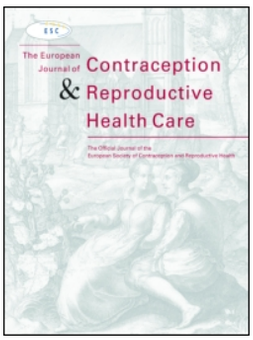

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Current practice of preconception care by primary caregivers in the Netherlands

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ABSTRACT

Objectives: Over the past decade the value of preconception care (PCC) consultations has been acknowledged. Investments have been made to promote delivery and uptake of PCC consultations in the Dutch primary care setting. We assessed current activities, perceptions and prerequisites for delivery of PCC in primary care. **Methods:** A questionnaire was compiled and distributed by mail or e-mail among 1682 general practitioners (GPs) and 746 midwives in the Netherlands between 2013 and 2014. **Results:** The questionnaire was completed by 449 GPs and 250 midwives. While GPs and midwives were frequently asked about preconception risks, explicit requests by patients for a PCC consultation were less frequent. Although caregivers gave information on preconception risk factors, only a minority recommended PCC in the form of a dedicated consultation. Such consultations occurred infrequently. Risk factor assessment varied between GPs and midwives. Respondents' perceptions of PCC consultations, however, were generally positive. A small proportion believed that PCC medicalised pregnancy, and recognised barriers in actively raising the topic of patients' pregnancy wishes. More training, staff, promotion of PCC and adequate reimbursement were prerequisites for future delivery. GPs differed in their opinion of whether they or midwives were primarily responsible for PCC consultations. Midwives, however, saw themselves as responsible for providing PCC consultations. **Conclusions:** Primary care is underserving prospective parents with regards to PCC consultations. Targets to increase delivery of systematic PCC are: (1) promotion during routine care; (2) increased use of tools; (3) increased collaboration among primary caregivers; (4) reduction of caregivers' negative perceptions; and (5) tailoring PCC consultations to suit women's preferences.

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Introduction

Preconception care (PCC) is care for all women or couples contemplating pregnancy that aims to identify and modify biomedical, behavioural and (psycho)social risks to parental health and the health of the future child through counselling, prevention and management.[1] The number of PCC risk factors is abundant.[1,2] An example of a PCC measure applicable to every woman is folic acid supplementation. PCC measures depend on the risk profile of the woman or couple. An example is strict glycaemic control in the case of diabetes. Intervention before conception gives time to tailor a PCC health plan to individual needs in order to optimally reduce risks before the critical phase of placentation and organogenesis. This phase is crucial to the course of pregnancy and perinatal health outcome. PCC has therefore been internationally recognised as a method to improve perinatal health.

In the Netherlands, improvement of perinatal health is highly relevant. The perinatal mortality rate in the Netherlands is high and has declined more slowly than in other European countries over the past decade.[3] PCC is regarded as a feasible measure with great potential to improve perinatal health, because couples in the general Dutch population are known to have a high prevalence of preconception risk factors but generally plan a pregnancy.[4]

PCC can be delivered in many ways: the ideal approach depends on the local health system.[5] In the Netherlands, delivery of PCC in the form of an individual PCC consultation is advocated.[6] Individual consultations provide the opportunity for professional-led broad risk assessment to ensure that risk factors are not overlooked. Furthermore, it encourages the delivery of interventions in a tailored fashion and monitoring of improvement in PCC health by a professional.

The effectiveness of PCC is debated. Evidence for PCC is mostly based on association studies of preconception risks and the occurrence of adverse pregnancy outcomes. Theoretically, eliminating risk factors should lead to improvement of preconception health (e.g., risk of maternal smoking is avoided after smoking cessation). Although evidence has been established for many single preconception interventions (e.g., folic acid supplementation), the effectiveness of an integrated approach in which interventions are delivered as a set or programme has not yet been established.[7] The introduction of individual PCC consultations has been advocated in the Netherlands since 2007, based on the available evidence for risk factors and evidence for single preconception interventions.

As in other countries with strongly developed primary care settings, in the Netherlands general practitioners (GPs) and midwives are seen as responsible for delivering individual PCC consultations to the general public. Several prerequisites

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for delivery of PCC by GPs and midwives have been met over the past decade in order to enable this. First, guidelines for individual PCC have been developed.[8] Second, different standardised risk assessment tools have been developed.[9,10] Third, different pilot projects in the GP and midwife settings have taken place which show positive attitudes of Dutch women towards PCC consultations.[11–13] Lastly, prior audits show positive ambitions of GPs and midwives to deliver PCC. Despite the aforementioned developments, PCC consultations remain scarce.[14–16] No studies have, however, assessed what primary caregivers actually do with regard to PCC consultations. This study therefore aimed to establish to what extent Dutch GPs and midwives currently promoted and provided individual PCC consultations. The study also aimed to evaluate caregivers' perceptions about PCC and their prerequisites for future delivery. These perceptions and prerequisites are potential targets to increase the delivery of individual, standardised PCC consultations in primary care.

Methods

Design and setting

A cross-sectional audit was conducted as a pre-intervention study prior to the implementation of PCC consultations within the Healthy Pregnancy 4 All (HP4All) PCC substudy.[17] The central aim of the HP4All PCC substudy is to develop a standardised approach to PCC consultations. This standardised approach requires GPs and midwives to perform PCC using a validated questionnaire and according to protocols.

The present study designed a survey to address current activities, perceptions and prerequisites regarding delivery of PCC and was carried out among primary caregivers within the 50 municipalities identified at the launch of the HP4All PCC substudy. These municipalities were identified because they have the highest perinatal mortality and morbidity rates in the country. The municipality selection process is described elsewhere.[18] The municipalities were categorised into 14 intervention municipalities and 36 non-intervention municipalities. The survey was carried out as described below.

All midwife practices within the 50 municipalities were located through the midwives' professional organisation. Practices were contacted and asked for individual contact information of affiliated midwives. If provided, midwives were personally invited to participate; otherwise, the contact person was asked to distribute the surveys among all midwives in the practice.

All GP practices were located within the 14 intervention municipalities and in a random sample of 50% of the postcodes in the 36 non-intervention municipalities. This sample was drawn because it was estimated that 50% of the postcodes would provide a sufficient number of respondents to fulfil the aims of the study. Second, the sample was drawn for feasibility reasons: in the absence of an up-to-date list of GP practices per postcode, locating practices would have involved a time-consuming internet search. It would have been too onerous to perform an online search for all postcodes. Similar to the procedure to recruit midwives, GP practices in the selected areas were contacted and asked for individual contact information of affiliated GPs. If provided, GPs were personally invited to participate; otherwise, the contact person was asked to distribute the questionnaires among all affiliated GPs in the practice.

Data collection

The authoring team compiled a questionnaire of 23 open-ended or closed questions within three domains: (1) respondents' characteristics; (2) current practices assessed over the two months prior to filling in the questionnaire; and (3) perceptions. The questionnaire was piloted to assess whether it was understandable and covered all potential answer categories. This was done by asking two GPs, a midwife and an obstetrician to fill in the questionnaire. Adjustments were made accordingly. A summary of the questionnaire is presented in Figure 1; the full questionnaire is available on request. The questionnaire was available on paper and via an internet link sent by e-mail. Respondents were invited to participate by phone or by letter. In the case of non-response a reminder was sent. Data collection was performed between February 2013 and February 2014. The questionnaire was distributed prior to implementation of PCC in the intervention municipalities of the HP4All PCC substudy.

Analysis

Results were analysed using SPSS 20.0 software (Statistical Package for Social Sciences, Chicago, IL, USA) and descriptive statistics, and χ [2 or Fischer's exact test where applicable to test for significant differences in proportions. Significance was defined as a p-value <0.05.

Results

Respondents

Of the 1682 GPs, 449 filled in the questionnaire (individual response rate 27%). These responses accounted for 268 of 763 GP practices (practice response rate 35%). Of 746 midwives, 250 filled in the questionnaire (34%), accounting for 108 of 187 approached midwife practices (practice response rate 58%). Table 1 presents the characteristics of the respondents. Respondents were representative of Dutch GPs and midwives, except for a slight overrepresentation of female GPs, part-time employed GPs, and self-employed midwives. PCC training was reported by 15% of GPs and 63% of midwives; 20% of the GPs and 67% of the midwives rated their knowledge of the PCC guideline as good (rather than moderate or not at all).

Current PCC practices

Table 2 shows the current demand, offer and delivery of PCC consultations.

Demand

Both GPs and midwives had been asked questions about preconception risks in the previous two months: GPs more often than midwives (57% vs. 40%; $p<0.005$). There were fewer specific requests for a PCC consultation (23% of GPs and 28% of midwives).

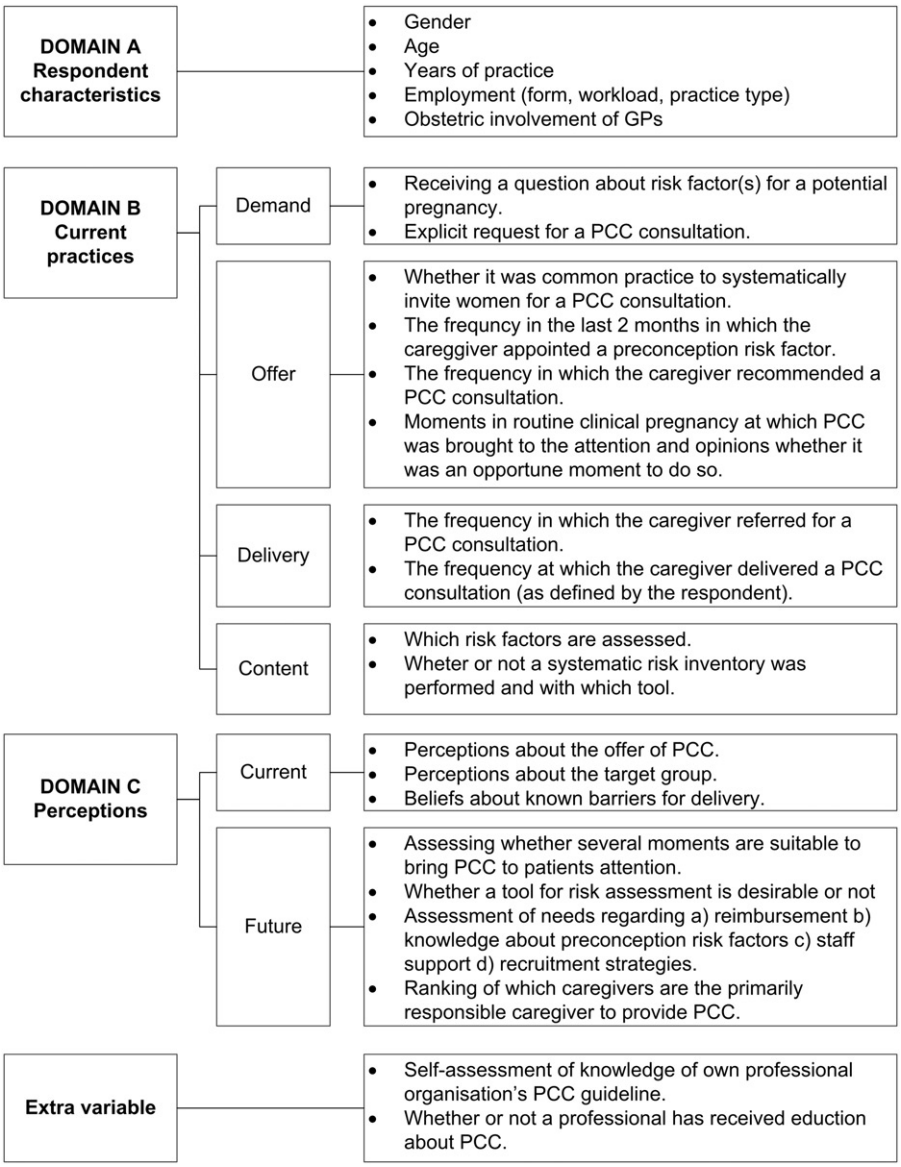

Figure 1. Domains, constructs and items of the questionnaire.

Table 1. Characteristics of the respondents.

	GPs ($n = 449$)			Midwives ($n = 250$)		
Characteristic	*n*	%	Ref.	*n*	%	Ref.
Sex						
Male	205	45.7	57.4	4	1.6	1.6
Female	236	52.6	42.6	244	97.6	98.4
Age in years, median (range)	47 (24–66)	–	49 (27–87)	35 (21–65)	–	36 (21–65)
Type of employment						
Self-employed	376	83.7	89.9	182	72.8	51.2
Employed by another self-employed GP/midwife	45	10.0	11.1	20	8.0	6.2
Employed by a primary care practice or organisation	NA	NA	NA	24	9.6	2.3
Employed by a hospital	NA	NA	NA	6	2.4	27.7
Locum/temporary	NA	NA	NA	14	5.6	12.7
Employment						
Part time	343	76.4	57.4	143	57.2	53
Full time[a]	102	22.3	42.6	105	42.0	47.1
Type of practice						
Solo	114	25.4	25	8	3.2	5.4
Duo	110	24.5	37.9	23	9.2	15.0
Group	212	47.2	36.4	208	83.2	79.6
Other	0	0	0	3	1.2	0

Percentages do not always add up to 100% due to missing values.
Ref.: reference characteristics of GPs and midwives in the Netherlands in 2012, provided by the Netherlands Institute for Health Services Research (Nivel); NA: not applicable.
[a]Full time is defined as 40 h per week.

Table 2. Demand for and offer and delivery of PCC.

Variable	GPs ($n = 449$)		Midwives ($n = 250$)		
	n	%	*n*	%	*p*-value[a]
Demand for PCC					
Received a question about risk factors for potential pregnancy[b]	257	57.2	101	40.4	<0.005
Received an explicit request for a PCC consultation[b]	104	23.2	69	27.6	0.183
Offer of PCC					
Pointed out a risk factor in a future pregnancy[b]	299	66.6	107	42.8	<0.005
Policy to bring a PCC consultation to patient's attention at an appropriate moment	379	84.4	204	81.6	0.338
Explicitly recommended a PCC consultation[b]	74	16.5	54	21.6	0.086
Systematically invited patients for a PCC consultation (e.g., by direct mailing)	2	0.7	4	1.6	0.193
Delivery of PCC					
Provided PCC consultations[a]	122	27.2	51	20.4	0.049
Referred patients for PCC consultation to other health care workers or colleagues[a]	64	14.3	25	10.0	0.111

[a]χ^2 test was applied; when data in cells were <5, Fischer's exact test was applied.
[b]In the past 2 months.

Offer

In the previous two months, 67% of GPs and 43% of midwives reported that they had mentioned to patients risk factors for a future pregnancy. GPs did this significantly more often than midwives ($p < 0.005$). The majority of GPs (82%) and midwives (84%) routinely mentioned the availability of PCC consultations during their clinical practice. Opportunities that both caregivers took to mention the availability of PCC were if women mentioned a desire to become pregnant (66% of GPs and 66% of midwives), during care after a miscarriage (45% of GPs and 54% of midwives), and when adverse pregnancy outcomes were apparent (36% of GPs and 48% of midwives). Fifty percent of midwives mentioned PCC consultations (or interconception care) during the routine postnatal check-up a few weeks after delivery. Among activities in the daily practice of GPs, a majority reported the availability of PCC during consultations about hereditary conditions (57%). Opportunities in general practice that were reported to be taken by a minority of GPs were: prescription of a medication (25%), when contraception was discussed (14%), and during routine follow-up of chronic medical conditions (16%). A few GPs (<2%) reported that they mentioned the availability of PCC if their patient was getting married, feared encountering problems during pregnancy, requested travel vaccination, was undergoing evaluation of chronic medication use or a Pap smear, and if sexually transmitted infections or sexual matters were addressed. However, explicit invitation for a PCC consultation had occurred less frequently in the two months prior to the questionnaire (by 17% of GPs and 22% of midwives). Very few GPs and midwives systematically sent out invitations for PCC consultations to women in their patient record system.

Delivery

A small proportion of GPs and midwives had carried out PCC consultations in the two months prior the questionnaire (27% of GPs and 20% of midwives). The proportion of GPs who performed a PCC consultation was significantly higher compared with the proportion of midwives.

Content of delivered PCC consultations

Respondents were asked how they organised the delivery of PCC. Twenty percent of GPs ($n = 91$) and 49% ($n = 123$) of midwives reported providing PCC consultations themselves according to their professional guideline (i.e., their PCC constituted a risk assessment across the domains presented in Figure 2). We restricted our analysis to the content of PCC reported by these respondents. Figure 2 presents the PCC risks that are routinely assessed by respondents who reported carrying out PCC consultations themselves. Pap smears, eating disorders, vitamin A, low body mass index, rubella immunisation, work exposures and stressors were assessed by <40% of GPs. Domestic exposures, presence of uterine anomalies, and risks due to travel received less attention from both GPs and midwives. For the majority of risk factors, a significantly larger proportion of midwives reported assessing them compared with GPs. This could be inherent to the fact that GPs are the medical file keepers within the system. Content of delivered PCC is also influenced by the use of tools such as screening questionnaires, as recommended in guidelines. Of those included in the analysis shown in Figure 2, 25% of GPs and 94% of midwives reported using a tool for delivery of PCC consultations. The tools they reported using were the web-based questionnaire *ZwangerWijzer* [19] (12% of GPs and 83% of midwives), its complementary archive software programme, *PreconceptieWijzer* [9] (12% of GPs and 11% of midwives), the questionnaire provided by the professional organisation of midwives (39% of midwives), a self-assembled intake form (1% of GPs and 3% of midwives), or a questionnaire integrated into the patient record system (2% of midwives).

Current perceptions about PCC

Figure 3 presents the agreement of respondents with statements about PCC. It shows that the majority of respondents had a positive attitude towards PCC. Potential views that could be a barrier to the delivery of PCC by GPs were that PCC consultations should only be offered to women with high risks (30%), that PCC medicalised the preconception period (31%) and that offering PCC without women asking for it was objectionable (23%). Twenty-three percent of midwives also agreed with the last statement.

Perceptions about PCC in the future

Respondents said they were willing to mention the availability of PCC during routine care, if they did not already do so. They did not, however, favour discussing PCC during contraception counselling. The majority of caregivers who did not use a tool would be willing to use one in the future (90% of GPs and 71% of midwives).

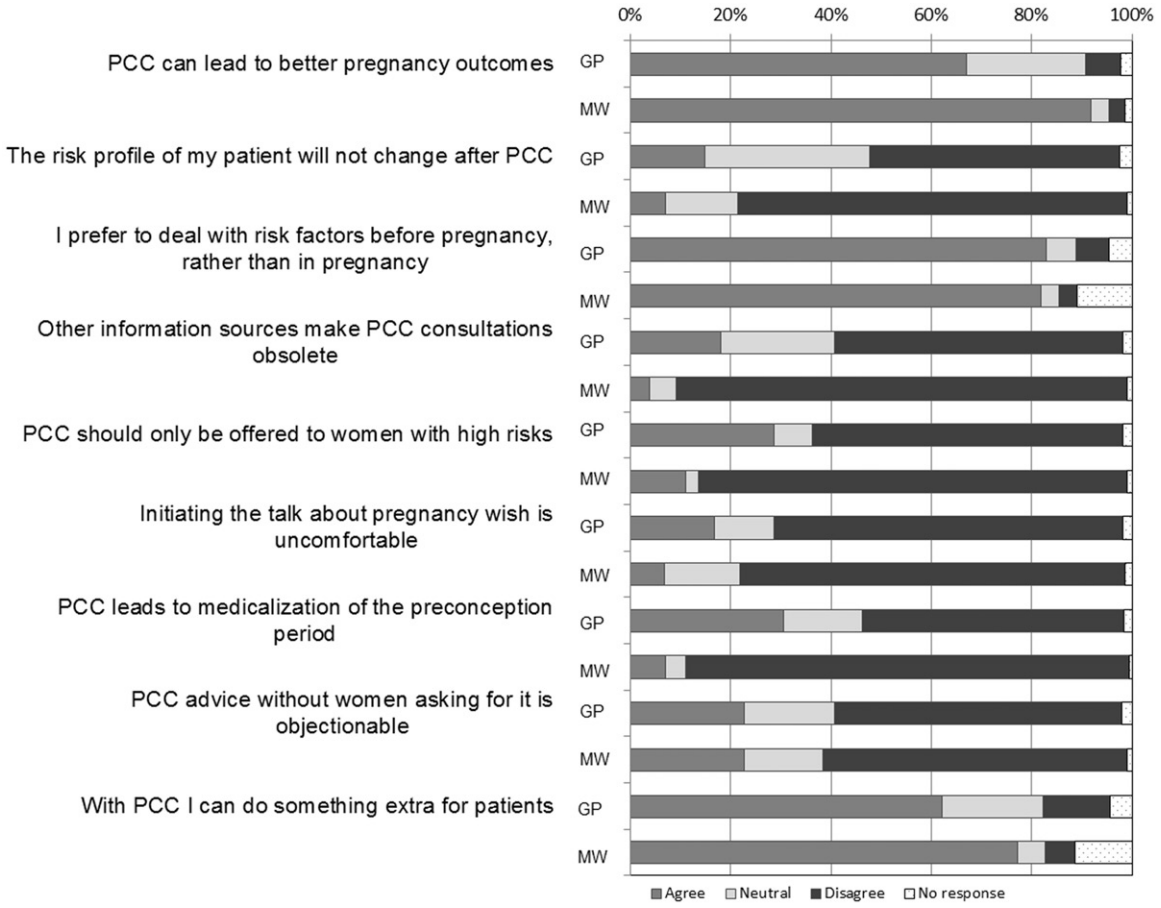

Figure 2. Elements of PCC and proportion (%) of GPs ($n = 91$) and midwives ($n = 123$) who included these risk factors in their standardised PCC consultation.

Figure 4 shows the prerequisites for PCC delivery in the future. All items were prerequisites for a substantial proportion of GPs and midwives. Respondents especially agreed that adequate reimbursement and more promotion of PCC were prerequisites. Respondents were asked which caregivers (GPs, midwives, gynaecologists or adolescent health care physicians) should be primarily responsible for systematic delivery of PCC consultations. Among midwives, the majority (67%) thought that midwives were primarily responsible. There was disagreement among GPs, as 42% thought that midwives should be primarily responsible for delivery of PCC and 40% thought that GPs should be responsible for its delivery. The remaining GPs and midwives thought that adolescent health care professionals and gynaecologists were primarily responsible for the delivery of PCC.

Discussion

Findings and interpretation

This audit shows that activities of GPs and midwives in PCC delivery mostly revolve around answering questions and pointing out risk factors when asked by a patient. The step to a dedicated, standardised PCC consultation is made less frequently. Approximately one in four GPs, and one in five midwives, had given a PCC consultation in the two months prior to the survey. Given the total number of pregnancies in the Dutch perinatal registry within the selected regions in 2013 (72,591 births in the postcodes of invited midwife respondents, 35,186 births in the postcodes of invited GP respondents), the potential population for PCC in the two months could have been 13 women per midwife or 3.5 women per GP (assuming a planned pregnancy rate of 80% and an equal distribution of conceptions throughout the year). In practice, however, the potential number of PCC consultations in the GP setting is likely to be higher, as GPs have more contact with non-pregnant women and opportunities in daily practice to address PCC compared with midwives. Half the midwives and approximately 20% of GPs performed PCC in a standardised manner. We conclude that only a minority of couples contemplating pregnancy are currently being offered PCC consultations.

Strengths and weaknesses of the study

We believe that the strength of this study lies in the assessment of performed activities during a set time period. These activities may be viewed in light of the demand caregivers receive and how they promote PCC.

A difficulty in assessing PCC activities is that caregivers have different understandings of the content of PCC. Therefore, we first chose to assess the extent to which PCC activities were performed according to caregivers' own definition of PCC. We then chose to assess the proportion of caregivers who conducted PCC systematically as stated in the guidelines. Applying this definition in an earlier phase would have underestimated PCC activities. On the other hand, we regret that we could not assess the actual performance of systematic PCC consultations and the content of PCC delivered by caregivers that did not adhere to the guidelines.

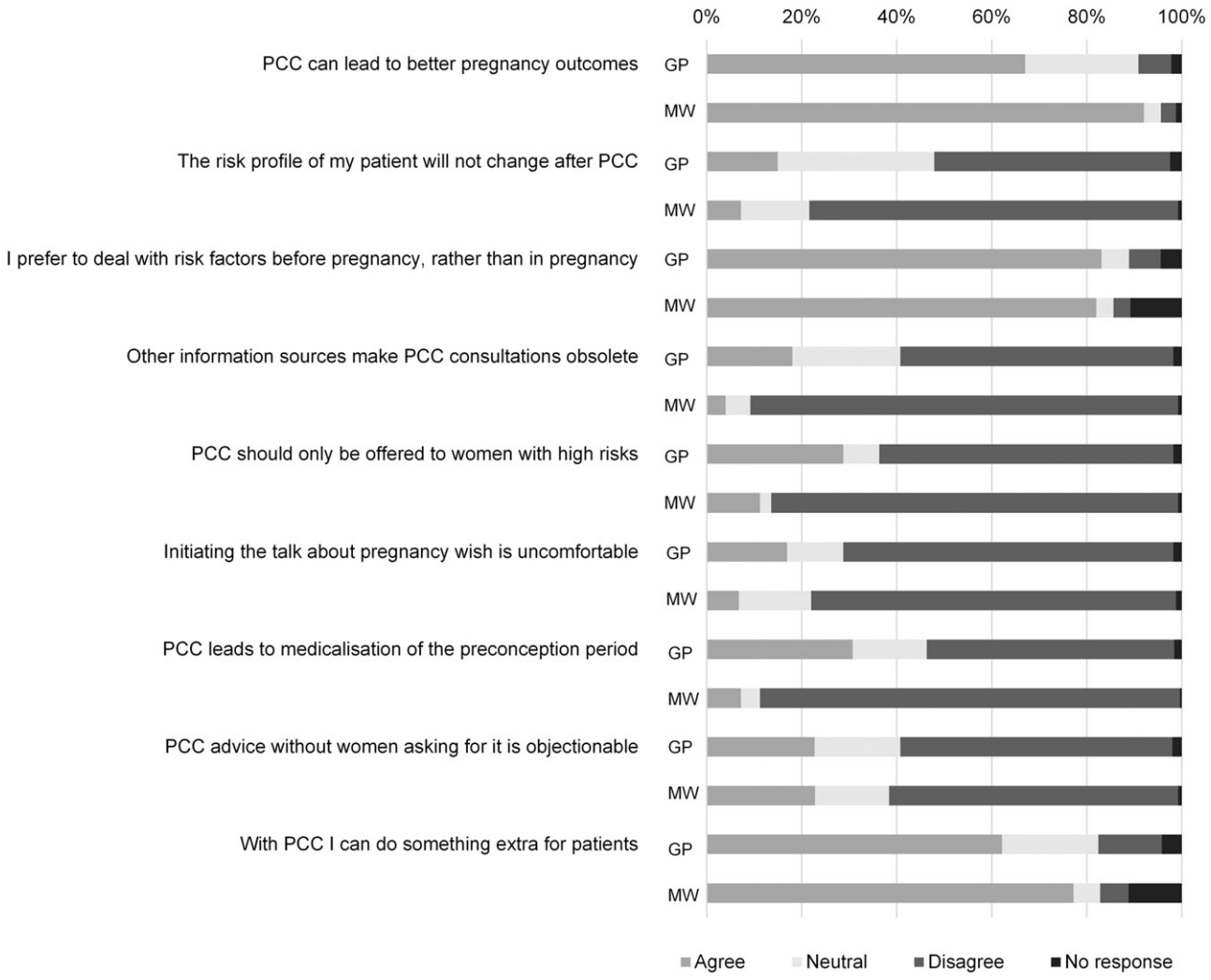

Figure 3. Views regarding PCC among GPs and midwives (MW).

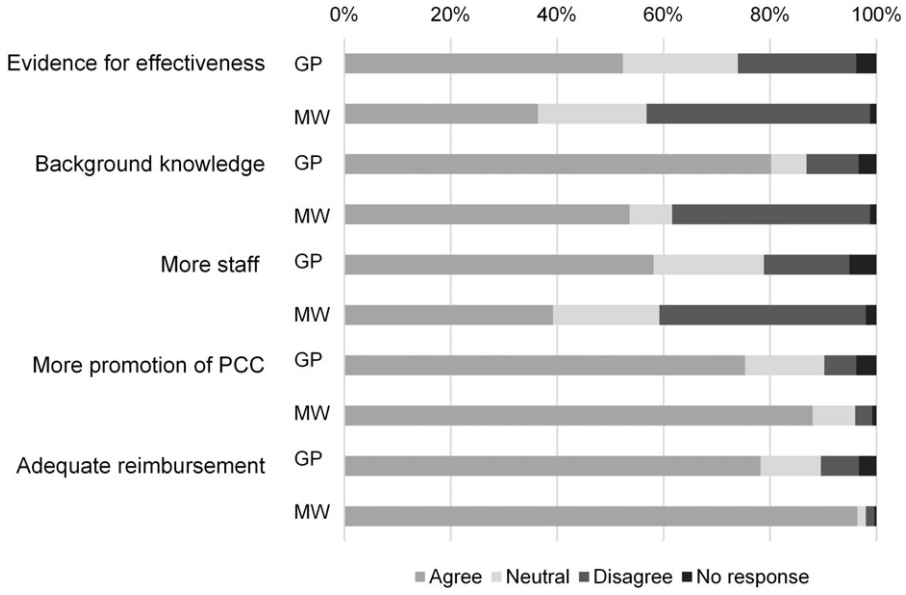

Figure 4. Prerequisites for delivering PCC in the future among GPs and midwives (MW).

This study had a moderate response rate. This might have been influenced by our strategy to approach individual participants via located GP and midwife practices. Often one person declined participation for all caregivers in a practice. In cases where there was no willingness to provide contact information of individual caregivers, we had to rely on practices for internal distribution of the questionnaires (and reminders). This also made non-response analysis infeasible.

Other recurring reasons for non-response were personal factors, a policy not to participate in studies in general or from a non-affiliated centre.

We cannot exclude the presence of a selection bias, as it is feasible that caregivers with a higher affinity for PCC were more motivated to participate in the survey. Caregivers' interest might have been influenced by simultaneous conversations about participation in the HP4All PCC substudy that took place in 14 of the municipalities.[17] These municipalities provided 36% of the GP respondents and 53% of the midwife respondents, respectively. Response rates were 35% among GPs and 56% among midwives in the HP4All municipalities vs. 23% of GPs and 21% of midwives in the remaining municipalities. Subgroup analysis was performed to ensure that the design did not affect the results. There were no significant differences in actual activities regarding PCC.

A limitation in our design was that we relied on self-reported delivery of PCC consultations. Research in medical files would have been more reliable but was not feasible.

Differences in results and conclusions in relation to other studies

Previous studies in the Netherlands regarding delivery of PCC have been conducted before the advocacy of individual, standardised PCC by the Dutch health board in 2007.[6] The aim of these studies was mainly to assess perceptions and attitudes about delivery of PCC among GPs and midwives. The results showed that GPs and midwives occasionally provided a recommendation about a single PCC risk.[14–16] The studies, however, do not provide data about the frequency of PCC activities and the extent to which PCC consultations were systematic. Therefore, we cannot reflect on whether delivery of standardised PCC consultations has changed over time.

Comparison of activities of primary caregivers in other countries is limited to a few studies.[20–23] Again, PCC in these studies seems to be limited to provision of one or more single pieces of advice rather than a standardised, dedicated and systematic consultation. PCC should be seen in light of countries' policies. The Netherlands might be unique in its clear advocacy of standardised PCC consultations in primary care by the Dutch health board and in professional guidelines for GPs and midwives.[6,8,24] This possibility is supported by a recent review of PCC policy in six European countries.[25]

Other studies report the number of pregnancies exposed to PCC.[26–28] In our opinion, this number does not reflect implementation of PCC by caregivers because this number only reflects a part of the actual delivery of PCC. It does not include PCC received by couples who did not conceive or whom were offered PCC but did not utilize the service. In order to assess overall PCC activities we advocate evaluation from the point of view of both delivery and receipt.

Relevance of the findings: implications for clinicians and policy-makers

We recommend increasing PCC activities. With regard to everyday practice, GPs and midwives should be more proactive and explicit about the availability of PCC consultations during appropriate moments in routine care. As midwives have fewer opportunities in daily practice to inform non-pregnant women about PCC than GPs, we recommend that GPs and midwives collaborate. This could also be a solution for GPs who do not deliver PCC themselves. Increasing the use of tools can promote uniformity of PCC consultations. Training, reimbursement, more staff resources and recruitment strategies are prerequisites that should be met. Among prerequisites, more evidence for the effectiveness of PCC was mentioned. This perception is in contrast with the abundant amount of evidence for preconception risk factors, which prompted the Dutch health board to decide that individual PCC should be delivered. Another perspective could be that it is unethical not to inform prospective parents about preventive measures. Training, guidelines and advocacy to deliver PCC by a professional organisation may reduce negative perceptions about the effectiveness of PCC.

Future research

The difficulty of making changes in everyday practice should not be underestimated. We recommend monitoring the implementation of standardised PCC as it finds its way to common practice. This implementation research should aim to identify facilitators for and barriers to the delivery of standardised PCC in the context of the health care system. Additionally, research is necessary to align caregivers' approaches to standardised PCC to the preferences and needs of women. This could promote its uptake and therefore reward caregivers' efforts, providing a positive feedback loop.

This study was confined to PCC in the form of individual PCC consultations. Individual PCC consultations have the advantage that thorough risk assessment across all risk domains can be performed for a couple contemplating pregnancy. Yet, there is a trend internationally to integrate PCC into well-women's health care services. Although this is outside the scope of the current study, we recommend that future research addresses how PCC can be integrated into preventive health care services for women. This will require increased collaboration between the health care prevention and primary care sectors.

Conclusions

Delivery of PCC to couples in the general population has been advocated since 2007. This study, however, confirms that delivery of PCC only occurs for a minority of women contemplating pregnancy. Targets to extend delivery of PCC are: (1) explicit promotion of comprehensive PCC consultations at appropriate moments in everyday clinical practice; (2) promotion of standardised content of PCC by increasing the use of tools; (3) collaboration between GPs and midwives to promote and deliver PCC; (4) changing negative perceptions about PCC among GPs and midwives; (5) improving uptake by tailoring PCC consultations to meet the needs of women.

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Disclosure statement

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