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# Using the theoretical domains framework to explore primary health care practitioner's perspectives and experiences of preconception physical activity guidance and promotion.

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### **Abstract**

Preconception physical activity is one of the main predictors of continued engagement in physical activity during and after pregnancy and subsequently, improves the health of women and their child. In the UK, guidance states that Primary Care health Professionals (PCPs) should assess and discuss the lifestyle of preconception women, in routine appointments, in order to address potentially modifiable risk factors. However, knowledge and provision of this guidance in the UK is unknown. It is not clear if individuals actively seek preconception guidance from PCPs, what guidance they request, and whether PCPs have the knowledge and skills to provide this support in line with current guidelines. This research aimed to explore current practice and the perspectives of PCPs in delivering physical activity guidance to preconception patients. Fifteen semi-structured interviews were conducted with PCPs (GPs and community pharmacists) in the UK. Data was analysed using the Theoretical Domains Framework (TDF). The key TDF domains which emerged from analysis were 1) Environmental context and resources, 2) Knowledge, 3) Social/professional role and identity, 4) Social influences, 5) Beliefs about capabilities, 6) Beliefs about consequences, 7) Reinforcement, and 8) Emotion. Our findings showed patients did not frequently present solely for preconception physical activity guidance, but occasionally enquired when consulting about another issue. PCPs lacked motivation to implement physical activity guidance due to the perception that their advice would have no impact on behaviour change. There were a number of perceived opportunities to implement preconception physical activity guidance in primary care including sign posting and referral to advice such as online resources. These findings illustrate the need for consistent and specific preconception lifestyle and PA guidance for PCPs, with an emphasis on behaviour change techniques and a patient

self-directed intervention, which PCPs can signpost women to may be most appropriate and feasible.

**Keywords:** preconception care, physical activity, primary health care, general practitioners, pharmacists, theoretical domains framework

## 1. Introduction

The preconception period is defined by the World Health Organisation as ‘any time before an individual of reproductive age conceives’ (2012). Preconception health behaviours are important, as there is a clear link between women’s preconception health, their reproductive health and their children’s health (Adamo et al., 2013; Stephenson et al., 2018). However, there is little research detailing how best to provide and promote preconception care.

Physical activity (PA) is a behaviour that is key for enhancing health and wellbeing of preconception individuals. PA can help control weight, boost mood and self-esteem (Warburton, Nicol & Bredin, 2006) as well as reducing risks of infertility and adverse reproductive outcomes such as preeclampsia, pre-term birth and gestational diabetes (Wise, Palmer, Heffner, & Rosenberg, 2010; Jack et al., 2008; Gaston & Cramp, 2011). However, many preconception women have low PA engagement (Bortolus et al., 2017).

A publication series in the Lancet (Stephenson et al., 2018), the BMJ best practice guide (BMJ, 2017), expert groups in Europe (Zeitlin et al., 2013) and Public Health England (2018) have all highlighted the importance of preconception care. Guidelines to support health care professionals deliver preconception care exist in a few countries including the UK, (NICE, 2017) however it is not clear whose role and responsibility it is to be delivering preconception care and exactly what it should entail. Given the accessibility of primary care in the UK, health professionals working in primary care may be best placed to deliver preconception care, including PA guidance (Callegari, Ma, & Schwarz, 2015).

## Health Sciences

Therefore, the aims of this study were to explore 1) the current practice and the perspectives of Primary Care health Professionals (PCPs) in delivering preconception PA guidance and 2) the need for an intervention to support preconception women to be physically active.

## **2. Methods**

### ***2.1. Study design and participants***

The study used purposive and convenience sampling of General Practitioners (GPs) and Community Pharmacists (CPs). Participants were recruited through a primary care conference, a regional mailing list and word-of-mouth. Participants took part in face-to-face or telephone semi-structured interviews with a researcher (AS). The study received ethical approval from The University of Stirling General University Ethics Panel.

### ***2.2. Data collection***

A topic guide, developed through an extensive literature search and application of the Theoretical Domains Framework (TDF, Cane, O'Connor & Michie, 2012), was used to facilitate interviews (Table 1). Interviews were audio recorded (duration 10-30 minutes), transcribed verbatim and checked for accuracy. Pseudonyms were used for identifying information to protect the anonymity of participants. In addition, all participants completed a demographics questionnaire.

[insert table 1 here]

### ***2.3. Data analysis***

Deductive analysis was used to code participants' responses into the relevant TDF domains (Cane, O'Connor & Michie, 2012). The TDF helps analyse the results to explain behaviour change and the contextual factors which influence the implementation of evidence based practice in health care settings. Thematic analysis with an inductive approach (Braun &

Clarke, 2006) was then used to explore potential components for a preconception PA intervention. NVivo 11 software was used to manage coding and analysis of the data. The data was coded by one researcher (xx), with another researcher (xx) coding a 20% sample of transcripts and any disagreements were discussed, and all coding was checked thoroughly by another researcher (xx). Themes were then generated by xx and discussed in detail with xx and xx.

### **3. Results**

#### ***3.1. Participants***

During recruitment all but one potential participant took part after being provided with the study materials. This potential participant declined due to being a relief pharmacist. All PCPs (N=15), who returned their consent form, completed the interview. All interviews were conducted by one researcher (xx).

The fifteen interviews were conducted between February-July 2017 with 14 participants based in large Scottish cities and one in a rural area of Scotland (8 GPs, 7 CPs). This included four male and four female GPs with a mean age 38.3 years (range: 33-48), and five male and two female CPs with a mean age of 42.4 years (range: 36-57). GPs had a mean of 11.3 years professional experience (range: 5-22) and CPs had a mean of 17.0 years professional experience (range: 8-35). At the time of recruitment all PCPs were working in practice, seven full-time and eight part-time.

#### ***3.2. TDF analysis***

Domains were considered relevant on the following criteria: the beliefs frequently occurred across interviews, presence of conflicting beliefs, and evidence of strong beliefs that could affect the target behaviour (Atkins et al., 2017). The eight theoretical domains identified as being relevant through analyses and associated belief statements are presented in Table 2.

[Insert Table 2 here]

### 3.2.1. Environmental context and resources

*Preventative care is not a priority in primary care.* Both groups (CPs and GPs) indicated that the current health service was not designed to support or prioritise health promotion and preventative care but to treat illness and ‘fire-fight’.

‘...the health care system having a focus on treating disease, rather than preventing disease, and uhm, the health care system being under-resourced...’ (GP1)

*Time and resource pressures.* Pressures within health care were reported by almost all GPs, who believed they already have too many responsibilities, but not by CPs. The majority of GPs and CPs agreed that PA is important and in principle they like to encourage it. GPs indicated that resource pressures mean that it is not always feasible for them to provide PA guidance or have sole responsibility in delivering a PA intervention.

‘If you’re speaking specifically about general practice, barriers would be time and conflicting demands, it’s no secret that general practice and primary care in the UK is struggling as a whole’ (GP3)

*Patients planning a pregnancy do not frequently approach PCPs.* Both GPs and CPs highlighted that individuals did not frequently approach them for preconception PA guidance. Patients often presented to primary care with another health-related matter and the opportunity to discuss preconception lifestyle guidance, including PA was taken.

‘It’s not so much coming in, neither of them came in specifically about that, it came up with other things because they were trying to get pregnant and they hadn’t been able to get pregnant’ (GP6)

CPs believed they had a role in health promotion; however, their environment and patients’ perception of their role limited what guidance they would opportunistically provide. Despite



reporting fewer time pressures than GPs, most CPs reported not feeling comfortable with opportunistically providing health promotion.

‘people can be quite funny if you start talking to them about physical activity without them actually initiating some sort of query on that’ (CP5)

### 3.2.2. Knowledge

*Unaware of any guidelines on preconception care and PA.* The workplace of one GP had a preconception protocol and two CPs were aware of preconception guidance on folic acid. However, the majority of participants had a lack of awareness of specific guidelines because they did not have a reason to actively search for guidelines.

‘Yeah I’ve never really had to look for it and eh just... yeah I’ve never really had to look for it, specific guidelines’ (CP4)

*Majority of PA guidance for the general population is transferable to preconception.* Most participants had not searched for guidelines on preconception PA as they believed that general population guidance was transferable to preconception patients. Whilst, they supported PA promotion, they lacked specific evidence-based knowledge on the importance of PA for preconception. Some acknowledged the benefits of preconception PA guidance for mother and baby, but most were unaware of any additional benefits for preconception patients engaging in PA.

‘I guess if it is beneficial to them then yes you probably should argue that there is a need for that type of advice and I guess you could argue that physical activity is good for anyone, you know despite whether you’re becoming pregnant or not’ (CP3)

*Preconception patients may not be aware of the importance of preconception PA.* Participants recognised that patients may not be aware of the importance of preconception care or that advice in preparation for pregnancy may be available. Most participants assumed that

preconception patients would independently source information, such as through their peers or the internet.

‘I think most people probably look online for information that they needed to be honest’ (CP4)

### *3.2.3. Social and professional role & identity/Social influences*

*Would offer guidance opportunistically/all PCPs should be promoting PA.* CPs were less likely than GPs to provide opportunistic guidance – it was suggested the role of the CP was primarily dispensing rather than providing lifestyle advice. Exceptions were when advice related to an illness or when patients asked for it.

‘I guess people when they are trying to get pregnant they don’t think ‘oh I’ll go to the pharmacy and find out what I can find out, it’s probably not something they’d think about’ (CP3)

Most participants believed it was in the remit of PCPs to provide some form of healthy lifestyle guidance to those who would benefit from it. However, they did not believe they should be solely responsible for delivering this information and would prefer to signpost patients to the appropriate sources.

*Difficulties identifying preconception patients.* Participants highlighted the difficulties identifying preconception patients; the questions they would ask were limited by invasion of privacy and professional boundaries. Fear of offending was a barrier preventing participants providing opportunistic guidance, in which weight and image were deemed sensitive topics. This was a greater issue for CPs as they were working in a public environment and were less likely to have built a relationship with patients when compared GPs.

‘it would be a difficult one to approach because you don’t really know what people’s, you know, situation is, what their intentions are, if they are looking to conceive or if they are just

taking a pregnancy test for... peace of mind or checking if they've not conceived you know'  
(CP4)

*Patient self-management is suited for health promotion such as increasing PA.* Many participants believed that PCPs have responsibility to promote PA. However, due to professional boundaries and environmental limitations, some participants suggested self-management options as having greater potential.

'primary care is not right at the bottom of that pyramid, it's patient self-management' (GP3)

#### *3.2.4. Beliefs about capabilities*

*Reluctant to give guidance as it will not translate into behaviour change.* Both groups were concerned about providing guidance to those who may not be open to it. They recognised that lecturing patients rarely translates to lasting behaviour change and that more skilled behavioural change techniques were required.

'some patients as well they don't really, I don't think they really engage that much you know, talking about lifestyle interventions' (GP7)

#### *3.2.5. Beliefs about consequences*

*Belief that guidance on PA may not be as effective as other sources of information.* Some participants did not believe they should be responsible for delivering healthy lifestyle interventions and did not have expertise to do so. GPs tended to be more holistic in addressing a range of health behaviours such as diet, PA and alcohol intake, whereas CPs tended to focus on nutrition and supplements. Apart from those with a personal interest in PA and/or women's health, many felt other professionals would be more effective at providing preconception PA guidance, such as physiotherapists and personal trainers.

‘I’m sure physios would be better placed to do it, or anyone who knows about exercise probably the best place to do it, I mean we’re not qualified to teach people how to exercise other than to say “it’s good to exercise”’ (CP7)

### *3.2.6. Reinforcement and Emotion*

*Targeting this group is useful as they have an added incentive.* Some GPs highlighted the added benefits for preconception patients to engage in PA. Emphasising the additional benefits of adopting healthy lifestyles before pregnancy is key to engaging patients in PA.

‘this sort of added incentive for this added priority and we certainly know that the lifestyle the mother, the lifestyle of the environment in utero affects people’s outcomes later on in life so it is an important group to target’ (GP2)

*Anxious patients are more proactive in seeking preconception guidance.* Some participants reported that anxious individuals were more likely to approach PCPs to seek guidance surrounding unpleasant emotions surrounding pregnancy. This is linked to the notion of preconception patients only presenting to primary care in relation to another health issue or concern.

‘I think that’s the situation we tend to see women in, where they are starting to get a concern that they are having difficulties conceiving’ (GP5)

## **3.3. Potential interventions**

Thematic analysis determined the two themes regarding potential preconception PA interventions (Targeting the population, Intervention delivery), described below.

### *3.3.1. Targeting the population*

The majority of participants recognised a need for intervention and suggested that preconception patients should be targeted as one group. Some participants highlighted that

care was required for those from lower socioeconomic backgrounds, would be harder to reach and had different needs to more affluent patients.

‘I think part of the problem, with... with part of the people who are not economically affluent are they know that they should be doing the advice and taking more exercise but it’s putting that advice into practice that becomes more difficult...you’ve got to provide people with the you know, advice but also ways in which they can put that advice into practice’ (GP5)

PCPs discussed opportunities where they could target preconception patients.

‘...nurses during routine cervical screening perhaps, when getting contraceptive checks, I mean any professional that’s providing a contraceptive check or sort of uhm, any professional that sees the patient with, or child bearing potential’ (GP1)

### *3.3.2. Intervention delivery*

Suggested formats for intervention included promoting accessible and reliable online sources and encouraging PCPs to provide a brief intervention opportunistically.

‘it’s like one of the things we don’t do, we don’t have a ‘if you’re planning on becoming pregnant, what we think you should be doing’, and that is something which would be useful’ (CP10)

A favourable option for both groups appeared to be an intervention that PCPs could signpost to, but ultimately based in the community where patients self-refer themselves.

‘It needs to be out in the community where people are, where people go’ (CP14)

## **4. Discussion**

### *4.1. Summary*

This study explored current practice and perspectives of PCPs in providing preconception PA and lifestyle guidance. Numerous barriers to providing preconception PA guidance were

identified including responsibility of delivering guidance, beliefs over the importance of preconception PA, ability to facilitate behaviour change, and identifying and targeting the preconception population. Whilst there was general consistency across the identified domains between GPs and CPs advocating engagement in PA, differences became apparent between groups regarding their role in providing preconception PA guidance. These differences were often a result of perceived roles and abilities; CPs reported to have less time pressures and more opportunity to deliver preconception PA but felt less comfortable in providing this type of guidance in comparison to GPs.

#### ***4.2. Findings in relation to the literature***

Participants recognised the importance of preconception PA and care, yet appeared hesitant to pursue provision. Resource pressures were highlighted by GPs as restricting their ability to implement preventative care. These pressures are commonly identified constraints to promoting preconception health in primary care (Mazza, Chapman & Michie, 2013; M'Hamdi et al., 2017).

PCPs have an important role in promoting health and physical activity. However, given resource constraints treating illness is prioritised (Mittelmark & Bull, 2013), and consequently there is often a knowledge-gap surrounding PA. It has been suggested that GPs have limited knowledge of guidelines of PA or how to implement them (WHO, 2011; CMO, 2011; Chatterjee, Chapman & Varney, 2017). Participants were unaware of any official guidelines or the need to prioritise PA for preconception patients although they were aware of preconception care, a common finding in the literature (Bortolus et al., 2017; van der Zee et al., 2013). Implementing campaigns or training to heighten awareness and knowledge of preconception PA may have some impact; however, PA guidelines require to be effectively disseminated before PCPs can apply them to more specific populations.

To influence practice, PCPs need to feel empowered and have agency to deliver or signpost to PA guidance. For example, Healthy Conversation Skills is a training initiative to help health professionals develop their behaviour change skills (Barker et al., 2018). Training such as this may benefit PCPs as it highlights the value of providing preconception PA guidance, and could aid them in promoting preconception PA and signposting individuals to the relevant resources. However, underlying fears of overstepping professional boundaries and the wider discourse surrounding preventative medicine needs to be considered if training and interventions are to be impactful.

Despite a number of barriers, there are many opportunities for PCPs providing preconception PA guidance; however, these vary between individual practitioners. Existing literature reports the avoidance of responsibility to preconception care, primarily due to preconception care not fitting into a specific medical speciality and there being no standardised provision of care in the UK (Stephenson et al., 2014; Tuomainen et al., 2013).

A patient self-referral intervention accompanied by the support and advertisement from PCPs was proposed by many. PCPs are well placed to signpost as patients view them as a trusted source of information (Mazza, Chapman & Michie, 2013). An intervention that takes into account the range of theoretical domains is likely to be effective, as suggested by a similar study which examined PCPs HPV-related practice (McSherry et al., 2012).

#### ***4.3. Strengths and limitations***

Different perspectives of preconception guidance in primary care were obtained, enabling comparisons across different areas in primary care, highlighting current provision and the opportunity for improvement. The TDF has been used previously to explore the gap between recommended and current practice of PCPs (Murphy et al., 2014). Incorporating the TDF

ensured the data was coded and analysed using a recognised framework and findings can be applied easily during the intervention development process for future studies.

This exploratory research involved a small sample size and the findings were the personal opinions of the PCPs interviewed, and may not represent all PCPs. The research focused on preconception PA guidance for women only, and did not consider the health of men, who are an under researched group in preconception care research. Practice nurses were not interviewed and thus we missed the opportunity to explore perceptions of intervention during smear tests. Despite these limitations, the findings provide a key insight and may influence the development of future preconception PA interventions.

## **5. Conclusion**

This study provides insight into the perspectives and practices of PCPs regarding preconception PA guidance. Current practice is opportunistic. PCPs acknowledge the importance of this area but do not have the resources or opportunity to deliver specific care. There are opportunities to providing preconception PA support and our findings present potential intervention features which could contribute to the development of a preconception PA intervention in the UK. Our study confirms the need for an intervention to promote preconception PA, potentially through a self-referral method that PCPs can signpost to.

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## **Declaration of interest**

The authors reported no conflict of interest.

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**Table 1. Interview topic guide**

<ul style="list-style-type: none"> <li>• Can you tell me a bit about your background, particularly your practice? <ul style="list-style-type: none"> <li>○ Do you have any particular interests (clinically)?</li> </ul> </li> <li>• What does the GP surgery/pharmacy service consist of? <ul style="list-style-type: none"> <li>○ Do you know roughly the size of the practice population?</li> <li>○ Rural/urban and affluent/deprived?</li> <li>○ Teaching practice/ pharmacy?</li> <li>○ Number of health care professionals</li> <li>○ Any specialist services especially obstetrics &amp; gynecology or sexual &amp; reproductive health (<i>If no, why?</i>)</li> <li>○ Typical work hours</li> </ul> </li> <li>• Have you heard of the term pre-conception? Do you hear it often in your practice/profession?</li> <li>• What lifestyle guidance is currently provided by you and or your practice/pharmacy to women with the intention of becoming pregnant? <ul style="list-style-type: none"> <li>○ Do women come looking for this information? How many approx.?</li> </ul> </li> <li>• Are there specific groups of women more likely to seek this information? How often would you be presented with women who are trying to get pregnant? <ul style="list-style-type: none"> <li>○ What are their typical concerns?</li> <li>○ What type of health promotion information would be provided?</li> </ul> </li> <li>• Are you aware of any guidelines or advice for professionals providing information about pre-conception health? If so what are these? <ul style="list-style-type: none"> <li>○ Any training?</li> </ul> </li> <li>• Do you think there are gaps in information provision? <ul style="list-style-type: none"> <li>○ What are the gaps and how should these be addressed?</li> <li>○ If yes, what kind of format should the information be provided?</li> </ul> </li> <li>• Who should be providing preconception PA advice? <ul style="list-style-type: none"> <li>○ Pharmacists, GPs, or other primary health care practitioners</li> </ul> </li> <li>• Do you think there are any barriers to providing this advice?</li> <li>○ Do you think anything would help health professionals provide this advice?</li> <li>• In terms of PA for preconception women, do you think there is a need for intervention?</li> <li>○ If so in what format? Targeted at any particular groups?</li> </ul>
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**Table 2.** Summary of with the current practice and the perspectives of GPs (n = 8) and CPs (n = 7) in delivering preconception PA guidance in relation to the TDF

Domain	Specific belief statement	Frequency for GPs	Frequency for CPs
Environmental context and resources	Preventative care is not a priority in primary care	4	1
	Time and resource pressures	7	0

	Preconception patients often present to primary care for guidance alongside another health issue	4	5
	Those seeking preconception guidance tend to be more affluent and knowledgeable	3	2
	Patients planning a pregnancy do not appear to frequently approach PCPs for PA and lifestyle guidance	3	4
Knowledge	Unaware of any guidelines on preconception care and PA	4	6
	Awareness of the additional benefits of encouraging preconception PA	5	1
	Majority of PA guidance for the general population is transferable to preconception	5	3
	Preconception patients may not be aware of the importance of preconception PA or that they can approach PCPs for guidance	6	4
Social/professional role and identity	Would offer guidance opportunistically	6	1
	Would find it inappropriate to discuss PA unless relevant to an illness or initiated by a patient	2	4
	Patient self-management is suited for health promotion such as increasing PA	2	3
	All PCPs should be promoting PA	4	3
	Difficulties identifying preconception women	2	3

Beliefs about capabilities	Reluctant to give guidance as it will not translate into behaviour change	5	3
Social influences	Pregnancy intentions and PA are sensitive topics	2	3
Beliefs about consequences	Belief that their guidance on PA as a PCPs may not be as effective as other sources of information	3	1
Reinforcement	Targeting this group is useful as they have an added incentive	3	0
Emotion	Anxious patients are more proactive in seeking preconception guidance	2	1