

How AI Can Improve Your Mental Health During Pregnancy

A month back, a close colleague called to inform me that he had admitted his wife to a mental hospital. Here is the sad part: just four months back, the wife had given birth to a beautiful baby girl.

What might have gone wrong, you ask? Your answer here is as good as mine, but it definitely had something to do with the psychological distress some mothers experience after childbirth. More specifically, postpartum depression.

If science has taught us one thing is that pregnancy is one of those periods when women experience mixed emotions, which puts them at risk of mental distress and illnesses. After giving birth, the risk is still present, if not worse.

In 2019, the [World Health Organization](#) (WHO) reported that “globally, 10% of pregnant women and 13% of women who have just given birth experience a mental health disorder, primarily depression.” This report also indicates that some of the women experience both depression and anxiety simultaneously, placing their wellness at risk.

Another [WHO report](#) also noted that in developing countries, the cases are even higher as 15.6% experience mental health problems during pregnancy, while 19.8% of the cases are reported after childbirth.

Luckily, we live in a highly innovative world, especially today when Artificial Intelligence (AI) is transforming life before our eyes. If you are considering starting your pregnancy journey, maybe you should understand how AI systems such as [BlueSkeye](#) can improve your mental health during and after pregnancy periods.



The Unique Mental Health Challenges of Pregnancy

During pregnancy and after giving birth, there are several unique mental health challenges you look out for, as they can affect you and your baby's health negatively. These mental health problems vary from one person to another, depending on their situation. Here are some of the most common ones:

- **Hormonal Changes:** The hormonal changes take shape in a woman's body during and after pregnancy and can lead to hormonal imbalances. Such changes can negatively impact their health and well-being.
- **Barriers to Seeking Help:** Some mothers find it challenging to seek mental health services despite going through psychological stress. Some of these barriers include education and finances, which prevent them from seeking professional help.

In recognition of these challenges, some companies that model AI systems have focused their products on addressing mental health concerns. These firms, including [BlueSkye AI](#), work on developing AI systems whose responses are specifically tailored for people who face the risk of psychological stress.

What is the BlueSkeye AI System

[BlueSkeye AI](#) is a machine learning system that measures social, emotional, and medically relevant behavior. The machine is a clinical-grade system, which means it has been tested through clinical trials to achieve great efficiency.

The system was developed by researchers from the University of Nottingham's School of Computer Science. It was co-founded by Professor Michel Valstar in 2019 as part of a human behavior understanding project.

Through its computer vision and facial expression system, [BlueSkeye AI](#) has made enormous contributions to mental health as this component helps in emotion analysis.



Which Mental Health Issues Does BlueSkeye AI Target

Because the [BlueSkeye AI](#) system works by reading facial cues and expressions, it targets various mental health populations.

Postpartum Depression

Postpartum depression is a common problem affecting more than 15% of women who give birth globally.³ Here are the main postpartum depression symptoms in new mothers:

- **Persistent Sadness and Low Mood:** Women diagnosed with postpartum depression show signs of feeling down and empty. They occasionally break down in tears without any notable cause.
- **Anxiety and Worry:** Some women with postpartum depression tend to feel worried and on the edge. Such extreme levels of worry affect their reasoning capacity, which can be dangerous in some situations.
- **Irritability and Anger:** Women with postpartum depression are more likely to experience constant frustration. Their agitation can be towards the baby, partner, or other people within their interaction circle.
- **Loss of Interest and Pleasure:** A large number of women with postpartum depression find themselves unable to enjoy many things in life. They develop a lack of interest in many things, which compromises their quality of life.
- **Guilt and Worthlessness:** As postpartum depression progresses; the affected person develops a sense of worthlessness. They soon begin thinking that they are not good mothers or not worth being parents.
- **Difficulty Bonding with the Baby:** One of the traits noted across postpartum patients is the struggle to bond with their children. They gradually become detached from the child emotionally, which compromises their and their baby's wellness as well.
- **Crying Episodes:** Postpartum patients experience frequent crying episodes. This is because most individuals become highly emotionally sensitive, and many things can trigger crying.

How Does AI Technology Address Postpartum Depression?

The AI systems designed for mental health are specially designed to address postpartum depression in several ways. In your pregnancy journey, you have the opportunity to conduct self-analysis using the [BlueSkye AI](#) tool and take control of your psychological wellness.

- **Early Detection and Risk Prediction:** AI algorithms can assess data from sources to determine the women at risk. Through machine learning techniques, AI technology can analyze patterns and recommend an early intervention method to reduce the risks.
- **Personalized Treatment and Support:** The AI system includes chatbots and virtual support groups that can provide health support to affected mothers. These resources provide cognitive-behavioral therapy methods that can help mothers cope with psychological stress after pregnancy.
- **Improved Access:** With AI-based technology, pregnant mothers have more access to mental health services. This innovation eliminates the need to physically visit

psychiatrist's office for counselling and evaluation services, as it is readily available to them through internet devices.

- **More Connection and Information:** AI technology can connect the affected mothers to different resources globally. After assessment, it can recommend a specific specialist or approach, which is both convenient and time-saving.

Recent Research on AI Addressing Postpartum Depression

There is no better way to show that AI is transforming pregnant women's health than studies focusing on how the AI system shapes mental healthcare in the maternal group. Below are several studies revealing how AI has successfully impacted pregnant women's psychological health.

In one [study](#) conducted in 2024, the researchers analyzed the impact of chatbots in delivering cognitive behavioral therapy to reduce depression and anxiety symptoms in postpartum women aged 18 and above. The research outcome revealed that in the subjects studied, more than 80% reported reduced anxiety and lower psychological distress after using the chatbot services to respond to their concerns. ¹

A second [study](#) conducted in 2023 in Pakistan was aimed at understanding how AI-chat-based solutions could help screen women for postpartum depression. The researchers also reported positive outcomes in the study, noting that “We found that an AI-based chatbot can potentially be the solution to screen post-partum depression...” ²

In a [research study](#) conducted in 2020, the researchers aimed to understand if machine learning could help predict postpartum stress and offer solutions to overcome it. The researchers reported that depression symptoms started showing in the third trimester, concluding that machine learning was indeed effective in predicting postpartum depression in pregnant women. ³

These research studies are but a few of the studies done in the pregnant women population. They share one idea in common, which is that AI is an effective tool that can help pregnant women and new mothers cope with the psychological stress associated with the journey.

What are the Challenges and Ethical Considerations in AI Use?

While AI offers reliable solutions to address the mental health of pregnant women, it is important to address the challenges and ethical concerns that might arise from its use. Several experts have assessed this group's use of AI platforms and noted the following concerns.

Cultural Concerns

- **Privacy and Confidentiality:** Experts in the AI industry raise concerns over AI systems collecting large amounts of personal data, which may include sensitive information like the mother's mental health history. Because of this issue, pregnant women might feel

hesitant to share information on the platform, fearing misuse, breaches, and stigmatization.

- **Cultural Sensitivity and Inclusivity:** Some experts express concern that some AI systems do not reflect some cultures' mental health experiences and expressions. They recommend that the systems be trained to be impartial and reflective of different cultural values.
- **Overreliance on AI:** Some experts have expressed the concern that using AI to assess mental health issues might lead to overreliance on AI in the healthcare industry. They argue that this could lead to such problems as misdiagnoses, inappropriate recommendations, and lack of personalized care.

Ethical Considerations

- **Possible Harm:** There are some concerns over AI systems causing harm to users. Such issues could affect the willingness of pregnant women and new mothers to use AI systems for their psychological health.
- **Transparency in Algorithms:** Some users of AI systems express concern over understanding how AI systems make decisions. The lack of transparency expressed in some areas can erode the trust of some mothers in using the systems.
- **Long-Term Impact:** Some people believe that AI systems might be beneficial today but harmful in the long run. These concerns are linked to AI systems being new across most industries, and that not many understand how their evolution will affect the populations they serve.
- **Informed Consent:** The approaches used to feed information on AI systems remain unclear to many. This means that some information can be shared without the users' consent.
- **Continuous Monitoring:** There is a need to monitor AI systems consistently and ensure they function effectively. Failing to use proper measures to assess the system can lead to numerous risks that affect the health of pregnant women and new mothers.

What is the Future of AI in Postpartum Health?

Based on what has happened in the healthcare industry for the past five years, AI is here to stay, and we might have to warm up to the idea. Several systems besides [BlueSkye AI](#) are in development and are targeted at improving healthcare approaches.

By addressing the emotional challenges related to pregnancy and post-maternal periods, AI systems will greatly improve the lives of mothers. The ability to predict emotional distress before it takes a toll on women might be the first step to developing health interventions for pregnant women.

All in all, knowing what AI systems have in store, I believe this solution could have worked perfectly for my friend's wife before it got to the point of admittance to a mental health institution.

Bibliography

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