## NEW ZEALAND RESEARCH

# "I've done a test, what now?" A focus group study exploring eHealth access for women

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## ABSTRACT

**Background:** Following the receipt of a pregnancy test result, a woman's access to timely and appropriate information is essential for enabling her to make informed decisions. Individually tailored information can be hard to find, which can constrain decision-making, leading to delayed engagement with maternity services. Carefully designed eHealth interventions could speedily deliver targeted information but women at most risk of adverse birth outcomes may experience significant barriers to accessing digitally delivered information.

**Aim:** To investigate how women find information about what to do next when they have a positive or negative pregnancy test.

**Method:** Professional networks were used to recruit women from ethnic and socio-demographic groups associated with delayed engagement in antenatal care. Informed by participatory design, we sought to understand how these women access reproductive health information following a pregnancy test; and then we explored their perspectives about which eHealth tool they would find most helpful. We collected qualitative and quantitative data from three focus groups and two individual interviews. Qualitative data were analysed interpretively using thematic analysis, and quantitative data were analysed descriptively.

**Findings:** Women accessed reproductive information following pregnancy from doctors, school nurses, midwives, the internet and, for some, family and friends. Barriers to access included financial challenges, degree of information literacy and the feeling of being judged by others. Participants expressed a clear preference for reproductive information which was free, instant, private and personalised to them. The most preferred eHealth tool was a free 0800 number and the least popular were the QR code and free text options.

**Conclusions:** Despite the rapid uptake of eHealth health tools to access health information in general, following a pregnancy test, study participants indicated they valued free, confidential and personal interactions with a health professional to supplement any electronic information they used or accessed. These methods did not eclipse the importance to many participants of embodied, face-to-face contact with a desired health professional, specifically a midwife.

**Keywords:** reproductive health information, pregnancy, e-Health tool, engagement

## BACKGROUND

Delayed engagement with maternity services is a well-recognised contributory factor to adverse maternal and fetal health outcomes, such as undiagnosed congenital abnormalities and perinatal mortality (Perinatal Maternal Mortality Review Committee [PMMRC], 2015, 2017). Ideally, pregnant women engage with antenatal care within 10 weeks of conception; however, surveys drawing on the multi-ethnic population of a large city in New Zealand (NZ) showed that 17% of pregnant women in the district health board (DHB) catchment booked late (i.e. >18 weeks) for antenatal care (Corbett, Chelimo, & Okesene-Gafa, 2014). Corbett et al. (2014) found that the mother not knowing the importance of starting early with antenatal care was a significant predictor of poor maternal, fetal and neonatal outcomes (OR 4.2; 95% CI, 1.39 - 12.70). In addition, the odds of late booking were six times higher for Māori (the indigenous people of NZ) and Pacific women (Corbett et al., 2014). Ensuring information is delivered in a timely and appropriate fashion is likely to be important to achieving early engagement but there appear to be several barriers to engaging early, particularly for marginalised or vulnerable women (Bartholomew, Morton, Atatoa Carr, Bandara, & Grant, 2015; Downe, Finlayson, Walsh, & Lavender, 2009). Not knowing what to do after a positive (or for some women, negative) pregnancy test is likely to lead to a delay in women engaging, unless more effective health promotion strategies can be developed that ensure there is targeted information specific to the needs of women from all sectors of society. The Clinical Indicators Report (Ministry of Health [MOH], 2018) also found

that, although early engagement (understood as early registration with a Lead Maternity Carer [LMC]) has increased over the past 10 years, there are differences in this rate amongst the NZ DHBs, which may be due to the varying effectiveness of health promotion strategies throughout the 20 DHBs.

Despite the need for timely information to guide decision-making in any area of healthcare, currently reproductive information is difficult to access. There appears to be no easily accessible, comprehensive and systematic tool that can support NZ women through the complex decision-making that may be required, and that takes into account their individual circumstances. The use of electronic methods, known collectively as eHealth interventions, has gained rapid acceptance as an approach to support health promotion efforts. eHealth encompasses everything that comes within information and communication technology and healthcare, including telemedicine, mobile health and health informatics (Enam, Torres-Bonilla, & Eriksson, 2018). eHealth is purported to provide personalised, context-specific and interactive information. However, feedback concerning its effectiveness, although promising, continues to suggest the approach is inequitable, particularly for vulnerable populations.

The process of gaining appropriate information following a pregnancy test is likely to be complicated by the different types of information needed, depending on the result of the test and the response of the women to these results. For some women the discovery of their pregnancy is not welcome news. Early access on the part of women to information and services supporting decision-making around termination of pregnancy (TOP) remains important in reducing the gestation at which TOPs occur, and thus their risk of complications (Silva, McNeill, & Ashton, 2010). The time of finding out whether or not she is pregnant is also a prime opportunity for the woman to access information around contraceptive methods and sexual health.

Some women may be disappointed about a negative test. In their desire to conceive, especially after repeated negative results, these women have an opportunity at this time to access educational tools or resources about fertility and reproductive cycles, and an introduction to pathways for fertility investigations.

Finally, for women continuing with a pregnancy, information on engagement with, and choice for, pregnancy care is the priority. Engaging in early antenatal care with an LMC provides the avenue for early pregnancy care. This is an opportunity for fetal and maternal health screening, and for receiving nutritional advice, including interventions such as folic acid and iodine supplementation, to optimise maternal and fetal health outcomes. The PMMRC, along with the National Maternity Monitoring Group (NMMG), has identified increasing the rate of early engagement with pregnancy care as one way of improving outcomes for women and babies (NMMG, 2018).

The genesis of this study was the belief that pregnancy test kits could be harnessed to provide women with novel ways of accessing reproductive health information digitally. Potentially, a Quick Response (QR) code, web address or application (app) name on test kit boxes or accompanying information leaflets could provide access or links to a carefully designed information portal or mobile health app, leading to faster provision of tailored information. The information would be targeted to the various reproductive needs of women when they were likely to be receptive (Kim & Xie, 2017). It was hoped such tailored information would overcome the problem of "not knowing" and assist women to decide to enrol earlier with an appropriate health provider or service.

In NZ, as in other developed countries, there are marked health disparities in relation to maternal and fetal health outcomes (PMMRC, 2015, 2017). For example, the PMMRC (2015) showed health disparities in relation to maternal outcomes, with a significantly higher perinatal mortality for certain socio-demographic groups, including those of Māori, Pasifika or Indian ethnicity, those with increasing social deprivation, multiple pregnancies and mothers who are under 25 years of age.

Health literacy is defined as "the capacity to obtain, process and understand basic health information and services in order to make informed and appropriate health decisions" (MOH, p.1, 2015). Where previously a consumer's relative health literacy was identified, now there is support to focus on improving the health literacy of health systems and providers. The MOH's framework puts the onus on health providers to ensure that their services are easy to access and navigate, and give clear health messages to New Zealanders (MOH, 2015). This is illustrated in work undertaken in the area of health literacy on the prevention and management of skin infections. It shows the development of the work through to the resources for parents and families (Workbase, 2013). While this example is in an area outside midwifery, it shows how health literacy is not just about information giving but also about ensuring health professionals have the skills and resources to deliver the evidence in an accessible way.

Many researchers, exploring the link between health literacy and health equity, have argued that low information literacy may be a critical contributing factor to explaining health disparities (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011; Hasnain-Wynia & Wolf, 2010; Logan et al., 2015; Mantwill, Monestel-Umaña, & Schulz, 2015; Paasche-Orlow & Wolf, 2007). In relation to women's reproductive health, a recent systematic review found evidence supporting the importance of health literacy in relation to a range of reproductive health issues, such as contraception, fertility and prenatal screening (Kilfoyle, Vitko, O'Conor, & Bailey, 2016). Barriers to accessing and utilising antenatal healthcare services are more often identified amongst women from specific socio-demographic groups. Women from specific groups who may have lower levels of educational attainment are particularly vulnerable to adverse outcomes (Downe et al., 2009). These women may have difficulty navigating both health information and the health system, which may contribute to poor utilisation of antenatal services. Seeking to understand how these women access reproductive information may be an important step to helping overcome barriers to early (or any) engagement.

In an Australian study, Lupton (2016) asked 36 women who were either pregnant or had given birth in the previous three years about the use of digital media for pregnancy and parenting purposes. The women in Lupton's study wanted information that was: 1) immediate; 2) regular; 3) detailed; 4) entertaining; 5) customised; 6) practical; 7) professional; 8) reassuring; and 9) unbiased. The findings revealed the importance of using digital information when establishing and maintaining social connections and intimate relationships with other mothers. However, participants also highly valued expert advice and expressed the desire for greater and more ready access to face-to-face information and support offered by healthcare professionals. Lupton (2016) suggests that further research with women from socio-economically disadvantaged backgrounds and non-urban locations is required to identify whether they have different information needs and values from the women who were included in the study.

Sa'uLilo (2016) explored the health literacy of Pacific peoples in NZ in relation to non-communicable diseases. Sa'uLilo (2016)

identified a preference by the participants for the use of mobile devices, such as phones, to access information, and that trusting relationships and opportunities for conversations were important in engaging Pacific women in conversations to do with health and wellbeing.

To date there has been limited research seeking to understand how NZ women from at-risk groups access reproductive information, specifically eHealth information, or their preference for different types of supportive eHealth interventions. The aims of this focus-group pilot study were to 1) understand how women from groups at greater risk of adverse outcomes currently source information following a pregnancy test, and 2) provide preliminary data that could be used to design future eHealth initiatives in the area of reproductive health information.

## METHOD

This study was designed to be the exploratory phase of a bigger project that aimed to develop an eHealth tool which could improve access to appropriate reproductive information for all users of pregnancy tests. Ethical approval for the study was gained from the AUT Ethics Committee (15/81 Finding reproductive health information). Consultation with Māori was undertaken as

## Study design, setting and recruitment

With their methodology informed by a participatory design philosophy (Sanders & Stappers, 2008), the research team utilised focus groups to obtain insight into the ideas and attitudes of women who appear to engage later with maternity services in NZ following a positive pregnancy test. We intentionally sought to recruit women from groups who have been identified as engaging in maternity services late in their pregnancy: young women, Māori and Pasifika women, women who had had a number of pregnancies, and women living in areas of socio-economic deprivation. Purposive sampling was used to identify potential participants. Using our professional networks, we approached registered nurses working specifically with women from the identified groups, and community midwives whose caseload included several women who identified with these groups. Women were included if they were between 16-40 years of age, lived in South Auckland or Palmerston North, and had taken one or more pregnancy test(s) or been pregnant in the last three years. The women were invited to participate in the study by community midwives or Pasifika maternal-child health workers who agreed to support our recruitment. Interested women gave permission for their contact details to be given to the research team. These women were given
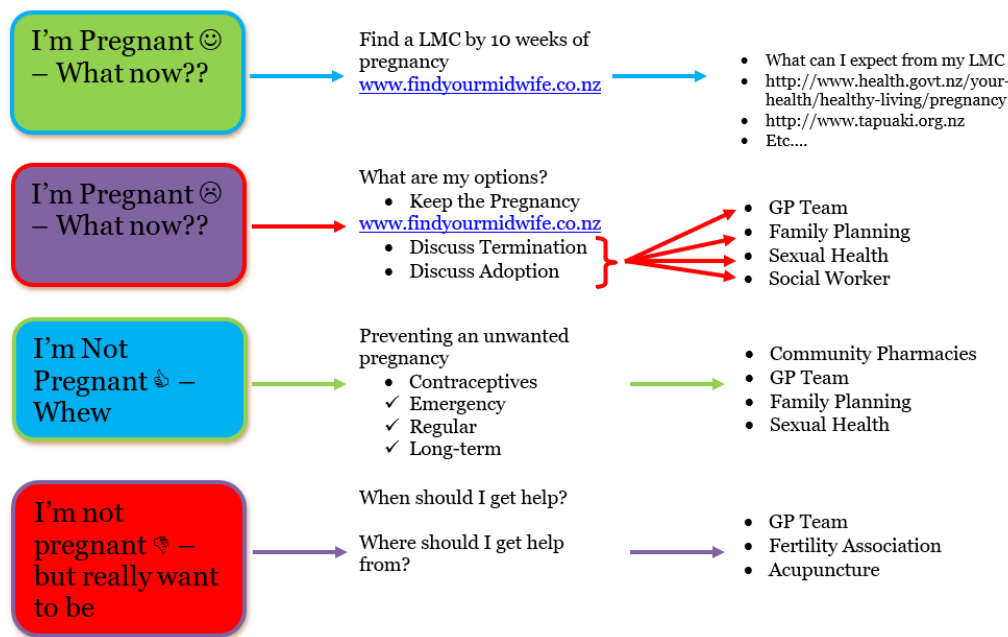


Figure 1. Options for women following a pregnancy test

part of the ethics approval application. The wider project emerged from discussions between midwives employed by a DHB and their academic colleagues on how to address the challenges contained in PMMRC reports relating to ways to support earlier engagement in antenatal care.

One idea was to use a QR code on the back of the pregnancy test package which could enable women to quickly access interactive and tailored information in their own time and space for privacy. Other ideas were: to enable access to an electronic portal through a four-digit text number (free text), a health information app, a web address, or an 0800 free phone number printed on the pregnancy test package. As part of the preparatory developmental work, the research team designed visual images that included a pictorial summary of the different types of responses and possible sources of reproductive information (Figure 1).

an information sheet and asked to contact either the researcher or the person who provided the information sheet to find out more or to participate.

## Focus group and interview procedures

Data were gathered using focus groups and interviews. Six to eight participants were sought for each focus group. Three focus groups were run in two cities (two in Auckland, one in Palmerston North). Each focus group had an experienced facilitator and a note taker who recorded the first words in each interaction and the key points made. An interview guide was prepared in advance for the focus group. Each focus group lasted approximately one hour, and participants were given a $25 grocery voucher as koha (gift or contribution).

## Table 1. Examples of focus group questions

**When you thought you might be pregnant, how did you find out whether you were or not?**

**What made you take a pregnancy test?**

**Where did you get a pregnancy test from?**

**Once you knew you were or were not pregnant, how did you find information about what to do?**

**What will help you and other women to find information about what to do when you first find out you are, or are not, pregnant?**

Table 1 shows the types of questions in the interview guide. To supplement the focus group data, two individual interviews were used to provide alternative means of collecting the perspective of individuals who elected not to participate in a focus group.

All participants provided informed consent. The confidential nature of the process, including how the data were anonymised, was outlined in the information sheet and reinforced in the group, sometimes with the help of an interpreter for those for whom English was not their first language. The transcriber was asked to sign a confidentiality agreement regarding the content of the focus group discussions. A brief questionnaire to gather some demographic data was completed at the start of the focus group or interview; a series of conversational prompts encouraged participants to expand on their answers. During the focus group, participants were also shown a figure displaying five different types of eHealth tools and asked to select a first, second and third preference for accessing reproductive health information (Figure 2).

## Data analysis

A coding framework informed by Braun and Clarke (2006) was drawn up and used to guide the analytic process for the qualitative data. Data collection and analysis occurred concurrently. The first phase involved active reading and familiarisation with the transcripts and reflecting on the meaning of the data. All members of the research team individually read through the transcripts and discussed the findings jointly.

Data were systematically coded by different researchers in the team, and findings shared with the larger group through research team meetings. During the final stage, an independent researcher reviewed the coding decisions made and the full body of data to check for consistency in the coding process. In this final stage, qualitative analysis shifted to identifying patterns across the data set and how this related to the research aim. The demographic data were collected from the transcripts, entered into an Excel spreadsheet and appropriate data visualisation tools were selected to display the quantitative data.

## TABLE 2. Characteristics of study participants

| Group characteristics | Numbers |
|---|---|
| **FG1: Focus group** | **Total (n=7)** |
| Members of teen parent unit | Māori (n=4) |
| NZ city | Cook Islander (n=1) |
| Aged 15-18 | Samoan (n=1) |
| Recruited by social workers in unit | NZ European (n=1) |
| **FG2: Interview** | **Total (n=2)** |
| Midwifery clients | |
| NZ city | Pasifika (n=2) |
| Aged 20 & 31 | |
| Recruited by local midwives | |
| **FG3: Interview** | **Total (n=1)** |
| A relative of a focus group participant | |
| NZ city | Pasifika (n=1) |
| Age DNC* | |
| Volunteered for interview | |
| **FG4: Focus group** | **Total (n=5)** |
| Midwifery clients | |
| NZ city | Tongan (n=3) |
| Age DNC* | Unspecified (n=2) |
| Recruited by local midwives | |
| **FG5: Focus group** | **Total (n=9)** |
| Midwifery clients | |
| NZ regional city | Fijian (n=4) |
| Aged 16-44 | Samoan (n=5) |
| Recruited by Pasifika maternal-child health service workers | |
| | **TOTAL     24** |

*Data not collected (DNC)



Figure 2: Image shown to focus group participants of potential pregnancy information tools

## FINDINGS

Three focus groups took place. One focus group consisted of teenage mothers from a large urban centre who were predominantly Māori. The other two focus groups contained participants from a variety of Pacific Islands, including Tonga, Samoa and Fiji, who had settled in NZ. The individual interviews were with participants from the large urban centre. Table 2 displays the key demographic characteristics of the focus groups and the individual interview participants.

## Information access points

Most interview participants had used a pregnancy test to confirm their pregnancy but relatively few had purchased pregnancy tests from a supermarket. Participants described barriers to purchasing tests at the supermarket, relating particularly to cost and privacy.

> Interviewer: And what about the barriers to going to get it from the supermarket? What gets in the way of you doing that?
>
> N: The cost.
>
> S: Everyone will see you.
>
> C: And grabbing it off the shelf and people might look at you and think, 'oh she might be pregnant'.
>
> S: Going to the counter.
>
> N: And especially when you're young and you are buying a pregnancy test then they'll just have that …judgmental face. (FG1)

Those who purchased tests preferred to visit a pharmacy to buy the test. Many of the teenage mothers had taken tests in the school health clinic with the support of the school nurse. In general, midwives, general practitioners (GPs) and school nurses appeared to be the most desired providers of pregnancy related tests and information, as well as of other reproductive information such as contraceptive or fertility advice. However, some participants did describe accessing the internet to gather more information:

> I didn't tell anybody. I just mainly searched on the internet. It was easier; you didn't have to worry about what other people were saying or what they think about you. (C; FG1)

Although several participants did describe using the internet to find information, their feelings about this were mixed. Some found the internet useful, while others found getting the information they wanted was difficult, the medical language hard to understand, finding information specific to their needs challenging and they had difficulty knowing where to look. For many of these women, having access to a knowledgeable person was especially valued as noted by S below:

> Interviewer: If you could live in a world where it was easy to get that information that you needed, where would you?
>
> S: I would go to a doctor and the second one maybe go online. But I prefer to go see a doctor or nurse.
>
> Interviewer: What is the advantage of seeing a doctor or a nurse?
>
> S: Because I know that they will explain everything, yeah. I get to ask them like if I need help. Yeah I think I'd prefer to see a doctor because maybe they will make me understand … what to do, yeah. (FG3)

## Barriers to accessing care

The participants appeared to identify three main categories of barriers that could restrict their access to reproductive information and care. These were financial barriers, information literacy barriers and feeling judged by others. Financial barriers related to the cost of accessing relevant information. For example, purchasing a pregnancy test at either the supermarket or pharmacy was described as costing between $7 for one test and $30 for three tests. The cost of visiting the doctor appeared to vary between cities; participants in South Auckland reported free GP visits if they were pregnant but the participants from Palmerston North described being charged. Another financial problem was the lack of credit on mobile phones. All participants appeared to use mobile phones but many described how lack of internet access could impact their ability to find information at times due to running out of credit. One Pasifika support worker participating in the interview also noted the financial cost of needing to phone around to find a midwife.

> …Most mothers don't have a landline at home. So they are also using their mobiles and then they run out of credit and it is difficult for them …and they kind of work together to go and find help in the health system. (Pasifika Support Person; FG1)

Participants also described barriers relating to information literacy. This was worse when English was also their second language. The need for simple language was mentioned by participants, both in terms of information provided online but also when talking face-to-face:

> Because when I found out I was pregnant, and I was thinking about abortion I went online to look for my options…but it was really confusing because it was like basically lots of big words and it just made it hard to understand everything. (R; FG1)
>
> Because there's too many answers [options] and I don't know which one I will go to. (A; FG3)

A third area of concern mentioned, particularly by the younger mothers, was the sense of being judged by others when accessing reproductive information or services. This created a sense of embarrassment and a desire to stay anonymous.

> N: People will judge you, and possibly getting in trouble. [Maybe] not getting in trouble [but] just people being aware of the possibility of you [being pregnant]….
>
> R: Yeah…. because you're automatically stereotyped. (FG1)

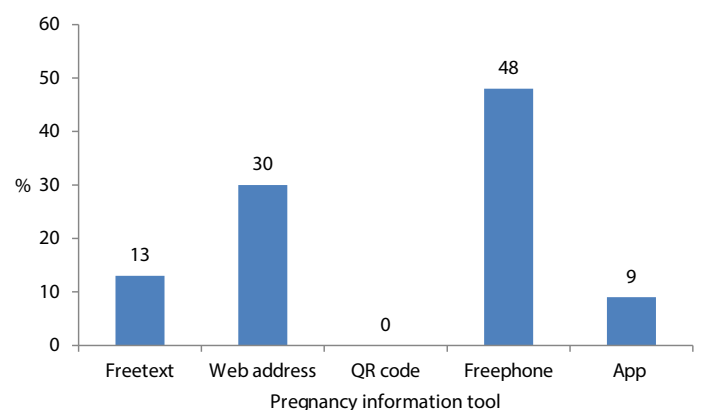## Preferences for delivery of reproductive information



Figure 3. Participants' first preference for an eHealth pregnancy information tool

Information about the preferences of participants for the most useful type of eHealth tool that could be used on pregnancy test packs is summarised in Figure 3. Quantitative data were gathered for 23/24 participants. The majority of respondents selected a freephone number (n=11, 48%); the next most popular was a web address (n=7, 30%). No participants chose a QR code as their first choice as many did not really know what it was. Two (9%) and 3 (13%) chose the app and the free text options respectively.

Qualitative data analysis showed that study participants had clear preferences for how reproductive information could best be delivered to meet their needs. They preferred information that was free, immediate, private, personalised and confidential. For example, when discussing the relative merits of different eHealth tools, M summarised the benefits of the 0800 number:

> *You can phone for free, ask them questions and it is free and straight away.* (M; FG4)

Information that had minimal financial cost was particularly important. Some expressed concern that internet searching would not always be private and confidential. Although internet searching was free and immediate, for some it did have drawbacks:

> *Interviewer: What would be the disadvantages of a web address?*
>
> *J: Like someone seeing the history.*
>
> *C: No internet access.*
>
> *N: Oh you could be on it and somebody walks past you [and sees what you are looking at].* (FG 1)

The discussion around the use of a free text number illustrated how the need for anonymity and desire for a personalised approach could be in tension.

> *N: As long as it does not say a physical place you have to go or someone you have to ring up…*
>
> *Interviewer: As long as it's anonymous?*
>
> *N: because we're trying to avoid being identified.*
>
> *R: [We want it to be] As personal and confidential as it can be.* (FG 1)

There were examples, though, of situations where the need for privacy and a sense of awkwardness could be managed while still providing personalised information. One mother described the way a pharmacy assistant took her into a private room to provide contraceptive advice. Others spoke warmly of accepting nurses and other health professionals who helped answer their questions.

> *Interviewer: What is the advantage of seeing a doctor or a nurse?*
>
> *S: Because I know that they will explain everything, yeah. I get to ask them … if I need help. Yeah I think I prefer to see a doctor because maybe they will make me understand … what to do, yeah.*
>
> *Interviewer: They can answer your questions?*
>
> *S: Yeah they can answer my questions.* (S, FG3)

## DISCUSSION

Our focus group findings from this purposeful sample demonstrate that the women who were young or have Pasifika ethnicity preferred face-to-face reproductive health information from family, friends, school nurses, midwives, doctors and pharmacists.

Contrary to our assumption that women would prefer a QR code or an app to access reproductive health information, the young, Pasifika and Māori women in our study clearly preferred a personal conversation. The need to interact with a person was a clear finding of this study, as seen in Figure 3, where the majority of participants preferred a conversation with a person as opposed to a website or even an app. This reinforces the importance of personal interactions and the training of health professionals to provide information that supports the health literacy of women. The education of health professionals in health literacy has certainly become the focus of the MOH in NZ. An example of this is the work done on gestational diabetes mellitus (GDM) and Māori health literacy. The resulting report showed that Māori women were unsure about both the importance of screening and the risks of GDM, so were less likely to complete the screening than non-Māori (Workbase, 2014). This report also identified that women who engage with screening had LMCs who used an approach that built up the women's understanding and health literacy around GDM. The regular encouragement provided by LMCs to women to complete the processes of screening and monitoring was also identified as important (Workbase, 2014).

The findings of this study support the findings of other studies that pregnant women and mothers prefer midwifery advice to information they have retrieved from the internet (Kraschnewski et al., 2014; Lupton, 2016). Grimes, Forster and Newton (2014) found that women tended to use the internet for minor queries but would seek their midwife's advice for serious problems. Grimes et al. (2014) found that women experiencing midwifery-led care labelled midwife discussion/education as most useful while women receiving obstetric-led care found the internet most useful. Whether this can be attributed to how the providers supply information or the level of complexity of the pregnancy, could not be ascertained and may be due to the level of care required.

Contrary to Lupton's (2016) findings that urban Australian pregnant women place a high value on the information and support they receive from, and share using, online sources and apps, our study found that significant barriers limit some groups of women accessing information in this way. These barriers relate to finance, health literacy and their sense of privacy.

The challenges of accessing health information on the internet have been well recognised (Kim & Xie, 2017; Lagan, Sinclair, & Kernohan, 2010; Neuhauser & Kreps, 2010). Many women who are pregnant, including participants in our study, consult the internet to gather information (Lagan et al., 2010). However, it is likely that understanding the information provided to appropriately inform decision-making is less certain. For example, a review of eHealth websites, which examined the readability of the information provided, found the majority contained written information that required at least six years of education, i.e. above sixth grade reading levels (Berland et al., 2001). Navigating information is likely to be challenging for people for whom English is their second language. Mantwill and colleagues (2015) closely reviewed the body of evidence for the relationship between literacy and self-rated health status. They found the strongest indicator for poor health outcomes was for those who had both low English proficiency and low health literacy. Most of the studies in this review were done on North American populations (Mantwill et al., 2015), although the Pasifika mothers in our study highlighted similar challenges. While eHealth interventions show considerable promise at making information more accessible, more work needs to be done to ensure the information provided is understood by all consumers.

There are estimated to be 136 million websites disseminating pregnancy-related information (Kraschnewski et al., 2014), and 6,300 pregnancy-related apps are available in the Apple iTunes store (Moglia & Castano, 2015). In NZ, 92% of under 25-year-olds and 84% of those aged 25 to 35 use smartphones (Statista, 2015) and these phones are transforming the way people communicate and access information.

eHealth strategies are advantageous for health providers in that they are more economic and can reach a greater number of women. However, health data clearly show that the women who arguably are in most need of reproductive healthcare do not use many of the eHealth strategies (PMMRC, 2017). Instead of society labelling these women as illiterate or unintelligent, this study suggests that we need to reconsider how information is made available and presented. Our study of young, Pasifika and Māori women found that, while websites and apps can be useful, there was a clear preference for eHealth tools that were free, confidential and allowed them to interact with a person. Further, the focus group evidence showed that many of the participants desired embodied, face-to-face contact with a trusted health professional, such as a midwife, so long as they were non-judgemental, kind and helpful.

## STUDY LIMITATIONS

This study had only three focus groups, and used structured questions, resulting in the exploration of views or perspectives only to the extent the participants were willing to engage. Two of the groups comprised Pasifika peoples and, while the results may be culturally influenced and not generalisable across other cultures, their views are important, as many Pasifika women who are new to NZ need support to navigate and engage with the health system.

## CONCLUSIONS

In conclusion, eHealth interventions, such as options for seeking further information and support on pregnancy test kits to promote early engagement, will go some way to guiding women where to get that support. However, if/when implemented, such interventions must include the availability of personalised interaction and the material offered should be clearly understandable to all women. Ensuring information is accessible for all ethnic groups of NZ women automatically implies that services are low cost or free, personal and supportive, in conjunction with new technological developments.

### Key messages

- After receiving the results of a pregnancy test, women's access to timely and appropriate information is essential for informed decision-making.

- Barriers to accessing information are financial challenges, degree of information literacy and feeling judged by others.

- There is a clear preference for reproductive information which is free, instant, private and personalised.

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