

# Barriers and Advantages of Internet-based Psychotherapy in the Treatment of Depression in Iranian Pregnant Women: A Qualitative Study

## Abstract

**Background:** In recent years, internet-based treatments have been considered reliable alternatives to face-to-face therapies. However, the advantages and disadvantages of using internet-based treatment in pregnant women require further study. The study investigated the challenges, advantages, and barriers of internet-based psychotherapy in the treatment of depression among Iranian pregnant women. **Materials and Methods:** In a content analysis, semi-structured interviews were conducted with a total of 20 participants from September 2022 to March 2023. The study included depressed pregnant women who had sought care at the midwifery centers of Babol University of Medical Sciences or specialized offices of gynecologists and midwives in Iran. The statistical population included 14 depressed pregnant women and six psychotherapists who were selected purposefully. Audio-recorded interviews were transcribed verbatim and analyzed using framework analysis. **Results:** A total of 294 codes were extracted. The results showed three main themes and their associated 13 subthemes. The first main theme, “Barriers to Internet-based Therapy,” consists of various barriers faced by the participants. The second main theme, “Suggestions to Overcome Barriers,” examines participants’ suggested strategies for dealing with challenges. The third main theme, “Advantages of Online Therapy,” highlights the perceived benefits of internet-based therapy. **Conclusions:** To increase the effectiveness of online treatment in pregnant women, attention should be paid to improving technology, designing appropriate platforms, providing more education to patients, and implementing integrated approaches that combine face-to-face sessions with online treatment. Although online psychotherapies have their challenges, they have important benefits for pregnant women.

**Keywords:** Depression, internet-based intervention, pregnancy, psychotherapy

## Introduction

Poor mental health during the perinatal period refers to disorders that typically arise during pregnancy and up to 1 year after delivery,<sup>[1]</sup> often accompanied by complications for both mothers and infants.<sup>[2,3]</sup> Depression is the most prevalent mental health problem during pregnancy, characterized by symptoms such as depressed mood, low self-esteem, loss of interest, feelings of worthlessness, irritable mood, loss of appetite, feelings of fatigue, and poor concentration.<sup>[4]</sup> The treatment rate for perinatal psychological illnesses is low,<sup>[5]</sup> and there are several treatment barriers, including stigma,<sup>[6]</sup> scheduling issues,<sup>[5]</sup> and lack of information.<sup>[6]</sup> Internet-based interventions can help overcome some of these barriers and have demonstrated similar effectiveness to face-to-face psychotherapy.<sup>[7]</sup>

Internet-based interventions have been the subject of research for treating perinatal depression and anxiety. According to a systematic review and meta-analysis, internet-based psychological interventions have been shown to improve perinatal depression and anxiety symptoms, with participants indicating a high rate of satisfaction with these interventions.<sup>[8]</sup> There are confidentiality challenges, particularly regarding personal data protection and storage, especially when using smartphones.<sup>[9]</sup> Additionally, the lack of personal contact and the inability of women to benefit from the therapeutic alliance may limit the effectiveness of internet-based interventions.<sup>[10]</sup> Limited research has been conducted on a broader demographic of women, including those with limited internet access and lower technology literacy. Moreover, there is

Shirin Shahrokhi<sup>1</sup>,  
Zahra Basirat<sup>2</sup>,  
Shahnaz Barat<sup>3</sup>,  
Farzan Kheirkhah<sup>4</sup>,  
Hajar Adib-Rad<sup>5</sup>,  
Seyyede  
M. Mirtabar<sup>6</sup>,  
Mahbobeh  
Faramazi<sup>5</sup>

<sup>1</sup>Psychology Department, Behshahr Azad University, Behshahr, Iran, <sup>2</sup>Department of Obstetrics and Gynecology, School of Medicine, Infertility and Reproductive Health Research Center, Health Research Institute, Rouhani Hospital, Babol University of Medical Sciences, Babol, Iran, <sup>3</sup>Department of Obstetrics and Gynecology, School of Medicine, Infertility and Reproductive Health Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran, <sup>4</sup>Department of Psychiatry, Social Determinants of Health Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran, <sup>5</sup>Social Determinants of Health Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran, <sup>6</sup>PhD Candidate for By Research Clinical Psychology, Student Research Committee, Health Research Institute, Babol University of Medical Sciences, Babol, Iran

**Address for correspondence:**  
Dr. Mahbobeh Faramazi,  
Babol University of Medical  
Sciences, Babol, Iran.  
E-mail: mahbob330@yahoo.com

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limited information on withdrawal rates from internet-based interventions for perinatal depression and anxiety symptoms, with reported rates ranging widely from 4.5% to 86%.<sup>[9,11]</sup>

Even though online therapy has been extensively studied in various populations, research on internet-based interventions is relatively new in Iran. Pioneering studies have been conducted on internet-based interventions among infertile women in Iran.<sup>[12,13]</sup> These studies marked an important turning point, shedding light on the potential of online therapy in addressing the psychological well-being of specific subgroups in the Iranian population. Building upon this groundbreaking work, other studies examined internet-based interventions on pregnant women,<sup>[14]</sup> emphasizing the novelty of this approach in Iran. Given the limited experience with online therapy in Iran, it is of utmost importance to identify and study potential barriers and limitations specific to pregnant women. Such knowledge can greatly facilitate the development of this field. Despite the mounting evidence supporting the effectiveness of internet-based interventions, no studies have explored the opinions of specialists and patients regarding the use of these interventions during pregnancy in the Iranian population. Therefore, the aim of this study was to investigate the obstacles, challenges, and benefits of internet psychotherapy in the treatment of depressive symptoms in Iranian pregnant women.

## Materials and Methods

A content analysis method was used to determine and develop the challenges, advantages, and barriers of internet-based psychotherapy for the treatment of depression from September 2022 to March 2023. Based on previous studies in which online psychotherapy was conducted among Iranian pregnant women, assumptions of challenges and barriers of psychotherapy were formed for the interviews.<sup>[12-14]</sup> This descriptive qualitative study utilized a semi-structured interview approach guided by open-ended questions to gather data on the participants' perspectives and expectations regarding the advantages and limitations of online therapy.

The study included depressed pregnant women who had sought care at the midwifery centers of Babol University of Medical Sciences, Iran (Rohani, Yahiinejad, and Merzikla hospitals) or at specialized offices of gynecologists and midwives. Purposive sampling was employed, ensuring maximum diversity in terms of age, occupation, education level, duration of pregnancy, and duration of therapy, until data saturation was reached, and a total of 20 participants were selected, including 14 eligible depressed pregnant women and six online psychotherapists. The primary inclusion criteria for patients were as follows: at least 18 years of age; education level above elementary school; access to the internet; ability to use a mobile phone, computer, etc.; willingness to enter treatment; not taking

psychiatric drugs in the last 3 months; and diagnosis of depressive disorder based on the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DAM-5). Based on the Structured Clinical Interview for DSM-5, Clinician Version (SCID-5-CV), subjects with severe psychiatric disorders, such as psychotic disorder, bipolar disorder, high risk of suicide, and substance abuse for up to 3 months, were excluded and were introduced to specialized psychiatric centers for specialized treatment. The inclusion criteria for psychotherapists included having a university degree in a related field, specialized training in providing online psychotherapy, and at least 2 years of clinical experience in the treatment of perinatal mental health disorders.

The participants received internet-based cognitive-behavioral psychotherapy on the website [www.peacefulmindme.com](http://www.peacefulmindme.com). The program consisted of eight sessions, each lasting 50–60 minutes, and was presented in multimedia. The patient entered the treatment session and gradually followed the program. Treatment steps included virtual sessions, with the therapist helping the client. Photos and text served as comprehension aids, while the audio portion served as a “guiding voice” to help the patient through the treatment process. After each video, the patient could hear a summary of the therapist’s conversation in a voice recording at the bottom of the treatment screen (guidance voice). Some videos depicting a fictional character struggling with anxiety and trying to improve their condition with the help of this approach were made so that patients could identify their problems and feel less alone. In addition, tests and assignments were designed to improve patients’ engagement with treatment.

The interviews were conducted by a clinical psychologist (first author) who had expertise in pregnancy-related issues and qualitative interviewing. Prior to the study, the psychologist received training from a member of the research team who was also a psychologist (corresponding author). The interviewer provided an explanation of the research purpose and methods to 35 depressed individuals who met the inclusion criteria, 15 of whom declined to participate. Reasons for refusal included insufficient time for a 1-hour conversation with the psychologist and dissatisfaction with the interview recording. Clinical interviews were conducted with participants who signed a consent form, and codes were saturated for a maximum of 14 patients. The entire interview session was recorded to enable the research team to explore relevant themes. In-depth interviews began with semi-structured questions, lasted an average of 35–50 minutes, and were recorded with the participants’ written consent. Data collection continued until data saturation was achieved.

Some important questions that were asked during the interview included:

1- What are the barriers that prevent pregnant women from receiving internet-based treatment? 2- What are the factors that influence pregnant women's decision to choose internet-based psychotherapy over traditional face-to-face therapy? 3- What are the concerns that pregnant women have regarding internet-based psychotherapy?

Qualitative content analysis consisted of three phases: preparation, organization, and reporting. The preparation phase began with deciding what to analyze. The next step (organization phase) involved developing a categorization matrix and coding the data. Finally, the researcher generated an association between the results and the data in the reporting phase.<sup>[15]</sup>

The preparation phase began with the selection of the unit of analysis containing the whole interview. The audio recordings of the interviews were transcribed verbatim, and subsequently, analyzed. The transcribed interviews were carefully reviewed by the researchers multiple times, with a focus on every word or term spoken by the participants. Immediately after each interview, typing and coding were done, and data analysis was performed simultaneously with data collection. The organizing phase included coding, creating categories, and abstraction. Each word or term was treated as a code, and the main themes were identified using a coding format. Codes sharing a similar concept were grouped together in classes, ultimately leading to the formation of broader and more comprehensive categories and components. This process was repeated several times to condense the data. In the reporting phase, appendices and tables were used to demonstrate the links between the data and the results. Consequently, the content was organized into distinct categories, and each category was given a relevant name.

For accuracy and reliability of the qualitative data, we used the scientific rigor criteria of Guba<sup>[16]</sup> and Lincoln,<sup>[17]</sup> including credibility, dependability, transferability, and conformability. The review by participants and examination of data by expert colleagues was used to ensure credibility. Moreover, all researchers were engaged in the process of analyzing the data. Furthermore, the researcher accurately recorded and reported the stages and processes of the study in sufficient detail for dependability of the research. We enhanced the reliability through constant comparative analysis and constant ongoing communication with participants. The conformability of results was assessed by an auditor familiar with qualitative research. To this end, parts of the interview texts, together with relevant codes and categories that emerged, were examined and confirmed by two experts familiar with qualitative research.

Data analysis was conducted using Quirkos software for qualitative data analysis (version 2.4.1; Quirkos Software, UK). Our main analytical approach was based on framework analysis,<sup>[18]</sup> which has been consistently recommended for policy and healthcare research.

## Ethical considerations

The project was approved by the Ethics Committee of the National Institute for Medical Research Development (NIMAD) (IR.NIMAD.REC.1398.174). Informed written consent was obtained from each participant before participating in the study.

## Results

Table 1 illustrates the demographic characteristics of the study population. Following the data analysis, a total of 294 codes, 13 subthemes, and three main themes were extracted. The barriers of internet-based psychotherapy are presented in Table 2, and the advantages and suggestions in Table 3.

### Barriers to internet-based therapy from the viewpoint of patients and psychotherapists

The theme of barriers to internet-based therapy from patients' perspectives consisted of seven subgroups, namely technology problems, personal problems, therapy content problems, absence of a psychotherapist, familial problems, physical and mental problems, and financial concerns. Four subthemes, namely internet problems, personal problems, therapy content problems, and absence of a psychotherapist, had the most frequencies between other subthemes.

#### \*Internet problems

Many patients identified internet problems such as poor connectivity and slow video uploads as barriers to accessing internet-based therapy.

One patient stated: "Well, we live in an area with poor internet, so I face difficulties accessing the website, and even when I manage to access it, uploading videos is a challenge" (p8).

Another patient said: "Due to poor internet connection, I struggled with frequent disconnections. I could not fully

**Table 1: Demographic characteristics of the study population**

Participant number	Age	Educational level	Gestational age	Occupational status
1	32	Diploma	16	Housewife
2	26	Diploma	8	Housewife
3	29	Bachelor's degree	22	Housewife
4	36	Diploma	12	Employee
5	22	Diploma	19	Housewife
6	31	Bachelor's degree	7	Working
7	20	Master's degree	5	Employee
8	25	Diploma	26	Housewife
9	26	Diploma	17	Housewife
10	33	Diploma	11	Working
11	34	Master's degree	19	Self-employed
12	28	Bachelor's degree	28	Employee
13	21	Diploma	9	Housewife
14	32	Bachelor's degree	30	Self-employed

**Table 2: Subthemes of barriers of internet-based psychotherapy extracted from data analysis**

Final code	Subthemes
<ul style="list-style-type: none"> <li>• Lack of trust from the spouse in internet-based therapy</li> <li>• Considering having another child</li> <li>• Lack of support from the spouse</li> <li>• Presence of an underlying anxiety disorder</li> <li>• Having concerns and reservations</li> <li>• Risk of abortion</li> <li>• Presence of physical health conditions</li> <li>• Cost of internet access</li> <li>• Not having a suitable mobile phone</li> <li>• Failure to ask timely questions</li> <li>• Lack of communication with the online therapist during therapy sessions</li> <li>• Receiving inadequate sympathy and emotional support</li> <li>• Lengthy texts and excessive number of questions</li> <li>• Poor internet connectivity</li> <li>• Delay in uploading therapy videos</li> <li>• Living on the fringes and lacking access to the internet</li> <li>• Difficulty accessing the therapy website</li> <li>• Lack of prior experience with internet-based therapy</li> <li>• Not owning a suitable mobile phone for the therapy sessions</li> <li>• Lack of knowledge and proficiency in using technology</li> <li>• Challenges related to labor and infant care</li> <li>• Insufficient time available for therapy</li> <li>• Influence of low education, cultural level, and age on psychotherapy outcomes</li> <li>• Requirement for hospitalization</li> <li>• Fear of stigma associated with psychotherapy</li> <li>• Considering having another child</li> <li>• Being employed</li> </ul>	<ul style="list-style-type: none"> <li>Familial problems</li> <li>Physical and mental problems</li> <li>Financial concerns</li> <li>Absence of a psychotherapist</li> <li>Therapy content problems</li> <li>Technology problems</li> <li>Personal problems</li> </ul>

engage with the therapy sessions as I was more concerned about the internet issues” (p10).

#### \*Personal problems

Several pregnant women highlighted personal problems as barriers, including a lack of technological knowledge and skills, concerns related to labor and infant care, having other children, being employed, and a lack of time.

One participant expressed: “I would have liked to have more time for myself, but I am occupied with my children throughout the day, especially now that I am in the hospital, and taking care of my eldest son when I am at home” (p15).

**Table 3: Subthemes of advantage and barriers for internet-based psychotherapy**

Final code	Subthemes
<ul style="list-style-type: none"> <li>• Simplifying the therapy content</li> <li>• Tailoring online therapy to individual needs</li> <li>• Incorporating conversational therapy videos</li> <li>• Making texts and training materials shorter</li> <li>• Desire for face-to-face therapy sessions</li> <li>• Balancing face-to-face and internet-based meetings</li> <li>• Need for support within internet-based therapy</li> <li>• Establishing specific communication times with the therapist</li> <li>• Willingness to engage in open dialogue with the therapist</li> <li>• Balancing face-to-face and internet-based meeting</li> <li>• Providing instruction on using the therapy website</li> <li>• Increasing the support available during therapy sessions</li> <li>• Fostering trust and empathy between patients and therapists</li> <li>• Offering offline therapy options through the hospital system during hospitalization</li> <li>• Providing offline therapy for patients without internet access</li> <li>• Potential for equal satisfaction and effectiveness compared to face-to-face therapy</li> <li>• Elimination of travel requirements</li> <li>• Availability of free online therapy</li> <li>• Preference for online therapy during pregnancy</li> <li>• Minimization of exposure to possible infections during pregnancy</li> </ul>	<ul style="list-style-type: none"> <li>Making the therapy content more specific</li> <li>Integrating face-to-face and internet-based therapies</li> <li>Having a certain therapist</li> <li>Teaching the patients</li> <li>Having offline therapy</li> <li>Positive features of internet-based therapy</li> </ul>

Another participant noted: “I did not give much thought to my mental health, perhaps because I was more preoccupied with my pregnancy and the risk of abortion” (p11).

A third participant shared: “I was stressed, worried about labor and my second pregnancy. I did not have much time to visit the website, but the conversations we had are proving helpful now” (p19).

#### \*Therapy content problems

Pregnant women also cited therapy content problems as barriers to internet-based psychotherapy. These included the generic nature of the therapy content meant for all patients



and difficulties in comprehending the internet-based therapy material.

One participant expressed: *"In my opinion, the videos on the website were generic, and people with varying levels of education could interpret them differently. I would have preferred more specific content"* (p11).

Another participant stated: *"The videos were generic, and designed for everyone. I wanted them to be personalized, like the counseling sessions that are tailored to each individual. I wished the content was specific to me"* (p18).

#### **\*Absence of a psychotherapist**

The absence of a psychotherapist was identified as another barrier to internet-based therapy from patients' perspectives. One patient stated: *"I wanted the opportunity to ask questions and communicate with my therapist during the program"* (p13).

#### **Suggestions to overcome barriers from patients' and psychotherapists' views**

The suggestions to overcome barriers were investigated from the perspectives of psychotherapists and patients. The five subgroups of making online therapy more specific, face-to-face and internet-based meetings, setting a specific time to communicate with the therapist, teaching the patients, and providing offline therapy were identified. Among these, the highest number of responses were received for face-to-face and internet-based meetings and making online therapy more specific.

#### **\*Teaching the patients**

*"Some barriers are beyond our control, such as poor internet connectivity in certain areas; despite this, we have become the first institution to institutionalize this therapy in Iran. We are determined to overcome these barriers. In our target population, I believe teaching women can be particularly useful, even during their hospitalization"* (p5).

*"In fact, they can be taught while they are hospitalized. We can provide them with more knowledge and training because we have a psychologist in the hospital. These individuals can receive face-to-face therapy sessions, which would build trust and allow them to continue treatment with support even after they leave the hospital"* (p2).

#### **\*Integrating face-to-face and internet-based therapies**

*"Online therapy is beneficial when it comes to chat and voice communication, but it would be even better if it could be combined with face-to-face consultations. In face-to-face sessions, the therapist can provide better advice, understand my feelings and mood more accurately, and offer innovative solutions. It would be wonderful to have the option of face-to-face therapy"* (p20).

*"Well, when I was hospitalized, I preferred to have face-to-face meetings and fully engage with the therapist*

*to receive positive energy and vibes. However, during my pregnancy, I faced a difficult situation, so I opted for online visits"* (p14).

#### **\*Making online therapy more specific**

*"The therapy videos are popular, and anyone can access them. I believe they would be more effective if they were personalized. This personalization would greatly enhance the impact of the therapy"* (p7).

#### **Advantages of internet-based therapy**

The participants also discussed the features of internet-based therapy: *"It was good for me as it is difficult for many people to go out, it is inexpensive, and I have another child. It was very effective at that time and very useful to be in contact with a counselor at any time. It has better features than face-to-face sessions"* (p13).

*"Well, face-to-face therapy costs more and we have some financial problems. It was also really hard for us with two children, but the solution was very good. Thank you very much"* (p9).

#### **Discussion**

In exploring the results of this study on challenges, barriers, and advantages of internet-based psychotherapy for the treatment of depression in Iranian pregnant women, three main themes and associated subthemes emerged. The first theme uncovered a spectrum of challenges, encompassing technology-related issues, personal concerns, and familial dynamics. Conversely, the second theme provided valuable suggestions to overcome these barriers, emphasizing tailored therapy content, integrating face-to-face and online modalities, and ensuring a consistent therapist presence. The third theme highlighted the perceived advantages of online therapy, offering a positive perspective on the intervention.

Similar to our study, a qualitative study examined barriers to the use of web-based mental health programs for depression prevention among workers at high risk of a major depressive episode.<sup>[19]</sup> The study identified six main categories of barriers, time, stress level, perception of depression prevention, content, functionality, and dangers. Time was the most frequently reported barrier, as participants felt they did not have enough time to use the programs or complete the exercises. The study concluded that web-based mental health programs for preventing depression face multiple challenges in engaging and retaining users and suggested some possible strategies to overcome these barriers, such as providing more flexibility, personalization, interactivity, and support within the programs.<sup>[19]</sup>

Similar to the finding of our study, a qualitative study in Iran examined the dimensions of online counseling from the perspective of clients and counselors to provide

a paradigmatic model. The study generated three main themes, but technological challenges and the lack of counselor training are the main causes of online counseling failure in Iran.<sup>[20]</sup> These findings align with our own observations regarding the importance of addressing technology-related barriers in internet-based psychotherapy. Other studies also reported high withdrawal rates, isolation, falsification, and privacy concerns as issues in some internet-based interventions.<sup>[21]</sup> The high withdrawal rate is an unresolved problem of internet-based therapeutic programs,<sup>[22]</sup> but it also occurs in face-to-face therapies.<sup>[23]</sup>

Therapists also faced challenges in providing internet-based therapy to pregnant women. Technology access problems were important barriers, highlighting the importance of ensuring reliable and stable internet connections for patients and therapists. This result is consistent with previous studies that examined health professionals' perceptions of internet-based interventions for the postpartum period<sup>[24]</sup> and parents of young children with mental health disorders.<sup>[25]</sup> A study on online psychotherapeutic interventions for depression reported that primary healthcare personnel might be opposed to patients' use of internet-based interventions.<sup>[26]</sup> The therapists emphasized the effects of patients' cultural and scientific backgrounds on their acceptance of internet-based therapy and suggested the necessity of culturally sensitive approaches. Evidence suggests that pregnant women with different cultural backgrounds may refuse to use internet-based interventions.<sup>[27]</sup>

Despite its challenges and limitations, internet-based therapy offers advantages for pregnant women. The flexibility and convenience of online sessions are particularly attractive, as pregnant women often experience physical discomfort and transportation problems. These findings are consistent with previous studies, which also identified factors such as cost-effectiveness, convenience, and easy access as advantages of internet-based interventions.<sup>[9]</sup>

It is important to consider several research limitations when interpreting the results. First, it should be noted that internet-based psychotherapies were only recently introduced in Iran in 2022. Therefore, the causes and barriers identified in this research may be specific to Iran and cannot be directly generalized to other regions or countries. Furthermore, one of the criteria for entering the study was being over 18 years of age. The participants of our research were pregnant women, and according to the references, the best age to get pregnant is between 20 and 40 years, and the pregnant people who were referred to the women's department during this research were in this age group. Moreover, as individuals were offered online therapy, those with lower levels of education were less likely to be interested in online psychotherapy. These factors potentially limited the generalizability of findings to a broader demographic.

Despite these limitations, the present study provides valuable insights into the unique challenges faced by

pregnant women participating in internet-based therapy in Iran. Future studies are recommended to investigate such issues in multiple cultural contexts to enhance the generalizability of the results.

## Conclusion

The findings shed light on the complexities surrounding internet-based psychotherapy for depression in Iranian pregnant women. The comprehensive discussion underscores the need for a holistic and culturally sensitive approach, incorporating the identified suggestions to overcome barriers and leveraging the perceived advantages to optimize the delivery of mental health care in this specific context. Future studies and interventions should consider these insights to enhance the effectiveness and accessibility of online psychotherapy for diverse populations.

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## Conflicts of interest

Nothing to declare.

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