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Research Article

Barriers of Hearing-Impaired Pregnant Women in Utilizing Antenatal Care Services at Public Health Facilities, Dire Dawa, Ethiopia

Aminu Mohammed Yasin[1, *], Bezabih Amsalu[2], Leyla Abrar Bedru[3], Hassen Mosa Helil[3], Neima Redwan Abdu[3]

[1]Department of Midwifery, College of Medicine and Health Sciences, Dire Dawa University, Dire Dawa, Ethiopia
[2]Department of Public Health, College of Medicine and Health Sciences, Dire Dawa University, Dire Dawa, Ethiopia
[3]Department of Midwifery, College of Medicine and Health Sciences, Werabe University, Werabe, Ethiopia

Abstract

Background: Although Ethiopia has improved the accessibility of antenatal care services for pregnant women, there is a lack of specific data about the barriers hearing-impaired pregnant women encounter during their antenatal care visits, both nationally and in the study region. *Purpose*: The study aimed to explore barriers that hearing-impaired pregnant women encounter when utilizing antenatal care services at public health facilities (health centers or hospitals). *Methods*: A qualitative design was applied for this study. Study settings and participants were selected through purposive sampling techniques and interviewed individually using an interview guide, with the assistance of a voice recorder and field notes. The interviews were then transcribed verbatim, analyzed using an inductive thematic approach. The study was conducted in six districts (three urban and three rural) in Dire Dawa, Ethiopia, between June and July 2023. *Findings*: Four major themes were identified: staff attitude, staff communication, participants' perceptions, and inclusive antenatal care services. *Conclusions*: The antenatal care service barriers for hearing-impaired pregnant women emanating from health facilities and self-perceptions or beliefs. Thus, it is imperative to develop socially sensitive and inclusive antenatal care service programs to better address the barriers.

Keywords

Hearing-Impaired, Barriers, Pregnant Women

1. Introduction

A person is said to have impaired hearing if their hearing ability is less than that of someone with normal hearing, defined as having hearing thresholds of 20 decibels [1]. Individuals with disabilities, including those with impaired hearing, have an equal right to the best possible quality of health, even though the world is still far from realizing this [2]. Globally, the World Health Organization (WHO) predicts that by 2050, 2.5 billion people are projected to have some degree of hearing loss, at least 700 million will require hearing rehabilitation, and over 1 billion young adults are at risk

*Corresponding author: aminumhmd83@gmaill.com (Aminu Mohammed Yasin)

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of permanent, avoidable hearing loss due to unsafe listening practices [3]. Despite the universal inclusion of disability rights in healthcare policies, hearing-impaired pregnant women face many healthcare barriers, including during antenatal care (ANC) services [3-7].

During pregnancy, hearing-impaired pregnant women suffer from a lack of health information and management of obstetric complications since they might limit or avoid antenatal care visits due to a lack of communication between patients and healthcare staff [8, 9]. This lack of effective communication is due to a failure to provide sign language interpreters in healthcare settings and neglect by health care staff [5-7, 10]. The lack of effective communication between patients and healthcare staff is one of the main barriers to accessing health informationduring ANC, which can lead to a lack of prevention of obstetric complications [10].

In addition, hearing-impaired pregnant women face issues related to healthcare staff attitudes, support, and satisfaction with ANC services [5, 6]. The dissatisfaction is due to the fact that health facilities do not always meet their needs [6, 7, 11]. Health facilities, for instance, are related to drug and laboratory test costs, inclusive ANC services, and unjusticed ANC care services [12, 13].

Furthermore, hearing-impaired pregnant women also face problems related to emotional or physical aspects of life, necessitating socially appropriate antenatal care, which is lacking in some health facilities [14]. These pregnant women also need additional support in their ANC, such as providing detailed health information and counseling, but some health facilities lack this. As a result, women may limit or avoid their ANC visits, leading to obstetric complications if left unmanaged [15, 16]. The World Health Organization emphasizes the importance of positive pregnancy experiences with health professionals for every pregnant woman during ANC visits to encourage them to continue all ANC visits and have good pregnancy outcomes [2]. This is because ANC has a significant impact on how women experience their pregnancies to prevent or treat obstetric complications or risks like premature membrane rupture, obstetric hemorrhages, and preterm births [17-19]. Good ANC visit experiences also help reduce risks associated with pregnancy and chronic medical conditions [15, 18]. Thus, a country's health sector has a responsibility to address the gap in ANC services for hearing-impaired pregnant women [2].

Although Ethiopia has improved the accessibility of ANC services for all pregnant women, there is a lack of specific data about the barriers hearing-impaired pregnant women encounter during their ANC visits, both nationally and in the study region. Therefore, exploring barriers encountered by pregnant women in utilizing antenatal care services is crucial to improving interventions, emphasizing the importance of health facilities and staff to bridge healthcare gaps [15, 16]. This study aimed to explore barriers encountered by hearing-impaired pregnant women in utilizing antenatal care services at public health facilities.

2. Methods

2.1. Study Setting and Period

The study was conducted in six districts (three urban and three rural) in Dire Dawa, Ethiopia, between June and July 2023. Dire Dawa administration is located about 515 kilometers east of Addis Ababa, the capital city of Ethiopia, and 311 kilometers west of Djibouti port. The administration includes 38 rural and 9 urban kebeles, with a population of 506,000, 68% of whom are urban inhabitants. It has two public hospitals (1 referral and 1 general) and 17 public health centers [20].

2.2. Researcher and Interviewer Characteristics

All five authors hold master's degrees in different health fields: four in maternity and neonatal nursing, and one in public health. The principal researcher (AM) provided overall leadership to the work. The research team consisted of two female and three males with experience in teaching at public universities, qualitative research studies, and community services in urban and rural areas. The research teams had no prior relationship with the participants and participants were unaware of the researchers. The interviewers, three men with first degree in community psychology and expertise in sign language, were selected from Dire Dawa city and the rural Dire Dawa administration. They all spoke local languages (Afan Oromo and Amharic) and had experience in qualitative interviews with sign language.

Research design A community-based qualitative design approach was chosen to allow participants to freely respond at their community level rather than a facility-based approach. This approach was selected to better understand the barriers participants encounter during their ANC visits [21, 22].

2.3. Sampling Strategy

The study areas were purposefully selected due to their larger population. Participants for the eleven in-depth interviews were drawn from three districts each from urban and rural areas. Health extension workers provided information about hearing-impaired pregnant women in the community, and participants were selected based on this information. Participants were eligible if they were legally adults, pregnant, and had hearing impairment, with two or more ANC follow-ups at public health facilities. However, those who were ill and unable to provide a response (two) were excluded.

2.4. Data Collection Methods

Participants were oriented to the study by interviewers who explained the aims and objectives in Afan Oromo and

Amharic. Ethical clearances were obtained, and written informed consent was secured from individual participants. Interviews were conducted at participants' home, in a quite place, individually. Data was collected using interviews, observations, and video recordings. Interviews were conducted in the local language until saturation was reached [23].

2.5. Data Collection Instruments and Analysis

In-depth interviews were recorded using a video recorder and field notes were taken. An interview guide was used, translated in to local languages, and designed by qualitative experts. The interview guide was unbiased and not lead-in (appendix I and II).

Interviewing a diverse group with a research goal and conducting member checks like a pilot study with participants enhances credibility [22-28]. In this study, to enhance trustworthiness, the pilot interview guide was tested two weeks before the actual interview with two participants. Two days of training were provided to interviewers regarding procedures, how to approach participants, interviewing sensitive issues, and using video recordings and field notes. Moreover, to ensure rigor, transcripts were returned to participants for comment and/or correction, and all transcripts of interviews, video records, and field notes were coded in parallel by context- and local language-fluent five research members (AM and BA) and qualitative data experts (LA, HM, and NR).

All interviews, field notes, and video records were transcribed and translated into English before being uploaded to the NVivo V. 12 qualitative data analysis software for analysis.

The analysis team met on a regular basis to discuss the coding process. Any conflicts that arose during the independent coding process were resolved by group consensus. Following coding and the identification of initial categories, data from interviews, video records, and field notes were combined. The preliminary coding of transcripts was done using an inductive thematic approach. Thematic analysis of the data was performed, as well as inductive coding. Then consistent codes were reduced into groups and, subsequently, into themes. The final list of themes was reviewed and agreed on by the entire investigator team. Barriers were included based on a single mention, and the document was thoroughly reviewed using the COREQ (Consolidated Criteria for Reporting Qualitative Studies) check list.

3. Findings

3.1. Participant Characteristics

A total of eleven participants, four from urban and seven from rural districts of Dire Dawa Administration, were involved in the study. Seven participants (63.6%) were under 35 years old; all (100%) were married and multiparous with hearing impairments in both ears [Table 1].

Table 1. *Demographic and obstetric characteristics of participants, Dire Dawa, Ethiopia, 2023.*

Characteristics	Category	Frequency/percentage
Age (in completed years)	<35	7 (63.6)
	35 and above	4 (36.4)
Residence	Urban	4 (36.4)
	Rural	7 (63.6)
Marital status	All married	11 (100)
Education level	No formal education	2 (18.2)
	Primary level (1-8)	9 (81.8)
Occupation	Housewife	5 (45.4)
	Merchant	6 (54.6)
Religion	Muslim	3 (33.4)
	Orthodox	4 (44.4)
	Protestant	1 (11.1)
Parity	All multiparous	11 (100)
Trimester during interview	All where 2nd and 3rd trimester	11 (100%)
Number of ANC visits	2	5 (45.4)
	>2	6 (54.6)

3.2. Themes

To understand barriers to ANC, participants were asked about their experiences during ANC visits to public health facilities (hospitals or health centers). Consequently, four main themes emerged from the data.

Theme 1: Staff Attitude

The findings identified staff attitude as a key obstacle in utilizing antenatal care visits for hearing-impaired pregnant women.

Subtheme 1a: Disrespect

Most participants believed that ANC services should not only be accessible but that healthcare staff should also show respect to patients, especially those with hearing impairments. Participants mentioned that healthcare staff lacked respectful care and ethics, leading to insults and serving as a barrier to utilizing ANC services.

A participant stated that "security guards did not prioritize hearing-impaired pregnant women entering a health facility for ANC visits, leading to results and delays."

Additionally, participants noted a lack of concern and empathy from health professionals.

A woman narrated, "Medical staff showed negligence or

lacked concern for hearing-impaired pregnant women. Pharmacy staff did not prioritize or show concern while giving medicine explanations." Another woman also stated that "finance staff also did not prioritize participants during medicine purchases or laboratory test payments."

Subtheme 1b: Privacy Breach

The lack of privacy led participants to skip follow-ups and be more reluctant to seek medical check-ups in case there were obstetric complications between visits. Two participants even reported negative experiences, such as being exposed during examinations. A woman stated that "medical staff violated participants' privacy during obstetrics examinations at ANC visits.".

A woman responded, "Healthcare staff often breached patients' privacy. as they wanted."

Theme 2: Staff Communication (Medical and Non-Medical)

The quality of communication between healthcare staff and hearing-impaired pregnant women influenced the use of ANC services.

Subtheme 2a: Health Information

A lack of health information was identified as a common barrier to ANC visits due to poor communication with healthcare staff and a lack of sign language ability. A participant described, "Pharmacy and medical staff did not communicate effectively, leading to health information barriers for hearing-impaired pregnant women during ANC visits."

Subtheme 2b: ANC Counseling

A lack of counseling during ANC visits was the other identified barrier for hearing-impaired pregnant women during ANC visits. A woman responded, "The lack of appropriate counseling led hearing-impaired pregnant women to limit or avoid their ANC visits". Another participant narrated, "Due to poor communication with healthcare staff who did not use or know sign language, I limit ANC visits."

Theme 3: Perception of Participants

Subtheme 3a: Service Expectations

Barriers to ANC service use were found to include participants' own expectations for ANC services. The participants expressed their displeasure, claiming that they should be provided with discounted or free ANC services, such as medications and lab testing. This is due to the fact that they expect free ANC or other medical services for all disabled people, including hearing-impaired pregnant women. The majority of participants considered themselves disadvantaged citizens who needed affirmative action by the government or public health facilities.

A participant stated that "the government should provide discounted or free ANC services, such as medications and lab testing". Similarly, a woman narrated, "We hearing-impaired pregnant women are disadvantaged citizens, so we need full affirmatives from the government for any medical services and ANC services."

Subtheme 3b: Perceived Discrimination

Barriers to ANC service use were found to include clients' perceptions of prejudice from healthcare staff. This is due to the fact that they perceive healthcare staff as discriminating against them, including in medication payment at finance, counseling in ANC, and medication information in pharmacies. This perceived discrimination disappointed participants and led them to limit or sometimes avoid ANC visits.

A participant claimed that "Healthcare staff did not provide adequate counseling during ANC visits; healthcare staff did not clarify self- or societal beliefs, for instance, the belief that 'hearing impairment can pass on to an unborn baby'.". Another participant responded, "Since medical staff did not clarify during ANC counseling, I decided not to use ANC visits further. As a result, this remains a barrier for ANC service use."

Theme 4: Inclusive Antenatal Care Services

A lack of inclusive ANC services was identified as a barrier to ANC service use by hearing-impaired pregnant women. When public health facilities do not meet the needs of participants for inclusive antenatal care service, they may limit or avoid using these services altogether. As a result, public health facilities lack inclusive antenatal care services, qualified interpreters, and supportive teams for hearing-impaired pregnant women, creating a barrier to accessing antenatal care services. A woman complained that "Public health facilities lack the ability to provide all antenatal care services for hearing-impaired pregnant women.". Other participant narrated, "There is a shortage of medical staff who knew sign language, public health facilities did not have supportive teams in place to assist hearing-impaired pregnant women".

All themes, subthemes, and participant quotes are detailed in the table [Table 2].

Table 2. *Themes and examples of participants' quotations, Dire Dawa, Ethiopia, 2023.*

Themes	Examples of participants quotes
Theme 1: Staff Attitude (Medical and Non-Medical)	"Healthcare staff disrespected me, and security guards insulted me. I do not want to be insulted, especially by health professionals."
	"Both security guards and some health professionals used abusive words and even insulted me."
Subtheme 1a: Disrespect	*"Medical staff exposed my body, including my private parts. They lack medical ethics and respect for patient dignity, which is unexpected from them."*
Subtheme 1b: Privacy breach	*"Health professionals lack compassion and are often careless. They do not take my problems seriously."*

Themes	Examples of participants quotes
	"The healthcare staff did not care for me or give me their full attention."
Theme 2: Staff Communication (Medical and Non-Medical)	"I *visited both public hospitals and health centres for antenatal care follow-up, but nobody knows sign language, and they do not try to help or use other alternative solutions like translators who know sign language."*
Subtheme 2a: Health Information	*"When I tell doctors that I have a hearing problem, they write something that they understand, but they lack checking what my concern really is; simply, they write it as their judgment. Some do not communicate appropriately."*
Subtheme 2b: ANC Counselling	"Medical staff do not provide detailed and adequate health information during antenatal counselling; this is due to a lack of compassion by medical staff. They do not go further, like using sign language. When I say that I have a hearing problem, they say that many women are waiting outside."
	"I paid a high price for medications and laboratory tests during two antenatal care visits. As a hearing-impaired pregnant woman, I believe I should not have to visit public health facilities."
	"Why doesn't the costs of antenatal care for hearing-impaired pregnant women, including medication and laboratory tests?"
	"Security guards discriminate against individuals when entering a hospital."
Theme 3: Perception of Participants	"Pharmacy staff discriminate when explaining how to take medications, their side effects, and alternatives. They also discriminate during the payment process."
Subtheme 4a: Service Expectations	"Finance staff discriminate based on wait times and payment methods in public hospitals, and some medical staff intentionally prescribe expensive medications, which I view as discrimination."
Subtheme 4b: Perceived Discrimination	"During antenatal counselling, medical staff discriminate by not providing detailed explanations of what to do, not do, avoid, or expect, especially considering my hearing impairment."
	"Medical staff discriminate by not addressing societal beliefs, such as the misconception that hearing impairments can be passed on to unborn babies. This lack of clarification has led me to avoid public health facilities for my antenatal care."
	"I have completely stopped going to public health centres because they do not properly explain societal beliefs about disabilities being passed on babies. Medical staff do not address these concerns adequately, so, I prefer to seek care elsewhere."
	"A laboratory test was ordered during my antenatal visit, but it was not available at that health center. Another time, an ultrasound was ordered but not available, and when I asked health professionals, no one explained to me. Due to this, I will never go to that health center again for my antenatal care."
Theme 4: Inclusive Antenatal Care Services	*"I had antenatal follow-up in a hospital, but the medical staff did not provide adequate services. The antenatal clinic had no sign language interpreter or anyone to facilitate special services for hearing-impaired pregnant women like me."*
	"I attended antenatal visits both in a public health center and hospital, and I never saw any special supportive teams in health facilities. There were no individuals providing information on where to go or whom I should talk to about antenatal care services. So, others who have hearing problems are suffering like me."

4. Discussion

For a country with a national policy aimed at strengthening the quality of ANC care, like Ethiopia, it is essential to investigate the barriers for a better solution. Thus, this study focused on exploring barriers encountered by hearing-impaired pregnant women in utilizing antenatal care services at public health facilities in Dire Dawa, Ethiopia, through a qualitative study. This is an important study, given the global effort to achieve inclusive and quality care for pregnant women with impaired hearing, especially in low-resource countries. As a result, the present study explored four major barriers to hearing-impaired pregnant women utilizing antenatal care services: staff attitude, staff communication, participants' perceptions, and inclusive ANC services.

Staff attitudes, including disrespect, insults, and abusive language use against ANC service users, are explored as barriers to ANC service use for hearing-impaired pregnant women. Privacy breaches, such as unnecessary exposure of patients' private parts during obstetric abdominal examination, are another explored barrier to ANC service use. Other studies have also confirmed that healthcare staff attitudes, such as disrespectful attitudes and privacy breaches, negatively affect ANC service utilization by pregnant women [5, 6, 29].

Staff communication, which includes failure to provide adequate health information and ANC counseling by medical

staff, was a barrier to the use of ANC services by hearing-impaired pregnant women. Studies have confirmed that hearing-impaired individuals struggle with communication and accessing health information in healthcare settings [10, 11]. This is due to communication gaps, either inadequate or inappropriate, between medical staff and ANC service users, particularly for hearing-impaired clients. Thus, communication between healthcare staff and hearing-impaired pregnant women was a significant obstacle to accessing health information [6, 12, 29].

Another barrier to ANC service utilization was related to a lack of inclusive ANC services, exemplified by the absence of qualified sign language interpreters with medical expertise and special supportive groups for disabled women, including hearing-impaired pregnant women. This leads patients to a lack of pertinent ANC health information or inconsistent access to health information, preventing them from fully attending their ANC visits or avoiding ANC service utilization. Other research has also explored how hearing-impaired pregnant women faced healthcare barriers due to a lack of team support and access to health information without sign language interpreters [5-7, 10]. This implies that health facilities need to provide special supportive facilities and sign language training for medical staff. Moreover, unlike prior studies, the present study explored how the perception of hearing-impaired pregnant women plays a role in their ANC service utilization. Participants' service expectations and perceived discrimination were barriers to their ANC service utilization. This is due to the fact that many of them have expectations of free or low-cost healthcare services, including medication and laboratory test payments during ANC. Health facilities do not always meet their needs and expectations, leading to perceived discrimination by healthcare staff based on their counseling and medication explanations [6, 7, 11]. Consequently, participants prefer to limit or avoid ANC service utilization. This implies that healthcare staff need to be aware of the client's ANC service needs and approach them with special consideration. This highlights the importance of assessing pregnant women's sociocultural beliefs and clearing misconceptions during ANC counseling. The present study findings have implications for society, healthcare practice, and research. Health service leaders and staff need to consider hearing-impaired and disabled pregnant women in ANC services, addressing attitude, communication, and providing respectful and inclusive ANC services. This has implications for health service practice to achieve the SDGs in the reduction of ANC barriers and pregnancy complications by 2030. Healthcare leaders might train staff (medical and non-medical) to address their attitudes and communication gaps and work to improve ANC-inclusive services like sign language interpreters and hearing-impaired pregnant women's supporters. Societal implications include raising community awareness to dispel myths and perceived discrimination. Furthermore, research implications include the need to conduct a study from multiple perspectives, including ANC service providers and users' perspectives in public and private health facilities.

4.1. Study Strengths

To our knowledge, this study is the first to explore the personal, health system, and sociocultural barriers encountered by hearing-impaired pregnant women using a qualitative approach in the study region. The study design enabled in-depth data collection about the study barriers. The study used a diverse sample from six urban and rural districts, increasing the diverse views of participants. The accuracy of the data was improved by the use of primary data and experienced interviewers. All transcripts of interviews were coded in parallel by a context- and local language-fluent member as well as qualitative data experts to ensure rigor.

4.2. Study Limitations

The study included only participants who used antenatal care services from public health facilities and the perspectives of the service users only, which were limitations.

5. Conclusions

The ANC service uses barriers for hearing-impaired pregnant women emanating from health facilities and self-perceptions or beliefs. Thus, it is imperative to develop socially sensitive and inclusive ANC programs to better address ANC barriers.

Abbreviations

ANC	Antenatal Care
SDG	Sustainable Development Goal

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Author Contributions

Aminu Mohammed Yasin: participated in conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Software, Resources, Supervision, Validation, Visualization, writing original draft, Writing review and editing.

Bezabih Amsalu: Data curation, Formal analysis, Funding

acquisition, Investigation, Methodology, Project administration, Software, Resources, Supervision, Validation, Visualization, writing original draft, Writing review and editing.

Leyla Abrar Bedru: Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, writing original draft, Writing review and editing.

Hassen Mosa Helil: Formal analysis, Funding acquisition, Investigation, Methodology, Project Administration, Software, Resources, Supervision, Validation, Visualization, writing original draft, Writing review and editing.

Neima Redwan Abdu: Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Software, Resources, Validation, writing original draft, Writing review and editing.

All authors agree to take responsibility and be accountable for the contents of the article, agree on the journal to which the article will be submitted, and read and approve the final manuscript.

Ethics Approval and Consent to Participate

Ethical approval was obtained on May 9, 2023, from the Ethical Committee of the Dire Dawa Administration Health Bureau (DDAHB) (File-DDAHB-1010/May/2023). Written informed consent was obtained from study participants. All protocols were carried out in accordance with relevant guidelines and regulations from Helsinki.

Declaration

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us.

Data Availability Statement

The datasets collected and analyzed for this study are available from the corresponding author and can be obtained upon reasonable request.

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Conflicts of Interest

The authors declare no conflicts of interest.

Appendix

Appendix I: Preamble

Thank you so much for meeting with me today and agreeing to participate in this interview. I want to remind you that what you say here is confidential and will not be linked back to you, your baby, or your family or identify you in any way. I am recording this interview so that I can transcribe it. This means I will type out the words said in this interview into a secure document for analysis. There will be no identifiers on the transcripts. The de-identified transcripts will be accessed by other members of the research team to perform the analysis. The purpose of this interview is to explore barriers you encountered while visiting antenatal care at public health hospitals or health centers in order to better understand the health care services. We are here to learn from you, so anything you have to share is welcome. There are no right or wrong answers.

Appendix II: Interview Guideline

Good morning/afternoon. Thank you once again. Can I start the interview?

Have you ever attended an antenatal care visit? Where were the public or private health facilities? Health centers or hospitals?

How many times?

How do you explain the antenatal care services given to you in a health center or hospital?

How do you explain the support given to you by non-medical staff in a health center or hospital?

How do you explain the support given to you by medical staff in a health center or hospital?

How do you feel about your relationship with non-medical staff during antenatal care service (s) in a health center or hospital?

How do you feel about your relationship with medical staff during antenatal care service (s) in a health center or hospital?

What is your suggestion for improving the antenatal care services in a health center or hospital?

We really appreciate your time and insight. Thank you once again.

What were the most difficult challenges you faced during antenatal care visits in a health center or hospital? Is there anything else that you think we should know?

Thank you very much!

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