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Health Information Access for Deaf Yogyakarta Communities through A Salutogenic Perspective

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ABSTRACT

***Background**: Access to health information remains a major challenge for the Deaf community in Indonesia due to the limited availability of inclusive and accessible media. Existing health information materials rarely use sign language and often rely on written or spoken formats that many Deaf individuals find difficult to fully understand. As a result, the Deaf community faces greater vulnerability to chronic diseases and mental health problems. This study aimed to contribute to the development of inclusive health information for the Deaf community in Yogyakarta by examining their lived experiences and identifying their needs and preferences in accessing health information through a salutogenic lens. **Methods**: A qualitative design was employed, involving in-depth interviews with four Deaf participants who were actively engaged in local Deaf communities. The interviews were conducted with the assistance of a sign language interpreter and were thematically analyzed using the salutogenic model. Member checking and peer debriefing were applied to enhance data validity. **Results**: The study identified substantial barriers to accessing health information, such as limited use of sign language, advanced or technical language in media, and the lack of subtitles or interpreters in videos. Social media emerged as the primary channel for accessing health information, with participants strongly preferring visual formats that combined sign language interpreters, subtitles, and engaging visuals. Reproductive health and mental health were identified as the most needed and relevant topics for the Deaf community. **Conclusion**: The findings highlight the urgent need to develop inclusive health information media that are tailored to the communication needs of Deaf individuals. Actively involving the Deaf community in the design and dissemination of health information helps create an enabling and inclusive environment that supports a salutogenic approach. Such efforts can reduce information inequities, improve health literacy, and ensure that health promotion strategies are accessible, relevant, and meaningful for Deaf communities.*

***Keywords**: Deaf Community, Health Promotion, Inclusive Health Information, Sign Language*

INTRODUCTION

Approximately 5.16 million people in Indonesia live with hearing impairments (Statistik, 2020). In the Special Region of Yogyakarta (SRoY), 2,255 people with hearing impairments were reported in 2022, making SRoY the region with the second-highest prevalence of hearing impairments nationwide. Deaf individuals are seven times more likely than hearing people to have limited access to health information (Chandanabhumma *et al.*, 2024), which increases their vulnerability to chronic health conditions and mental health problems (Morisod *et al.*, 2022).

Deaf individuals face significant barriers in accessing health information (Almusawi *et al.*, 2021; Panko, 2022), including communication challenges (James *et al.*, 2022), lack of resources (Suariyani *et al.*, 2020), and systemic obstacles (Mawarni, Febriyanti and Pratiwi, 2024). Health information is rarely provided in sign language (Farovitch *et al.*, 2023) or other formats that are easily

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understandable to the Deaf community (Chandanabhumma *et al.*, 2024). As a result, Deaf individuals often have lower health literacy, which limits their ability to make informed health decisions and participate fully in health promotion initiatives (McKee *et al.*, 2026).

The provision of accessible and inclusive health information is recognized as a fundamental human right (Izquierdo-Condoy *et al.*, 2024). Indonesia has ratified this commitment through the Convention on the Rights of Persons with Disabilities (Law No. 19/2011) and enacted the Disability Rights Act (Law No. 8/2016), which ensures equal access to communication and health services for persons with disabilities. However, recent studies have revealed that barriers to implementing inclusive health communication remain widespread, particularly due to institutional constraints, non-inclusive media formats, and insufficient awareness among health professionals (Clemente *et al.*, 2022; Gréaux *et al.*, 2023; Kuper *et al.*, 2024; Ssemata *et al.*, 2024; Barrington *et al.*, 2025). These findings indicate a persistent gap between legal commitments and their practical realization in the health sector.

In the context of Yogyakarta, which has a significant population of persons with hearing impairments, the lack of inclusive health information tailored to the Deaf community presents a critical challenge. Ensuring that health information is available in accessible formats, such as sign language and visual media, is essential for promoting health equity and reducing disparities (James *et al.*, 2021).

In addressing these gaps, this study employs the Salutogenesis framework, a key concept in health promotion introduced by Aaron Antonovsky that focuses on factors that support human health and well-being, rather than factors that cause disease (da-Silva-Domingues *et al.*, 2022; Mittelmark and Bauer, 2022). The framework explains health development through the Sense of Coherence (SOC) and General Resistance Resources (GRRs). The SOC consists of three components: comprehensibility, manageability, and meaningfulness, while GRRs serve as social support serve as resources that enhance well-being (Mayer, 2024). In essence, the salutogenic concept applied to Deaf individuals emphasizes understanding and leveraging their inherent strengths, cultural identity, and support systems to foster a positive sense of health and well-being, rather than concentrating solely on the issue of hearing loss (Ladd, 2005).

This study aims to support the development of inclusive health information for the Deaf community in Yogyakarta by exploring their experiences and identifying their needs and preferences in accessing such information through the salutogenic model. The findings are expected to inform the design of more accessible and culturally appropriate health communication strategies.

METHODS

A qualitative design was used in this study to explore the needs, perspectives, and experiences of the Deaf community in accessing health information. Ethical considerations were strictly followed. Approval was obtained from the Medical and Health Research Ethics Committee (MHREC), Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, with certificate number KE/FK/0930/EC/2025.

Data collection was conducted through in-depth interviews with four participants from different Deaf communities who were deliberately selected based on their active involvement in the community, the relevance of their experiences to the research topic, and their willingness to participate. Both online and in-person interviews were conducted with the participants' informed consent. We also involved a Sign Language Interpreter (SLI) throughout the process, from the interviews to the transcriptions.

Data were analyzed using a thematic analysis approach based on the salutogenic core concepts. This process included transcribing and translating interview data, coding, grouping, and identifying key themes that represented participants' experiences using a matrix. Analysis was carried out iteratively to ensure depth of interpretation and reliability of findings. Data trustworthiness was further enhanced through member checking and peer debriefing.

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RESULTS AND DISCUSSION

Table 1 presents the demographic information of the four informants, providing an overview of their background characteristics.

Table 1. Characteristics of Subjects in In-Depth Interview Activities

Initial	Age	Gender	Education	Community
P1	29	M	Bachelor	Gerkatin, Pusbisindo
P2	34	M	Bachelor	Bawayang
P3	32	F	Master	Gerkatin
P4	27	F	Bachelor	PLD, Gerkatin, Mulia

Thematic analysis of the in-depth interviews revealed several key themes that capture the experiences and perspectives of the Deaf community.

Experience accessing health information

All participants in this study reported having accessed health information through social media. The content they encountered was generally presented with text or closed captions accompanied by visual elements, although such formats were not commonly available. One participant noted that subtitles combined with visuals made the content more attractive and engaging, which in turn increased their interest in following the health messages:

> *"I have seen media/content that used text or closed captions, but I rarely find that. When the subtitles were included with visuals, I felt happy and more interested in watching." (P2)*

In addition, one participant recalled their experience during the COVID-19 pandemic, when important health information was provided through collaborative initiatives. The participant mentioned a program that involved Gerkatin and the health sector, which included subtitles along with visual content.

> *"…For example, there was important health information, a collaboration between Gerkatin and the health sector using sign language, with added subtitles, but I forgot the details. During COVID, there was a collaboration with UGM, but I don't really remember since it was a long time ago." (P1)*

Another participant described their experience of seeing a health information video that appeared to be set in a hospital. The video portrayed the presence of a sign language interpreter, which enabled better access to information for Deaf patients. Although the participant could not recall the details, the video illustrated an interaction between two individuals, allowing the communication process to be more easily understood:

> *"I once saw that health information media, which seemed to be located in a hospital. There was someone acting as a sign language interpreter so that information could be accessed in the hospital. It was shown in a video or like a film, and it demonstrated the presence of an interpreter in the hospital. But I don't know the exact details. It only showed the interaction between two people, making the communication easier to understand." (P2)*

The results of this study indicate that inclusive health information is available, yet its availability remains very limited and not specifically tailored to the Deaf community. Social media and the Internet have emerged as an important channel for the Deaf to access health information. In line with previous studies, Deaf individuals tend to rely predominantly on social media and online platforms for health information rather than mainstream media (Almusawi *et al.*, 2021). Deaf individuals are also more likely to use the Internet and social media to access preventive strategies and health information compared to their hearing counterparts (Panko, 2022).

From a salutogenic perspective, the reliance on social media can be understood as an adaptive form of GRRs**)**. These platforms offer accessibility, rapid information flow, and ease of use, which help Deaf individuals navigate health-related challenges. Such resources are important because GRRs support individuals in coping with stressors and managing everyday demands (Antonovsky, 1996).

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Challenges and Barriers in Accessing Health Information

Two of our participants expressed difficulties in understanding information presented in both video and printed media, such as posters. They felt that the language used was too advanced, especially considering that members of the Deaf community come from diverse educational backgrounds. As a result, they found it challenging to understand complicated or technical terminology.

> *"...usually not all Deaf friends understand how to use Google. That's a challenge for Deaf friends, because for example, when searching for information on Google, the language is quite advanced. So Deaf friends don't really understand the sentences or the language used on Google."* (P4)

The lack of videos with subtitles or sign language interpreters also created additional barriers for some participants.

> *"Subtitles are important, particularly when simple language is used." (P1)*

Limited inclusive access to health information remains a persistent challenge. Deaf and hard-of-hearing individuals are less likely to receive information from healthcare personnel or mainstream media, partly because many outlets, including television, fail to provide sign-language content (Rogers *et al.*, 2024; Bouclaous *et al.*, 2025). Ensuring equitable access is therefore critical, especially given that Deaf individuals are 3.7 times more likely to have inadequate health literacy than hearing populations (McKee *et al.*, 2026).

Applying the SOC Concept to Understand the Deaf Community's Perception of Health Information

Antonovsky described the concept of SOC as *"a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that 1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable, 2) the resources available to meet the demands posed by these stimuli; and 3) these demands are challenges, worthy of investment and engagement"* (Antonovsky, 1987).

In essence, SOC reflects how individuals perceive their life and how to respond to stress articulated through its three core components: comprehensibility, manageability, and meaningfulness (Eriksson, 2022). Previous research has demonstrated that a strong SOC is positively associated with improved health outcomes and enhanced quality of life (Eriksson and Lindström, 2006).

Facilitating Factors in Accessing Health Information to Improve Comprehensibility

Comprehensibility refers to the thinking aspect of SOC and reflects how much a person feels that information about themselves, their surroundings, and their situation is understandable, organized, and coherent rather than random or chaotic (Moksnes, 2021). Enhancing comprehensibility is therefore essential for ensuring that Deaf individuals can meaningfully access and interpret health information (Galletta *et al.*, 2019).

Based on our study, information delivery using videos on social media was the most preferred format to improve comprehension for Deaf individuals. Videos should include subtitles and an Indonesian sign language interpreter who conveys the information in simple, easily understood language. The combination of subtitles and a sign language interpreter was considered the most effective and was perceived as able to reach a wider audience, including not only Deaf individuals but also those who are hard of hearing (HoH).

> *"For subtitles, maybe people who are hard of hearing need them more, or for Deaf individuals who use verbal communication and cannot use sign language, they can read the text. So what is needed are those two types of access: with text and with a sign language interpreter." (P2)*

Regarding the technical aspects of the video, some participants expressed a preference for the sign language interpreter to appear in a larger frame. Typically, the interpreter is shown as a small insert at the bottom of the screen.

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Participants suggested that placing the interpreter in the main frame, with equal prominence to the main speaker, would be preferable. A solid-color background was also recommended to reduce visual distractions.

> "*For me personally, I'm more interested when, for example, a hearing person is speaking and there is a sign language interpreter together on one screen. But usually the interpreter's display is too small in my opinion. Maybe it could be 50:50—half the screen for the visuals and half for the interpreter—or perhaps the speaker could be accompanied directly by the interpreter side by side in the same frame.*" (P1)

In addition to sign-language interpretation, visual illustrations and animations were also viewed as helpful, especially for Deaf children who are not yet able to use Indonesian Sign Language

> "*For young children who usually do not understand sign language interpreters, it is better to use animation because they can enjoy the visuals at the same time.*" (P2)

Overall, our findings indicate that educational videos in Indonesian Sign Language combined with illustrative visuals were preferred over other forms of information media. This aligns with previous research showing that Deaf participants prefer health information delivered through visual formats such as videos with subtitles and sign language rather than text-based formats alone (Chandanabhumma *et al.*, 2024).

Several previous studies have shown that multimedia content, particularly sign-language videos, significantly improves knowledge among Deaf participants (Lala Putri and Yati, 2023; Fageeh *et al.*, 2024). Culturally and linguistically tailored health education videos co-created with Deaf community have been shown to effectively enhance learning and retention on specific health topics (Saad Elfar *et al.*, 2024). Although not all content must be fully translated, an introductory sign-language segment that highlights complex information, when paired with subtitles or written text, can enhance comprehension and engagement with health materials (Rowland *et al.*, 2025). These observations underscore the importance of incorporating subtitles, sign-language interpretation, and engaging visuals into health promotion to strengthen health literacy and reduce information inequities (Lee *et al.*, 2023; Yang *et al.*, 2025).

The Pivotal Role of Deaf Communities in Supporting the Manageability of Health Information

Manageability represents the practical aspect of SOC, referring to the degree to which individuals believe they have access to adequate internal and external resources that enable them to handle the challenges they face (Moksnes, 2021). In the context of health information, these resources can include personal skills, social support, and community structures that help individuals navigate and respond to health-related challenges.

Consistent with our finding, local Deaf communities function as crucial external resources, functioning as informal yet highly effective platforms for sharing and clarifying health information. Participants described how they often exchange information with peers, using their social networks as a way to reinforce learning and ensure accurate understanding.

> "*Sometimes I also share (information) with my (Deaf) friends, sometimes I just keep it to myself, and sometimes I tell my friends so that I don't forget. For example, if I forget later, my friends can help remind me.*" (P3)

Although opportunities remain limited, some Deaf community groups have already begun organizing health-related activities. These include seminars designed specifically for Deaf audiences, delivered in accessible formats.

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> *"...I have, but not as a participant. I was there as moderator of a mental health seminar for Deaf friends."* (P4)

These findings align with previous studies indicating that Deaf community networks play a central role in health information sharing (Bouclaous *et al.*, 2025; McKee *et al.*, 2026), particularly in the context of access to health information. Engaging active local Deaf organizations, such as those in Yogyakarta, can help sustain these exchanges and should be supported by local government and stakeholders. This directly contributes to the SOC component of manageability,and can help the Deaf community to foster confidence in navigating health information, and improve the overall ability to respond to health challenges effectively.

Motivation to Learn About Health Related Topics as Reflection of Meaningfulness

Meaningfulness represents the motivational dimension of SOC and describes how strongly individuals feel that particular aspects of life are valuable and deserving of their time, energy, personal engagement, and commitment (Moksnes, 2021). In our findings, participants demonstrated that while general health is perceived as important, there are specific health priorities within the community, particularly concerning two key issues: reproductive health and mental health.

One participant highlighted reproductive health as an issue of concern due to its perceived importance. P2 stated:

> *"There are some that I am more interested in reproductive health issues, then… It seems like there is only one, about reproductive health because it is important."* (P2)

Another participant noted that reproductive health is also an engaging topic for the Deaf community, especially in the context of educational media. P3 expressed:

> *"Interviewer: "What kind of educational media is currently appealing to the Deaf community? Is it about nutrition, or are there other topics that are interesting to your community?*
> *P3: Reproductive health."*

In addition to reproductive health, mental health emerged as a key concern, also voiced by two out of the four participants. These participants emphasized that mental health is a crucial yet often neglected issue within the Deaf community. One participant shared that many Deaf individuals do not receive adequate emotional support from their families, leading them to seek support elsewhere. Mental health challenges were described as stemming from various environments, including school, home, and the workplace. As P3 explained:

> *"Yes, the top issue is mental health, ma'am. Because some Deaf friends don't get support from their families, so they end up looking for support outside their homes. They have problems at school, get bullied, or face discrimination at work."* (P3)

Another participant, P4, reflected on a new awareness of the importance of mental health for Deaf youth:

> *"I just realized that mental health is really important for Deaf children."* (P4)

The findings of this study indicate that while general health is perceived as important by the participants, there are more specific needs that are particularly relevant for the Deaf community. Reproductive health is considered one of the priority topics. Previous research has also demonstrated that many Deaf individuals possess limited knowledge of reproductive health (Suariyani *et al.*, 2020; Nketsia *et al.*, 2022; Sukmawati *et al.*, 2024). Reproductive health, in particular, is considered important because it is directly associated with

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bodily awareness and reproductive rights (Nketsia *et al.*, 2022; Panko, 2022; Bakht *et al.*, 2023).

In addition, mental health issues are also considered a critical concern among participants. Deaf individuals are at a higher risk of experiencing mental health problems compared to the general population, partly due to communication barriers, social exclusion, and limited access to mental health services (Rogers *et al.*, 2024). Such experiences may exacerbate feelings of isolation and marginalization, which can negatively impact mental well-being (McRae *et al.*, 2025).

This study underscores the urgent need for inclusive, culturally attuned health information strategis that integrate the perspectives of Deaf individuals. By prioritizing accessible formats and addressing key health concerns such as reproductive and mental health, health promotion efforts can move closer to reducing information inequities, improving health literacy (Reynolds and Davis, 2024), and supporting health equity for the Deaf community in Indonesia.

CONCLUSION

Inclusive health information for the Deaf community in Indonesia remains limited in both coverage and accessibility. These gaps reduce access to key GRRs such as clear communication channels, accessible formats, and supportive community networks. Strengthening these resources is essential for improving the SOC by enhancing the comprehensibility, manageability, and meaningfulness of health information.

The findings indicate that addressing priority health topics for the Deaf community, must be supported by information that is accessible, culturally appropriate, and relevant to their lived experiences. Inclusive and participatory approaches should be recognized as salutogenic strategies. Actively involving Deaf individuals and Deaf-led organizations in the design and dissemination of health messages strengthens GRRs and reinforces SOC at both individual and community levels.

This study involved four adult participants, which limits the breadth of perspectives. However, the insights provide a meaningful foundation for future research. is common in qualitative research and does not diminish the depth of the analysis.

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