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Facilitators and barriers to pregnant women's participation in research: A systematic review

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ABSTRACT

Background: Although there is consensus among many that exclusion of pregnant women from clinical research should be justified, there is uncertainty as to whether and why pregnant women themselves would be willing to participate even if they were found to be eligible. The objective was to identify the reasons why pregnant women participate in clinical research and thereby to distinguish between facilitators and barriers.

Methods: We conducted a systematic review of articles regarding pregnant women's reasons for participation in clinical research. We used the PubMed/MEDLINE, EMBASE, PsycINFO and CINAHL databases and retrieved additional articles through manually searching the reference lists. We included all articles that reported on pregnant women's reasons for participation in clinical research. We accumulated all reasons that were mentioned in the total of articles and collated them to themes, classifying these themes as a facilitator or a barrier.

Results: The search identified thirty articles that met the inclusion criteria. Themes classified as facilitators: aspirational benefits, collateral benefits, direct benefits, third party influence and lack of inconvenience. Themes classified as barriers: inconveniences, risks, randomisation, lack of trust in research enterprise, medical reasons and third party influence.

Conclusions: Pregnant women report mostly altruistic and personal reasons for their willingness to participate in clinical research, while barriers primarily relate to inconveniences. It appears that pregnant women's described reasoning is similar to the described reasoning of non-pregnant research subjects. Enhancing the facilitators and overcoming the barriers is the next step to increase the evidence-base underlying maternal and foetal health.

Contents

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Statement of significance

Problem

It is uncertain what the facilitators and barriers are that affect pregnant women's willingness to participate.

What is already known

There is consensus that pregnant women should be included in clinical research.

What this paper adds

Altruistic and personal reasons are most frequently cited as facilitators; inconveniences are primarily cited as a barrier.

1. Introduction

Over the past decades, pregnant women have been underrepresented in clinical research. This has led to a problematic situation: treatments and medications for pregnant women are often not evidence-based while women do need them during their pregnancy. For example because of obstetric illnesses such as preeclampsia or gestational diabetes, as well as chronic conditions such as hypertension, depression, or asthma.[1,2] The percentage of pregnant women taking medications for which there is no substantial data on safety, efficacy and foetal risk evaluation may currently be as high as 84–99%.[3–5] To illustrate, in the Unites States almost one half of all pregnant women receive prescription drugs from categories C, D, or X of the U.S. Food and Drug Administration (FDA) risk classification system, used to determine the potential to cause birth defects if used during pregnancy.[6,d] The lack of evidence is most prevalent in pharmacological research. Yet, non-pharmacological research in pregnant women is also scarce, as demonstrated by systematic reviews that often have to rely on very small numbers of studies which hamper evidence-based recommendations.[7,8] It is argued that there is a vast need for more research aimed at pregnant women in need of treatment and the only way such research can be performed is by including pregnant women in clinical research, which has been promoted for years by bioethicists, pharmacologists and regulators.[2–4,9] But despite various efforts to challenge underrepresentation of pregnant women in research, exclusion remains common practice.[10]

There are different regulatory and clinical barriers sustaining the underrepresentation of pregnant women, such as concerns about harming the foetus, liability fears, research design issues and collective memory of historical tragedies such as diethylstilboestrol and thalidomide, even though neither of these tragedies comprised clinical research.[11] But even if all these barriers would be solved, an open question that remains is whether and why pregnant women themselves would be willing to participate even if they were found to be eligible.[1,10,11] Inclusion depends on the willingness of a target group to enrol in research and before we can speak of (routine) inclusion we need to know if pregnant women are interested in participation at all and what reasons they report as barriers to participation. Identifying the facilitators and barriers that influence pregnant women's willingness to participate can inform development of clinical research aimed at pregnant women. For example, if it transpires that pregnant women are not willing to participate in certain types of clinical research, developing such research, with all the costs it entails, might not be warranted. The objective of our paper was therefore to identify and systematically review all articles regarding pregnant women's reasons to participate in clinical research.

2. Methods

2.1. Design

We conducted a systematic review of pregnant women's reasons for participation in clinical research for which we used the review of reasons[12] as starting point and combined it with the thematic synthesis methods for the categorisation of the reasons,[13] thereby incorporating the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.[14]

2.2. Search strategy

A PubMed/MEDLINE, EMBASE, PsycINFO (February 2016) and CINAHL (October 2016) search was conducted to identify relevant studies. Additional articles were retrieved through cross-referencing by way of manually searching the reference lists. We used a broad search strategy including the following range of keywords: (challeng* OR reason* OR motivation* OR view* OR decision* OR attitude* OR willing* OR consideration* OR concern* OR barrier*

[d] Category B: "animal reproduction studies have failed to demonstrate a risk to the foetus and there are no adequate and well-controlled studies in pregnant women"; Category C: "animal reproduction studies have shown an adverse effect on the foetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks"; Category X: "studies in animals or humans have demonstrated foetal abnormalities and/or there is positive evidence of human foetal risk based on adverse reaction data from investigational or marketing experience, and the risks involved in use of the drug in pregnant women clearly outweigh potential benefits".

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