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Implementation of reproductive life planning (RLP) in primary health care supported by an evidence-based website

Melinda Koo Andersson and Tanja Tydén

Department of Women’s and Children’s Health, Uppsala University Hospital, Uppsala, Sweden

ABSTRACT

Objectives: The aims of the study were to evaluate how well the reproductive life plan (RLP) tool was implemented in practice and explore the utility of the website www.reproduktlivsplan.se for patient counselling.

Methods: A cross-sectional study was conducted in 2018, in which 73 midwives in primary health care were asked to use the RLP tool and the website in their daily practice. Three months later, participants answered a questionnaire, based on normalisation process theory (NPT), about their implementation experience.

Results: The response rate was 73% (n = 53). The mean length of midwifery experience was 15 years. Almost all respondents (89%) reported a positive attitude towards the tool and the website and their ability to use them in practice. The majority agreed to all statements about implementation of the RLP, according to NPT. Use of the RLP also made it easier for midwives to support clients in forming reproductive goals (85%, n = 45), give family planning advice (81%, n = 43), give advice about how to improve health before pregnancy (85%, n = 45) and give advice about how to preserve fertility (89%, n = 47). Nine out of ten respondents said they would recommend the website to other midwives.

Conclusion: The RLP was well implemented among the respondents and the majority considered the website to be a useful tool. Long-term studies are needed to further elucidate the effects of the RLP on changes in health behaviour and pregnancy outcomes.

Introduction

Unintended pregnancies remain a public health problem. It is estimated that, between 2010 and 2014, 44% of all pregnancies worldwide were unintended, about half of which ended in abortion [1]. Sweden has the highest abortion rate in Western Europe [2], in spite of subsidised contraceptives for young women and contraceptive counselling available free of charge for all women. In a nationwide study [3], the unmet need for contraception was estimated to be 15%. Skogsdal et al. [4] found that in Sweden 23% of parous women and 10% of nulliparous women did not use any contraception.

The Centres for Disease Control and Prevention (CDC) recommends a tool named the reproductive life plan (RLP) to increase awareness of unintended pregnancies and promote reproductive health. Files et al. [5] explored ways to incorporate the CDC guidelines into clinical practice in order to give clinicians an opportunity to help reproductive-aged women and men reflect on whether to have children, to increase preconception health and to avoid unintended pregnancies. The authors suggested that midwives were strategically well placed to engage women in a discussion about reproductive life planning. The American College of Obstetricians and Gynaecologists encourages health care providers to assess women’s RLPs at every encounter, to improve a woman’s health before conception [6]; but in Europe preconception recommendations for healthy women and men are fragmented and inconsistent [7].

A review of publications between 2000 and 2014 about the RLP concept suggested that reproductive life planning was integral to preconception care and family planning and could serve as a framework for promoting reproductive health across the lifespan of both men and women [8]. The RLP concept has been tested in interventions among men in Sweden [9] and among women in Sweden [10,11] and Iran [12]. Men and women appreciated the RLP counselling and it increased their fertility awareness. Some men suggested that a homepage or mobile phone application about fertility would be useful. The intervention had limited impact, however, on reproductive plans [9–12].

Swedish national contraceptive guidelines state that the aims of contraceptive counselling are to prevent unplanned pregnancies and to preserve women’s fertility by promoting sexual and reproductive health until pregnancy is desired [13]. A structured approach to achieve these goals can potentially be offered by the RLP, but its value in different settings needs to be evaluated.

In Sweden, midwives are licenced to provide contraceptive counselling to healthy women; most contraceptives are prescribed by midwives. Midwives who used the RLP tool found it feasible for promoting preconception health and they had the impression that many women had not reflected on their reproductive plans. The midwives
emphasised the importance of tactfulness in individual counselling sessions [14]. As the results were promising, a mobile-friendly RLP website (www.reproduktivlivsplan.se) in different languages was developed for health care providers and their clients [15]. As further information was deemed necessary on how to implement the RLP in conjunction with a mobile-friendly website, we set out to investigate midwives’ adoption of the RLP tool and their experiences of using the website in their consultations.

Methods
A cross-sectional study was conducted in Uppsala County, Sweden. Uppsala County has a population of almost 400,000 and the educational level and proportion of immigrants are similar to the Swedish average. Some of the county’s midwives had used the RLP concept in 2014 [14]. It was therefore natural to return to this population of midwives in the next step of adopting the RLP and using the mobile-friendly website for further support. The study was supported by a senior gynaecology consultant and a coordinating midwife in antenatal care. The project leader (MKA) informed all midwives (n = 73) about the project during a staff meeting in August 2018 and 1 month later visited each clinic to follow up on the previous meeting.

The website
The website consists of questions about the desire to have children or not, and, if yes, when and how many. The questions were constructed with an understanding that some women are unsure whether they want a baby and that the RLP may change over the lifespan. The information covers conception, eggs, sperms, fertilisation and the menstrual cycle, as well as fertility and health, age and fertility, lifestyle prior to conception, health and environment, diet and exercise, calculation of body mass index, sexually transmitted infections, getting help to become pregnant, and reasons for not using contraception. There is also a quiz about fertility and links to official information sites such as 1177.se and umo.se, which is a virtual adolescent clinic about sex, health and relationships for ages 13–25. These sites are only in Swedish. The RLP website is in Swedish, English, French, Spanish, Arabic, Greek and Somali.

The questionnaire
To better evaluate participants’ perceptions of the RLP and the website, the questionnaire used was a modified version of the NoMAD instrument [16], which is theoretically derived from and based on normalisation process theory (NPT; www.normalizationprocess.org). NPT is a social theory to understand the dynamics of implementing new technology or complex interventions in health care. NPT has four key constructs: (1) coherence, (2) cognitive participation, (3) collective action and (4) reflexive monitoring [17]. Implementation of new practices requires the involvement of participants through those constructs: ‘coherence’, concerning the shared and individual understanding of aims and expected benefits of a practice; ‘cognitive participation’, concerning the relational work that people collectively do to build and sustain the practice; ‘collective action’, concerning the enacting of a practice by its users; and ‘reflexive monitoring’, concerning the comprehension of the effects of a practice [18]. The NoMAD instrument can be used as a structured assessment of implementation processes such as that of the RLP [17].

The questions were grouped into four parts. Part A consisted of five questions on how many years the midwife had worked and whether s/he was experienced with RLP and the information booklet. Part B consisted of three general questions about the RLP method. Respondents were asked to identify their level of familiarity on a rating scale from 0 to 10, where 0 was ‘not at all/still feels very new’ and 10 was ‘completely/feels completely familiar’. Part C covered 13 detailed statements about the implementation of the RLP method answered on a five-point Likert scale ranging from ‘strongly agree’ to ‘strongly disagree’. The first nine questions mirrored the four NPT constructs.

- Coherence (two statements): ‘staff in this organisation have a shared understanding of the purpose of the RLP method’ and ‘I can see the potential value of the RLP method for my work’.
- Cognitive participation (two statements): ‘I believe that participating in the RLP method is a legitimate part of my role’ and ‘I will continue to support the RLP method’.
- Collective action (three statements): ‘I can easily integrate the RLP method into my existing work’, ‘sufficient training is provided to enable midwives to implement the RLP method’ and ‘management adequately supports the RLP method’.
- Reflexive monitoring (two statements): ‘we midwives, i.e., me and my colleagues, agree that the RLP method is worthwhile’ and ‘I can modify how I work with the RLP method’.

Part D consisted of questions, designed by the research group, to measure the midwives’ attitudes towards implementing new working methods and assess their perceptions of the website. The last four questions were open-ended questions about the usefulness of the website, how it could be improved, how to facilitate the use of it, and reasons for not using it. The final questionnaire consisted of 33 questions.

The questionnaires were posted to the clinics 8 weeks after giving out the information at a staff meeting. The project leader (MKA) collected the questionnaires during visits to the clinics 1 month later. Respondents placed their completed questionnaire into a sealed envelope.

Data analysis
Descriptive statistics were used. Spearman correlation analysis was used for working experience and attitude towards implementing new working methods, to test whether there was a connection between the variables; a p-value < 0.05 was considered significant. Statistical analysis was performed using IBM SPSS Statistics for Windows, version 25.0 (IBM, Armonk, NY). Answers to the open-ended questions are illustrated with a few representative quotes, and some typical statements are shown. We did not use any qualitative analysis methods as we had only four open-ended questions. The authors selected direct quotes for each answer.
**Ethical considerations**

Participation in the study was voluntary and anonymous. According to current Swedish legislation, formal approval by the regional ethics review board was not required. The only personal data collected were how many years participants had worked as a midwife. Throughout the project, the ethical principles outlined in the Declaration of Helsinki were followed. Midwives were included in the study only after giving their informed consent; verbal and written information on the study was given. Permission for conducting the study in primary health care was approved by Uppsala County Council.

**Results**

Of 73 midwives who received information about the project, 53 (73%) filled in the questionnaire. Midwives had been working an average of 15 years (range 2–42 years), 9 years (range 3 months to 36 years) of which were in primary health care.

**Previous experience with the RLP**

Almost all (96.2%, n = 51) had heard about the RLP method before the project started, 77.4% (n = 41) had previously used the RLP method in their work and 73.6%, (n = 39) had experience of working with the booklet. The midwives rated their general experiences of using the RLP on a scale from 1 to 10 (best option) as follows:

- ‘How familiar does it feel when using the RLP method?’ (median 8, range 1–10).
- ‘Do you feel that the RLP method will continue to be or otherwise become a standard part of your work?’ (median 7, range 1–10).
- ‘Do you feel that the RLP method is already an integrated part of your counselling?’ (median 6, range 1–10).

The midwives’ opinions on the RLP method are presented in Table 1. The majority agreed to all statements according to the NPT constructs. No one disagreed, but 40% (n = 21) expressed doubt about the support of management since they answered ‘neither agree nor disagree’.

As shown in Table 2, the majority agreed that the RLP method made it easier for them to support clients to form reproductive goals (84.9%, n = 45), to deliver family planning advice (81.1%, n = 43), to improve health before pregnancy (84.9%, n = 45) and to preserve fertility (88.7%, n = 47).

**Perceptions about the website and attitudes towards implementing new working methods**

As shown in Table 3, almost all respondents (88.7%, n = 47) had an optimistic attitude towards implementing new...
working methods and tools. There was no significant correlation between working experience as a midwife ($r = 0.014$, $n = 50$, $p = 0.924$), or between working experience as a midwife in primary health care, and attitude towards implementing new working methods and tools ($r = -0.090$, $n = 50$, $p = 0.535$).

Open-ended questions

The response rate to the open-ended questions was 87% and in total we received 94 quotes. Some representative quotes, corresponding to the majority opinion, are illustrated below.

**In what way has the website been a useful tool for you?**

The majority answered that they could refer clients to information on the website and encourage them to read more on their own. They also found the website to be a helpful tool to inform clients about preconception health. One midwife wrote:

> It is easy to display, easy to understand and easy to recommend the woman to look into and read on her own.

Some thought the website was helpful as a conversation starter about the RLP:

> It is easier to get into the subject of reproductive health. It is a good way to start the conversation; it clarifies for the client what is being discussed. It has good pictures to talk about.

Some midwives thought that the website was a good source of information for both clients and midwives:

> It is a knowledge support; it is good that information is equal for everyone.
forgetfulness. The most common reasons were lack of time or simple selves to use the website. One midwife wrote:

Could the website be improved in any way? The majority suggested that the website should be translated into several languages, especially Arabic, Somali and Dari. One midwife wrote:

[It should] clarify on the website that it is not about ‘anti-feminist’ propaganda; [it is] easy to read negatively by women who for career or other reasons choose to wait.

Some thought that the name of the website was too long and complicated:

[I suggest to] have an easier name of the website; the current one is long and complicated.

What could facilitate the use of the website? The majority would like to have some kind of business card to hand out or to link the website to the website 1177.se. One midwife wrote:

The website should be available on 1177.

Another wrote:

[I] wish there were business cards with the name of the website to hand out to patients.

Some midwives gave examples of how to remind themselves to use the website. One midwife wrote:

[I like] to place it as ‘favourite’ or add [it] to ‘my links’.

What was the foremost reason for not using the website? The most common reasons were lack of time or simple forgetfulness:

Lack of time; sometimes it feels ‘overbearing’ to receive new information on everything we have to offer patients, considering the time we have.

Another wrote:

[I] have used it very little, mostly because I forgot.

Discussion

Findings and interpretation

We investigated the implementation of the RLP concept among midwives working in primary health care and whether they considered the RLP website to be a useful tool in their consultations.

The majority of the respondents stated that they agreed or agreed strongly with the RLP statements across the four NPT constructs. It is noteworthy that no one disagreed. Generally, the more a respondent agrees to the statements, the more an innovation is implemented according to the respondents’ perceptions [17,18]. The midwives agreed that sufficient training was provided to implement the RLP method. Only on one item were almost half ambivalent about the lack of adequate support from management. A reason may be that the midwives worked at 15 clinics with different managers, which emphasises the importance of communication between different stakeholders to ensure support from an entire organisation. This requirement of support from managers and sufficient training before starting to use the RLP has been pointed out previously [19].

Health care providers should have an understanding about the sensitivity of questions concerning having or not having children in the future and must ask those questions with interest, using a patient-centred approach. An open-ended question, ‘What is your attitude to having children/ more children?’ is a better approach than ‘Do you wish to have children?’ Health care providers must also have time to have a discussion with a client, as the subject can be sensitive. In a previous Swedish study, the midwives were aware of the importance of tactfulness and professionalism, since individual and societal factors influenced the RLP [14]. In Sweden, many midwives are used to motivational interviewing when discussing lifestyle changes, which can explain their positive experiences of the RLP.

Interestingly, as many as 89% of respondents either ‘agreed’ or ‘strongly agreed’ that they had an optimistic attitude towards implementing new working methods and tools. According to the Diffusion of Innovation Theory, about half of a population are early adopters and half are late adopters [20]. The respondents in our study may belong to the early adopters.

The majority considered the website to be a useful tool for both clients and midwives. It was easy to display and understand, and women could be recommended to read the information further on their own. In the study by Stern et al. [14], the midwives had an RLP booklet to assist them in counselling, which was appreciated. Complementary information can easily be added to the website; midwives suggested that it could be linked to the existing Swedish platform for health care counselling, 1177.se.

A few midwives commented that lack of time was their reason for non-use of the website. The booked consultation with the midwives in our study varied from 15 to 45 min; referring women to the website prior to the visit could therefore be a time-saving strategy and facilitate counseling. The internet has become one of the most popular sources of health information; worldwide 5% of all internet searches are health-related [21]. Many women use the internet for issues related to their pregnancies but they do not discuss the information with their health care provider [22,23]. Health care providers could initiate a discussion on what their clients have learnt from the internet, as although some information is evidence-based there is also a flow of misleading information.

The RLP website is publicly available and has been translated into several languages, as one out of four women attending antenatal care in Sweden was born abroad [24]. Health care providers can emphasise different items depending on cultural and social aspects.

Exploring experiences of new technology among professionals is important for further development of different kinds of health applications. The website can be a starting point for reproductive-aged women and men to develop an RLP and learn more about fertility and preconception health.

Similarities and differences in relation to other studies

Implementation of the RLP in primary health care was accepted by the study respondents. Primary health care
providers in the US perceived time constraints in conducting pregnancy intention screening [25,26]. Baldwin et al. [26] evaluated two pregnancy intention screening tools and found that half of providers thought either tool to be helpful. Furthermore, two-thirds of the respondents reported that the tools helped them to communicate their reproductive goals to their providers.

The importance of having a patient-centred consultation that allows women to express ambivalence about pregnancy has been previously discussed [27,28]. Among women attending antenatal care in Sweden, 14% of the pregnancies were neither planned nor unplanned and 12% were fairly or very unplanned [29]. One out of 10 female university students in Sweden did not wish to have children and considered the possibility of freezing eggs. Furthermore, the students were not sufficiently aware of the age-related decline in female fecundity and 13% had an unmet need for contraception [30]. Female university students would have benefited from information about reproductive age-related risks and contraceptive methods compatible with their needs. We hope that the RLP website will be particularly useful for this group, to enable them to make well-informed decisions concerning reproductive planning. There is ongoing research on the effectiveness of using mobile applications in promoting preconception health [31].

**Strengths and weaknesses**

The 73% participation rate was felt to be acceptable, as it has gradually become harder to recruit people to answer questionnaires. Implementation of new working methods in health care is important and necessary to improve the quality of health care delivery. For the same reason it is also important to use new evaluation instruments. Ours was a quantitative study containing some open-ended questions, contributing qualitative data. This added a depth of understanding and valuable opinions of the participants, which is strength.

The study had, however, some limitations. It was conducted in one of 20 counties in Sweden. A university town dominates the county, and health care providers are often asked to participate in different kinds of research projects. The participants were probably interested in research and development, and three out of four had used the RLP in a research project 5 years earlier [10].

One limitation concerns the NoMAD questionnaire, which is a fairly new instrument. The NPT has been widely used to analyse the implementation of complex health care interventions and has proven to be useful and beneficial [17]. Although it is a new approach to assess an implementation process using NoMAD, the instrument has been tested in a Swedish version [32].

**Conclusion**

This study showed that the RLP method, based on NPT, is well implemented among midwives working in primary health care and that a majority thought that the RLP website was a useful tool. We have informed coordinating midwives in all Swedish counties about the present project and some have already contacted us for more information. Long-term studies will be needed to further elucidate the effects of the RLP on changes in health behaviour and pregnancy outcomes, in randomised trials or registry studies.

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**Disclosure statement**

No potential conflict of interest was reported by the authors.

**ORCID**

Melinda Koo Andersson [1] http://orcid.org/0000-0002-5805-7582

Tanja Tydén [2] http://orcid.org/0000-0002-2172-6527

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