



Acceptability and perceived feasibility of adapted encounter decision aids on contraceptive methods: An interview study with healthcare providers and Chinese migrant women

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ABSTRACT

Objective: This study aimed to explore the perceived acceptability, usefulness, and feasibility of a suite of encounter decision aids (DAs) on contraceptive methods with Chinese migrant women living in Australia and healthcare providers. **Methods:** Semi-structured in-depth interviews with 22 Chinese migrant women and twenty healthcare providers were conducted. Transcribed data were analysed using the qualitative content analysis method.

Results: Women perceived the DAs to be informative and useful. They suggested making the DAs available outside the clinical settings. Healthcare providers perceived the DAs to be comprehensive and valuable in informing women about contraceptive methods. Some providers had concerns as to the information load and the length of the DAs. Such concerns were eased when provided with an explanation of how to use the DAs. Most women and healthcare providers preferred the numerical format for side-effect probability information presentation.

Conclusion: Making the encounter DAs available in both the Chinese and English languages can be valuable in assisting Chinese migrant women in making informed decisions about contraceptive methods.

Innovation: This study is the first to evaluate the acceptability and perceived feasibility of patient decision aids with members of a migrant community in Australia. The findings highlight the need for disseminating the DAs both within and outside the clinical settings.

1. Introduction

Shared decision-making (SDM) in healthcare refers to a process where both the healthcare provider (HCP) and the patient (or sometimes referred to as consumer) are involved in choosing a care or treatment option that is based on the best available evidence and congruent with the patient's personal preferences and values [1]. SDM has gained increased attention in recent years in both research and policy making. In Australia, "partnership" is one of the key elements in the Australian Charter of Health Care Rights, and SDM is described as one of the valuable and key processes for partnering with patients in their care [2]. Patient decision aids (DAs) are decision support tools intended to complement and facilitate the process of shared decision-making during clinical encounters [3]. DAs have unique characteristics that differentiate them from clinical guidelines, evidence summaries

and other health information and education materials [1,3,4]. DAs are not intended for encouraging or discouraging one course of action or choice against the others [3]. Instead, they provide unbiased and evidence-based information for HCPs and patients to consider and discuss [3,5]. The use of DAs during or before clinical encounters has been found to improve patients' knowledge and accuracy of risk perceptions, foster informed decision-making, and facilitate patient participation in decision-making processes [4,6]. DAs have also shown to be particularly valuable for underserved populations like culturally and linguistically diverse groups [7].

Australia is a multicultural country, with one-third of the population born overseas and over 300 languages spoken in homes [8,9]. Existing literature on migrant women's sexual and reproductive health and contraceptive care needs in Australia often points to difficulties in accessing culturally and linguistically sensitive information and services [10]. To our

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knowledge, of the few contraceptive method-related materials translated into the Chinese language by health and family planning organizations in Australia, most of them focus on a single method or method type. There are no Chinese language DAs which meet the International Patient Decision Aids Standards (IPDAS) qualifying criteria [11] or provide comprehensive information on all available methods and their key features.

Decisions about contraceptive methods are highly personal and preference-sensitive [12]. A wide range of contraceptive methods are available that differ in their mechanisms of action, efficacy, side-effects, social and normative acceptability, and practicality [13]. The contraceptive attributes that matter the most vary among individuals [13]. There can be misalignments between what is valued by healthcare providers and by individuals [13,14]. Therefore, it is often recommended that HCPs use an SDM approach to contraceptive counselling, which involves comprehensive information provision, eliciting individual preferences and values, jointly identifying methods that are most suitable and acceptable to individuals [12,15,16].

Given DAs have the potential to facilitate SDM during clinical encounters and improve knowledge and satisfaction with the chosen method [17], we adapted an existing suite of contraceptive-methods DAs [18] for use with Chinese migrant women living in Australia. The novel adaptation process, which we referred to as the ADAPT approach (Adapting Decision Aids for underserved Populations) took six stages. The stages included selection, review of content, content validity testing, translation, decisional needs assessment and perceived acceptability, usefulness, and feasibility testing. This current study constitutes the final and sixth stage of adaptation. In this study, we aimed to explore women's and HCPs' perceived value of the DAs in providing decision support and gather their feedback on potential ways to improve their overall design, information presentation, and future implementation.

2. Material and method

This study received ethics clearances from the University of Sydney human ethics committee [ref: 2018/159] and Family Planning NSW Project Ethical Risk Team (PERT) [ref: PERT 25].

2.1. 'Right For Me' birth control decision aids

'Right For Me' birth control DAs were developed originally in the United States.[19] The original DA package was seven-pages in total. The DA format was similar to Option Grid™ format [18], with each page containing a table where key questions and answers about comparable contraceptive methods within the same category are presented. This suite of DAs was explicitly developed for use during contraceptive counselling sessions by the HCPs [19]. Alongside a five-minute training video on how to use the DAs, the DAs were provided to HCPs who were enrolled in an RCT study comparing the effects of different interventional strategies in improving SDM during contraceptive counselling [19]. The original 'Right for Me' DAs underwent a multi-stage adaptation process before being presented to participants in this study (the adaptation process reported elsewhere). The final versions of the adapted DAs can be found on the project team website [20].

2.2. Data collection

This is a qualitative study using a semi-structured interview method. The inclusion criteria for women were: (a) self-identifying from Chinese ethnicity; (b) aged 18 to 45; (c) having been living in Australia for no more than ten years. Inclusion criteria for healthcare providers were (a) GP or specialised sexual and reproductive health service provider; (b) having substantial experience in providing contraception related services to Chinese migrant women. We recruited women by placing recruitment flyers at the university campus, two family planning and sexual and reproductive health clinics' waiting rooms and a community service centre. We also posted a recruitment advertisement on one of the Chinese language online discussion boards that are active in Australia. We recruited HCPs by sending out invitation emails to HCPs within the research team's

professional networks, distributing emails through a state-wide family planning organisation and a private sexual and reproductive health clinic, and posting the recruitment advertisement on a local primary healthcare network website.

The majority of interviews were conducted face to face (18 HCPs and 16 women). Phone interviews (2 HCPs and 6 women) were conducted when preferred by the participants. All interviews with HCPs were conducted in the English language. Women were given the choice to be interviewed in either Mandarin Chinese or English with the interviewer (HD) who is proficient in both languages. HCPs were shown the English version of the DAs, while women were presented with either the Chinese or English versions, depending on their preferences. Participants were prompted to elaborate on their impressions and perceptions of the overall design, information presentation, appropriateness, usefulness, and feasibility of the DAs (see supplementary file 1 for interview guide). Participants were shown mock-up cards with each presenting a probability term, such as *possible*, *likely* and *unlikely*, to explore their interpretations of those terms. Participants were probed on their preferences for the format for presenting the contraceptive method side-effect probability, i.e., percentage or frequency. The training video was not shown to HCP participants during this stage. The video content was verbally described to some HCPs after they had provided their views on the feasibility of the DAs. Data were collected from July 2018 to January 2019.

2.3. Data analysis

HD transcribed all the Chinese language (spoken Mandarin) audio recordings verbatim in (written) simplified Chinese. A professional transcription company transcribed all the remaining audio recordings in English. The qualitative content analysis method was used to analyse the data [21]. The dataset for women and HCPs were coded in the English language regardless of transcripts being in simplified Chinese or English and categorised separately. In each dataset, text passages (i.e., sentences) in the transcripts were coded inductively and then grouped under distinct sub-categories that were labelled to reflect the common manifest meaning among the codes. The subcategories were then clustered and grouped under higher order of main categories, which closely aligned with the targeted research/interview questions, such as feedback on design, information presentation, concerns, risk perception, usability, feasibility and suggestions for improvements. HD coded all transcripts using Nvivo 12 software [22]. The categories, subcategories and codes were revised iteratively. Main categories and sub-categories of participant accounts were discussed with team members who had each familiarised themselves with a subset of transcripts. The subcategories from the two datasets were brought together for comparing and contrasting, with similar subcategories were merged and distinct sub-categories were retained.

3. Results

All interviews with HCPs were conducted in English, and the majority (21/22) of interviews with Chinese women were conducted in Mandarin Chinese. The characteristics of the Chinese women interviewed: 1) age 18 to 30 (n = 13), 30 to 45 (n = 9); 2) residency status: Australian citizen or permanent resident (n = 9), temporary resident (n = 13); 3) marital status: married (n = 10), not married or not living with a partner (n = 12). The HCPs included ten general practitioners and ten specialised sexual and reproductive health providers. Seven of the healthcare providers were bilingual in English and Chinese languages.

Through data analysis, five broad categories were identified. They were summarised along with 30 subcategories, supporting codes and participant quotes in Table 1.

3.1. Information presentation

Participants from both groups commented positively on the table design of the DAs. Some HCPs expressed that the colour-coding of different

Table 1
Summary of participant feedback on acceptability, usefulness and feasibility of DAs

Information presentation	Chinese women	Healthcare Providers	Selective quotes from Chinese women	Selective quotes from Healthcare providers
<i>Positive aspects:</i>				
Table design	✓	✓	<i>'To me, the table design makes it very clear to view, it is very convenient to compare methods both vertically and horizontally, and the way that the methods were categorised, it makes it very easy for me to read and comprehend'</i>	<i>'I see it as a very good summary of all the different contraceptive methods and it's good to have questions answered as FAQ. It's absolutely fine. And it seems to be a very sensible division of different methods'</i>
Colour-coding of categories	✓	✓		
Question and answer format	✓	✓		
Comprehensive list of methods	✓	✓		
Categorisation of methods and presentation of each type of method on different DA pages	✓	✓	<i>'I think this [female reproductive system pictogram page] should be placed as the first page, let people understand them first, and then they will know how different methods work to prevent pregnancy'</i>	<i>'And the way it's presented here is they are all equal. So, I suppose that's a good thing because you're not actually biasing anyone towards any particular method from the word go'</i>
Unbiased presentation of method information	✓	✓	<i>'I can't quite differentiate between the IUD and the vaginal ring, which one is which, because I think the vaginal ring is for long-term, like the ones that my mom told me and she used.'</i>	<i>'Unfortunately, in the internet age and especially with young people, they're never gonna sit through and read all this. It's just not gonna happen. And then they'll get bored and not bother with it.'</i>
Female reproductive pictogram	✓	✓		
<i>Negative aspects:</i>				
Too long, too much information	✓	✓		
Confusion in terms of translation, e.g., vaginal ring	✓	✓		
Perceived usefulness in decision-support				
Help to understand available options	✓	✓	<i>'I learnt some new things after viewing this material, progestogen-only pill and combined pill, the explanations of them changed my views of them. Perhaps they don't have that many side effects, and compared to the male condom and female condom, they are much more effective in preventing pregnancy.'</i>	<i>'I think it's helpful when you're sitting there talking to them, absolutely, because if you are not a health practitioner who's terribly familiar with all the contraceptives as well, it's very helpful to have everything laid out, so you can just take them through it in a format.'</i>
Side-effect information help correct previously held misconceptions	✓	✓		
A resource in the Chinese language is useful	✓	✓	<i>'I feel it is necessary to have the Chinese resource, because for me [if in English], I have headaches just from reading them, can't absorb them at all, but with Chinese language, it is easy to understand'</i>	<i>'For a patient, it's a hell of a lot of information to read and it seems to sit somewhere in between the patient with no education about contraception and the doctor who knows all of this already'</i>
Can serve as a job-aid	✓	✓		
Overwhelming for women	✓	✓		
Perceived feasibility during clinical encounters				
Use for both Chinese and non-Chinese speaking women	✓	✓	<i>'I think it might have a better effect if you print it in a small booklet format and place it in the brochure board than making it only available when you go and ask the doctor. Because from my experience, if you are targeting Chinese women, they might feel shy and they might not yet at that stage to consult the doctor about [contraception], they might still use traditional methods, such as a condom or short-acting contraceptive pills. But if you leave [the booklet] there, they might read it out of curiosity.'</i>	<i>'If you're a very busy practice with very short consultation times, probably not [use the DA]. It would be something handed it to them and say, "Go home and read it. I'm not going to go through everything right now. Come back and ask me questions'</i>
Use during consultations if time permits	✓	✓		
Hand in printed DAs for women to read at home	✓	✓		<i>'I think my issue with this [DA] is for a doctor who works in this area, we already know this, we have quite a few good resources here.'</i>
Already know all information, no need for using	✓	✓	<i>'If you put them in the family planning clinics, basically very few Chinese women will see it, because very few Chinese women go to family planning clinics...if you disseminate it through the web, WeChat and free print material, Chinese women might read them'</i>	<i>'I would keep this in my top drawer and I'll just pull it out during the consultation and just talk about it, sort of walk through the different types of acting...So they've got a lot more choice about it.'</i>
Already using other materials or strategies for contraceptive counselling	✓	✓		
Make it available outside consultation rooms	✓	✓		
Disseminate via WeChat groups	✓	✓		
Disseminate via local newspapers or radio stations	✓	✓		
Disseminate via community or university seminars on family planning	✓	✓		
Suggestions for improvement				
Include the cost of contraceptive methods	✓	✓	<i>'I think it is a bit inappropriate to distribute it as you do with flyers because many people will subconsciously avoid this topic...if you put them as a brochure in the medical centres, I prefer it not to be too eye-catching, make it a bit covert, don't make it look too good from the outside either'</i>	<i>'just the website, nothing fancy. It doesn't need an app. I think there's too many apps now. And websites mean that wherever we work, we're down in this room or that room, or another practice, I can access it. If it's paper-based, then it will be in this room, I might not have it elsewhere. So it'd be easy to find it online'</i>
Include information on the contraceptive impact on acne	✓	✓		
Include information on non-contraceptive benefits of hormonal methods	✓	✓		
Include more pictures	✓	✓		
Transform into small booklet format	✓	✓		
Add a cover page	✓	✓		
Digitize the DAs in a website or an app format	✓	✓		

A tick '✓' represents that the corresponding feedback was expressed by participant/s from the associated group/s (Chinese women or healthcare providers)

categories of contraceptive methods and question-and-answer format for presenting key method attributes make it easier for them to glance over, to follow, differentiate, and compare methods. Participants from both groups described the PDA as informative and comprehensive. Some HCPs commented that the DAs list all the contraceptive methods available in Australia in an unbiased, equal manner and provide 'a very good comprehensive information on all the different contraceptive methods'. Some participants from both groups commented positively on the page containing the female reproductive system pictogram. They expressed that the pictogram is likely to catch the readers' attention, explains how the female reproductive system and contraception work, and reminds readers of the consequences of not using effective contraception.

As for negative aspects of the DAs, some HCPs found the eight-page DA package to be too long and contain too much information. They perceived that the DAs could be overwhelming for people with limited educational backgrounds or young people or those who had limited prior knowledge about contraception. They were concerned that people would lose interest in the DAs quickly due to information overload and would not read them all.

A few women also expressed concerns around information load, commenting that there was too much text and not many pictures. However, the majority of them did not express their concerns regarding the length or amount of the information. They described the information as being comprehensive and detailed. There were minor concerns about the translation (translated by HD and checked by ML). For example, some of them felt confused about the translation of 'vaginal ring', where when 'ring' is literally translated to Chinese, within the context of contraception, it usually referred to the stringless intrauterine devices (also referred to as Chinese ring).

3.2. Perceived usefulness in decision-support

Some women commented that the DAs helped them to understand the available options which they were not aware of before. Some of them noted that the side effects of some methods were not as harmful as they initially thought. They described that the DAs provided accurate and comprehensive information on all available options, their efficacy, advantages, and disadvantages, which would help them make informed decisions.

While the length and amount of information included in the DAs was still a concern, HCPs generally perceived that the DAs could serve as useful resources for women to view and understand the options when deciding on which method to choose from. Some HCPs explicitly expressed that the DAs could serve as a 'reference sheet', or a 'format' guide or a 'checklist' for organised contraceptive consultations for them and other doctors. Some women and HCPs commented that having contraceptive-related material in both the Chinese and English language is helpful due to the lack of Chinese language materials in this topic area.

3.3. Perceived feasibility during clinical encounters

HCPs were divided on their perceptions as to whether or not they would use those DAs if available. Some HCPs expressed that they would use the DAs with Chinese women or other people in general. When probed how they will be using the DAs, their description generally matched what was described in the training video accompanying the original 'Right For Me' DAs. The training video explains that the 'overall-types' page of the DAs is to be used to narrow down options and other pages to be selectively referred to for more detailed information and comparison when needed.

Some HCPs said that whether they would use these DAs during consultations or not would depend on the time availability, as they were concerned that those DAs were too long to go through in one consultation. Some commented that they would hand the DAs to the women to read at home before coming back for the next consultation. After being verbally described the training video content (which was not adapted) as to how to use the DA effectively, some HCPs agreed that the way it was described in the video 'makes sense' and suggested that a similar 'guide' on how to use them

would be helpful. Some HCPs commented that they were unlikely to use those DAs because they were already using other materials, or they knew all that information already and had their established strategies for contraceptive counselling, or they believed women would come in with a preference for a particular method.

Many of the women who participated felt that the DAs should be made available outside consultation rooms. They commented that they, and likely other Chinese migrant women, are unlikely to visit HCPs to ask for contraception related information and advice. Therefore, the best way to use and disseminate the DAs would be to place them in the waiting rooms of the clinics or community centres where women can read them while waiting. They also suggested using the internet, a popular Chinese messaging app (WeChat), and Chinese language media to disseminate these DAs to benefit the wider Chinese community.

3.4. Risk perception and preferred format for risk presentation

When participants were probed about their understanding of the probability words of side-effect likelihood, their interpretation of those words varied considerably (see supplementary file 2 for selected participant quotes). Some participants from both groups generally did not prefer the use of probability words, commenting that using words such as 'possible' can be confusing and could signal a lack of evidence to support such a claim.

When asked about their preferences for the format of side-effect likelihood information presentation, the majority of the HCPs and women indicated their preference for the numerical formats. Their preference for the exact format for the numerical presentation varied, with some preferring the percentage-format while others choose the frequency-format. Some HCPs and women commented that visualising the numbers using graphs could be a better option.

3.5. Suggestions for improvement

Women and HCPs suggested adding extra information, such as the cost of contraceptive methods and the non-contraceptive benefits of hormonal contraceptives. They also suggested including more pictures, for example, to demonstrate what the methods or devices look like. Some women and HCPs recommended digitising the DAs, either in a website format or app format, for the convenience of accessing and viewing. Some women suggested making DAs into small booklet format with a cover and not to make it too apparent on the cover that this material is about how to prevent pregnancy. As one of the women put it, 'not everyone is comfortable with openly talking about and obtaining information on this topic'.

4. Discussion and conclusion

4.1. Discussion

This study explored HCPs' and Chinese migrant women's perceptions of a suite of contraceptive-method DAs. Overall, the encounter DAs received positive feedback in terms of design, information presentation, and were perceived by both the HCPs and the Chinese migrant women as informative and comprehensive. Such results indicated that the acceptance, usefulness and feasibility of these DAs are promising and can be further improved by incorporating the end-users' suggested changes.

The main concern around information presentation in the DAs came from the HCPs. The results highlighted that HCPs' views on the feasibility of DAs were likely to be influenced by the provision of clarification on how to use the DAs or address their concerns around practicality issues. A recently published article related to the 'Right for Me' DAs also found that providing clinical staff with training on how to correctly use those DAs were among the positive facilitators of implementation [23]. Also, the main concern around information presentation in the DAs came from the HCPs, with the perception that the information load of the DAs could be overwhelming for women who would be unlikely to read them all. On the

contrary, most women did not express this concern. Such incongruity in the women and providers' opinions around information load and presentation was similar to the findings of another study, which explored the patients and providers' perceptions of an online tool for contraceptive information called Bedsider [24]. This study showed that most young, Black and Hispanic participants perceived the Bedsider tool to be comprehensive, trustworthy and empowering [24]. In contrast, HCPs regarded such a tool as too complicated, unprofessional, and offensive [24]. Similar findings in patient-provider divergent views on the value and usefulness of health information and communication materials were also reported elsewhere [25,26]. In one study, the majority of Spanish speaking safety-net population viewed a bilingual online patient portal as useful in strengthening the relationship with their providers and improving the quality of care, whereas healthcare providers were overwhelmingly reluctant to recommend the portal to patients due to concerns about time and reimbursement [25]. A potential explanation is that HCPs may underestimate patients' interest and ability in reading and comprehending health materials. Whether such underestimation is likely to vary depending on the patient's cultural and racial background needs further investigation. Another explanation is that patient participants are more engaged in the issue than average patients and likely to be more accepting of the subject material.

The DAs that were adapted were encounter DAs that were specifically designed to be used during clinical counselling sessions [27]. However, women expressed their preference for accessing contraceptive-choice DAs outside the clinical encounters. HCPs also revealed the opportunistic nature of contraceptive consultations with Chinese migrant women [28]. Therefore, the DAs may also need to be disseminated through other web, social media, or community channels that are most likely to be accessed by Chinese migrants. Such dissemination of DAs may not necessarily lead to SDM between the women and HCPs as initially intended. However, it is likely to improve contraceptive-method awareness and potentially lead to informed decisions.

This study had several limitations. We did not collect information on women participants' educational attainment. However, more than half ($n = 13$) of women participants are international students studying at tertiary educational institutes. It is likely that those women in our study had higher literacy and numeracy levels compared to the general migrant Chinese population. HCPs, and women alike, were recruited from the Sydney metropolitan areas only, therefore, study findings may not be generalised for HCPs and women living in other parts of Australia. Our study results should be interpreted in light of the demographic characteristics of study participants.

4.2. Innovation

This study is the first to evaluate the acceptability and perceived feasibility of patient decision aids with members of a migrant community in Australia. The findings highlighted the need for disseminating the DAs both within and outside the clinical settings. It also highlighted that further training and guidance on how to use the DAs is likely to address HCPs' concerns around the information load and length of the DAs, increase perceived feasibility and encourage uptake in practice.

4.3. Conclusions

The DAs received positive feedback from women and HCPs in terms of information presentation and decision support, suggesting potential value in assisting women in making informed decisions about contraceptive methods.

Ethical approval and consent to participate

Ethical approvals were obtained from the University of Sydney human research ethics committee [ref: 2018/159] and Family Planning NSW Project Ethical Risk Team (PERT) [ref: PERT 25]. All participants read the participant information statement and consented to participate.

Availability of data and materials

The data generated during the current study will be available from the corresponding author on reasonable request and in accordance with the consent and ethical approval.

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Declaration of Competing Interest

Deborah Bateson has been supported to attend educational events by Bayer Healthcare and MSD, both are manufacturers of contraceptives, and have attended advisory committees for these companies as part of her role at Family Planning New South Wales. Rachel Thompson has received research funding to study shared decision-making and shared decision-making interventions, including contraceptive care; she receives royalties from Oxford University Press from the sale of a book on shared decision-making and owns copyright in several decision aids, including a decision aid on contraception. All other authors declare that they have no conflict of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pecinn.2022.100031>.

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