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A Socio-Legal HRI Perspective

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ABSTRACT

Perinatal depression affects around 20% of women, and can occur anytime between the start of the pregnancy to one year after giving birth [1]. As a preventative measure, screening usually occurs by a medical professional at least once during the pregnancy, to evaluate whether the patient is experiencing perinatal depression [1]. However, pregnant people experiencing perinatal depression may feel stigmatized by society if they were to admit to having certain feelings about their pregnancy [2]. Subsequently, they may repress their feelings, which could result in their condition being left undiagnosed, and thus having to cope with perinatal depression alone [1,2].

Socially assistive robots in mental healthcare could therefore be advantageous for patients. It has been shown before that people, in some situations, are more inclined to disclose their feelings to a virtual agent than another human [3]. Additionally, there is supporting evidence that socially assistive robots may be beneficial to patients in a mental healthcare setting [4]. These findings suggests that people experiencing perinatal depression might, under certain conditions, be more willing to talk to a socially assistive robot about their symptoms rather than to a medical professional. However, this requires an investigation, especially as there is a need to reflect on which norms are being (re)configured into the robot to consider the status quo around perinatal depression [5]. In this work, we will explore the current social norms around perinatal depression in Sweden, in order to challenge what data the robot's skills will be modelled on. This could enable a safe environment for people to disclose their symptoms, if people prefer to engage with an assistive robot rather than a medical professional, to obtain appropriate medical support after screening.

We propose that an interdisciplinary approach is necessary to better understand the normative gender aspects of automating perinatal depression-care in socially assistive robots and how to take them into account at design stage. Consequently, the aim is twofold: firstly, to understand the existing normative gender aspects within perinatal depression, and secondly, to enable the socially assistive robot to "normatively adapt" to the patient. Both, we argue, are vital in order to automate trustworthy perinatal depression assistance within socially assistive robots, as well as overcome the current social prejudices attached to the condition.

Despite regulations attempting to modify discriminatory societal behavior [6], there are perpetuating social prejudices around pregnancy. These social prejudices, which form social norms, will likely constitute part of the datasets used to train robots' computational abilities. This becomes an issue once automated, as the AI system within the robot may replicate and amplify such norms [7]. To challenge this, the socio-legal perspective facilitates an overview around governance issues surrounding gender fairness in AI, as well as gender norms within AI and healthcare specifically. Simultaneously, the Human-Robot Interaction (HRI) perspective enables the development of gender fairness in assistive robots within the perinatal depression setting.

The coupling of disciplines, that is socio-legal and HRI, allows to combine forces in order to challenge these current norms before automating them. Furthermore, it creates a framework to achieve a HRI design fit for assistance and "normative adaptability" in the context of perinatal depression. Accordingly, we are planning interviews with domain experts in people's pregnancy (during and after the pregnancy), such as psychiatrists, gynecologists, gender studies experts, as well as users, to gain their own understanding to critically scrutinize and implement gender fairness in the design.

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