

Using artificial intelligence can improve pregnant women's health

November 4 2020



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Researchers from the University of Seville have carried out a rigorous and detailed analysis of how artificial intelligence has been used with pregnant women over the last twelve years. The analysis confirmed that

disorders such as congenital heart birth defects or macrosomia, gestational diabetes and preterm birth can be detected earlier when artificial intelligence is used. In the latter case, studies into cases involving artificial intelligence found a correlation between the number of pre-term births and the environmental pollution to which the pregnant women had been previously exposed.

"There is growing interest in the application of [artificial intelligence](#) in obstetrics and gynecology. These applications of AI can not only monitor [women's health](#) during pregnancy, but can also help to improve the universal provision of [health](#) services, especially in the most disadvantaged areas. This field therefore contributes to improving both individual and [public health](#)," says University of Seville researcher María del Carmen Romero.

Furthermore, this work reveals the almost total lack of studies where emotions are taken into account as input parameters in risk prediction models in pregnancy (only 1.28% of the studies analyzed). Moreover, very few studies look closely at the pregnant woman's mental health (only 5.1% of the studies analyzed), despite it having been shown that the woman's psychological health is correlated with the risk of suffering certain diseases typical of pregnancy. Pregnancy is a vital state that brings with it the need for change and new learning, potentially causing anxiety, fear, worry, and even depression in women.

Systems based on affective computing could allow emotional interaction with the pregnant woman and, for example, detect emotional changes and make it possible to offer guidance or recommendations, which the system would previously have received from doctors. This can make the patient feel safer and closer to her health service and can reduce the usual feelings of anxiety or worry that sometimes lead to physical problems.

"Given that there is previous scientific evidence that supports the idea that the [emotional state](#) and mental health of the pregnant woman can influence the occurrence of risks in pregnancy, our study highlights what is a very interesting multidisciplinary research niche for affective computing in the field of health and well-being of [pregnant women](#)," the researcher adds.

More information: Andreea M. Oprescu et al, Artificial Intelligence in Pregnancy: A Scoping Review, *IEEE Access* (2020). [DOI: 10.1109/ACCESS.2020.3028333](#)

Provided by University of Seville

Citation: Using artificial intelligence can improve pregnant women's health (2020, November 4) retrieved 20 April 2024 from <https://medicalxpress.com/news/2020-11-artificial-intelligence-pregnant-women-health.html>

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