan something like this [pregnancy], if I prepare by for example eating healthy, then I am already planning a bit." (interview 3 non-PCC-group)*

Participants reported to perceive more urgency to be healthy and visit a healthcare provider once they would know they were actually pregnant rather than when they were preparing for pregnancy. *"…when you know you are pregnant, then you can begin, because then you know and then you have to do it [live healthy]." (Interview 12 non-PCC-group)* Furthermore, some women were sceptical about the effects of unhealthy behaviour, such as smoking and drinking alcohol, on pregnancy and the health of the unborn. *"But I did stop drinking alcohol. Regarding smoking, yes I'll consider that when I really am pregnant….I have started to smoke a bit less." (Interview 6 non-PCC-group)* Accordingly, there was a wide range in perceptions with regard to what pregnancy preparation would actually entail ranging from quitting smoking prior to pregnancy to lowering the number of cigarettes during

pregnancy, and ranging from trying to have a healthy weight before pregnancy to not paying attention to weight at all because "*you get fat anyway during pregnancy*".

(4) Added value of PCC

The perceived added value of PCC was only assessed in the group that received a PCC consultation. We asked whether the participants felt that PCC had influenced their pregnancy preparation. Most participants reported that they were already familiar with the information and advice that was provided during the consultation. *"No, it did not really [change anything], but it was actually just a confirmation that the things I did and read were right." (Interview 7 PCC-group)*

However, a few participants mentioned that it changed their perceptions of pregnancy preparation, for example by learning about the importance of folic acid supplementation and quitting smoking. In addition, some participants reported that it influenced their behaviour, e.g. drinking less alcohol and having a healthier diet. "*Yes, I don't drink [alcohol] so much anymore at parties, less alcohol let's put it that way. Not that I drink so much but now I will drink with moderation" (Interview 11 PCC-group)*

When we asked how they valued the PCC consultation, almost all participants were positive about their experience with PCC. They explained the value of PCC in terms of reassurance and confirmation, or receiving information and answers to questions. Knowing now what the consultation entailed, most participants reported that in hindsight they would have visited a PCC consultation again. *"Yes, reassurance, I could ask more questions, I received a lot of information, heard how it all goes, so yes that was nice." (Interview 9 PCC-group)*

Discussion

This study provides new insights into the perceptions on pregnancy preparation of women with a low to intermediate educational attainment. We found that the participants predominantly associate pregnancy preparation with fertility and conception. Many participants perceived limited control over the chance of conception and reported to be motivated to seek care in case of fertility concerns. This finding is in line with the findings of van der Zee, de Beaufort (21), Tuomainen, Cross-Bardell (29) and has been reported in the systematic review on PCC barriers and facilitators of Poels, Koster (23). Our study shows that women with a low to intermediate educational attainment and a desire to become pregnant put an emphasis on fertility and conception during the period they are trying to conceive. As women are more likely to engage in

pregnancy preparation in case those issues that are relevant to them are addressed, we recommend making advice on fertility an important theme of PCC. Correspondingly, PCC could also be integrated in fertility care.

Most participants mentioned relevant and important health related ways to prepare for pregnancy such as the importance of having a good lifestyle and smoking and alcohol cessation. Despite this awareness there were also preconception care related topics that we did not find in our data. These include topics such as over-the-counter drugs, immunizations, sexual risk behaviours, family history, chronic illness, and mental health which are typically included in PCC (16, 30). Frey and Files have also reported on this awareness of important pregnancy related issues on the one hand and what they call "knowledge gaps" on the other hand (31).

Our results suggest that awareness and knowledge alone about adequate pregnancy preparation, e.g. smoking cessation, does not necessarily lead to actual pregnancy preparation, e.g. actual smoking cessation. For example, consider the following response *"Yeah I tried quitting smoking [awareness] but it took so long, so .. yeah…"[actual behaviour] (Interview 10 non-PCC-group) and "I tried taking folic acid for a period [awareness], but you know, the longer it took [getting pregnant] the more I forgot taking it [actual behaviour] (Interview 14 non-PCC-group)."* In other words, we suggest that poor pregnancy preparation is not only a matter of not knowing what to do, as participants typically displayed awareness of and knowledge about pregnancy preparation, but arguably also a matter of not experiencing the urgency to do what is known. Some women for example, were sceptical about the effects of unhealthy behaviour, such as smoking and drinking alcohol, on pregnancy and the health of the unborn and therefore did not stop smoking or drinking in the preconception period. However, the expressed scepticism could also be a form of self-justification. Further research should be done on this gap between knowledge about pregnancy preparation and actual pregnancy preparation in order to better understand, encourage and adequately help women with a desire to conceive to put in to practice the knowledge they have.

In addition, most participants felt sufficiently able to prepare for pregnancy because they could find information, especially on the internet, on pregnancy preparation, when deemed necessary. A conjecture, based on these outcomes, is that the educational background of our participants, and possibly a lower health literacy often associated with having this background, may lead to an underestimation of perinatal risks and an overestimation of abilities to reduce these risks. We based our assertion on responses such as "*Well my mother also smoked during her pregnancy and here I am, so yeah…" (Interview 10 non-PCC-group).* In line with this conjecture, Lupattelli et al. found that low health-lit-

eracy women were more inclined to underestimate the detrimental effects of smoking during pregnancy (32). Moreover, Endres, Sharp (33) have reported on an association between low health literacy in women with pregestational diabetes and a reduced likeliness to prepare for pregnancy, such as taking folic acid supplementation and seeking medical advice before pregnancy. However, more research needs to be done about the relation between health-literacy and the estimation of pregnancy related risks to better understand whether and how health-literacy influences pregnancy preparation. In summary, taking up research on risk estimation is particularly important as women with lower education are more vulnerable to have adverse pregnancy outcomes (25, 26). Furthermore, women living in socioeconomically deprived neighbourhoods have more preconceptional and perinatal risk factors for adverse pregnancy outcomes (34, 35).

Our results show that the participants from the non-PCC-group were open to receiving information about pregnancy preparation from a healthcare professional provided that this information is presented in relevant situations, such as prescribing potential harmful medications. This is in line with the results of de Jong-Potjer et al. who found that women were interested in PCC-consultation of their GP should they decide to have children (36). We therefore recommend healthcare professionals to proactively integrate PCC in their consultations, in particular when pregnancy affecting issues are being discussed. This is warranted as most participants indicate they would not seek PCC without a, in their view, compelling reason to do so. This is in line with the current limited use of PCC and with the results of the PCC-group in which most women also had a compelling reason to seek PCC. However, prudence is required as some participants perceived planned pregnancy preparation as burdensome and stressful. Consideration has to be given to these feelings of burden and stress, as they can become barriers to prepare for pregnancy and seek PCC. The ‘naturalness’ of pregnancy was also mentioned as a reason not to prepare for pregnancy. This concern regarding naturalness was also reported in the systematic review by Poels, Koster (23). Efforts need to be made to clarify that adequate pregnancy preparation is not at odds with the naturalness of pregnancy.

A remarkable result of our study was the PCC-group’s experience of modest but relevant added value of having visited a PCC consultation. This experience may result from the fact that women who visited a PCC consultation may typically be women who were already motivated to prepare for pregnancy and therefore were relatively well-informed. This assertion is supported by the study of Barrett, Shawe (22) who describe different groups of women with three different levels of investment in pre-pregnancy healthcare being the prepared group, the poor knowledge group and the absent pre-pregnancy period group. To increase a sense of relevancy, they argue that individual

groups will likely need different PCC approaches. We also recommend a custom-made approach based on the perceptions, abilities and needs of women.

The fact that half of the participants did visit and the other half did not visit a PCC consultation offered a unique opportunity to explore pregnancy preparation perceptions in both groups. It is important however to emphasize the explorative nature of this research, which is not meant to draw conclusions from any comparison between the two groups. Neither did we intend to draw conclusions on differences related to the level of educational background.

A limitation of our study is that our participants' intention to get pregnant differed (i.e. actively trying to conceive, intention in the nearby future, or only an intention at the time of PCC), which could have influenced their current perceptions. In addition, participants of the PCC-group were included in the broader HP4ALL-study. This may have increased the possibility of participants giving socially desirable answers. However, given that most participants felt unhindered to express only a modest but relevant added value of the PCC-consultation, we assume that participants felt free to give their own opinion during the interview. Participants could also have been influenced in their responses by the different interview settings (i.e. on site, at home, and via telephone), yet we have not been able to detect such differences. We included mainly women with intermediate educational attainment and only a few women with low educational attainment, which may have affected our results. A final limitation is that our study was done in one country with a specific, mainly publicly financed, healthcare system that provides for primary care, which includes PCC. This may influence the perceptions people have about health in general and on pregnancy preparation in particular. That is, perceptions of pregnancy preparation may differ in situations where people have to carry the full financial burden of PCC from situations where this is not the case.

Conclusions

Our study provides insights into the perceptions about pregnancy preparation of women with a low to intermediate educational attainment. Understanding the perceptions of this group is of key importance as they have higher risk for adverse pregnancy outcomes. Based on our results, we recommend the proactive offering of custom-made PCC including information on fertility. Despite mentioning relevant ways to prepare for pregnancy, participants did not mention important topics such as over-the-counter drugs, immunizations, sexual risk behaviours, family history, chronic illness, and mental health. More effort, e.g. in the form of information and education, is required to

bring these topics to the attention of women with a desire to become pregnant. In addition, more research needs to be done about how women can be motivated to prepare for pregnancy as knowledge about pregnancy preparation alone does not necessarily lead to actual pregnancy preparation. Special attention needs to be given to whether and if so, how low-health literacy influences pregnancy preparation. As participants were open to receiving information about pregnancy preparation provided that this information is presented in relevant situations, we also recommend that healthcare professionals proactively integrate PCC in their consultations, in particular when pregnancy affecting issues are being discussed.

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