

# Information needs of a vulnerable community: The case of visually impaired first-time mothers in Malaysia

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## ABSTRACT

*Interest in exploring women's new experiences as they step into motherhood and their information behaviour has increased over the last decade. However, little attention has been given to vulnerable first-time mothers, specifically those with visual impairment. This study aims to provide an insight into the information needs of first-time mothers with visual impairments as they embrace motherhood. A case study design was employed to capture the information experiences of first-time mothers with visual impairment during their first year of motherhood. Three data collection techniques were employed, namely interviews, observations and audio diary, that provided rich and deep insights into the experiences of these mothers. The codes-to-theory model for qualitative inquiry resulted in identifying five main facets of information needs, namely baby care, mother care, family welfare, daily living and disability rights. Wilson's model of information behavior is used to provide an understanding of how these mothers' personal factors, role demands and environmental context shape their information needs as they take on the role as mothers. The findings raise implications for strategies to facilitate this vulnerable community's information provisions, specifically in the context of visually impaired mothers.*

**Keywords:** Information behaviour; Information needs; Motherhood; Visual impairment; First-time mothers; Vulnerable community.

## INTRODUCTION

Motherhood is believed to be one of the most challenging endeavour in a woman's life events, particularly for a first-time mother (Demo & Cox, 2000; Law et al., 2018). New mothers experience significant physical, psychological, and sociological transformation as they go through this stage of transition. They have to adapt and be ready for new experiences and ways of living, hence leading to a variety of information needs on various subjects and bringing about new requirements for support, social interactions, and relationships (Loudon et al., 2016). Studies show that timely information provision assists first-time mothers in dealing with their new role, as well as facilitate their transition into motherhood (Ruthven et al., 2018a; 2018b; Panahi et al. 2020). During this transition, new mothers are also more prone to post-natal depression and parenting stress (Xin, 2022).

Conventional wisdom denotes that visually challenged mothers are incapable of executing motherhood competently. Due to the nature of their visual disorders, these mothers are reported as one of the most at-risk parent groups (Frederick, 2014). Studies reveal that these mothers' anxieties are associated with everyday experiences and adaptations, as well as the insufficiency of information accessible to them (Azzopardi-Lane & Callus, 2016; Frederick, 2014). They are obliged to deal with the physical and psychological requirements of being a mother, in addition to handling their disability (Lawler et al., 2013), as well as uncertainty with their ability to secure the child's physical and emotional well-being. More notably, the most dominant fear about this group of new mothers (visually impaired), is to ensure that they are capable of raising a child to grow as part of a productive society.

Berget and MacFarlane (2020) reported that studies on information behaviour of groups with impairments were nearly missing from the Library and Information Science (LIS) literature, however, Xie et al. (2021) report otherwise. They reviewed 165 research articles to reveal the methods used in studies on blind and visually impaired users in the LIS literature. They found that studies on information needs and behavior were the second most popular topic among researchers, after accessibility. The methods of investigation used for information needs and behavior included survey, experiment and case study, with questionnaire and interviews being the main data collection technique used. It is noteworthy that studies on first-time visually impaired mothers were not yet present.

Addressing the need for better understanding within the LIS community towards serving diverse, marginalized and vulnerable population, this is the first study in Malaysia to focus on visually impaired first-time mothers to understand how a health impairment (of being visually blind) forms the attendant motives relating to their information needs based on personal factors, role demands and environmental context as they embrace motherhood. This study is part of a larger study which examines the subsequent information-seeking and information use behaviour of this group.

## **RESEARCH OBJECTIVE**

The study's objective is to explore the information needs of first-time mothers with visual impairment (FTMWVI) during their journey to motherhood in the first year after childbirth. The study contributes to understanding the physiological, affective and cognitive motives that influence a mother's information behaviour, beginning from the formulation of an information need in their mind. The subjective experience of information needs is discovered by deduction from their behaviour and self-reports.

Wilson's (1999) information behavior model is adopted in understanding the information needs of the of first-time mothers with visual impairment (person-in-context). In the following section, a review of the relevant literature is discussed to justify the importance of studying this group of mothers and the suitability of the Wilson's (1999) model in understanding the information needs of this group.

## **LITERATURE REVIEW**

Although research has been conducted on different aspects of information behaviour, individuals with disabilities are consistently underrepresented in the extensive research on

information behaviour. This review first presents the evolving conceptual definition of information need, followed by empirical studies on information behavior of people with impairments, and then more specifically studies on mothers who are visually impaired.

### **Information needs**

It is fundamental that to learn and deliberate any concept, it must begin with a conceptual definition. Since the 1960s, there have been differing perspectives regarding the definition of the concept of information need in academic discourse (Case & Given, 2016). The primary investigations about information needs can be traced back to the timeframe spanning from late 1960s to the 1990s. Taylor (1968) studied the concept of information as a means of finding answers. He talks about a four-step process that starts with a “conscious or even unconscious need for information...a vague sort of dissatisfaction...probably inexpressible in linguistic terms” (p.182). Taylor uses the term “visceral need” to describe the unconscious needs which may subsequently be expressed in words but might differ slightly from the original mental requirement (p.182). Wilson has presented a series of information-seeking models (Wilson, 1991, 1997, 1999) which saw the notion of causal factors that produce a need for information, as well as barriers which may prevent information-seeking, to move on to a model that emphasizes the “person-in-context” – taking into account the personal factors, role demands and environmental context. Belkin (2005) continued to build on the concept of information as a means of reducing uncertainty. He argues that when faced with a question or request, individuals may attempt to reduce their uncertainty by acquiring or referring to information. Kuhlthau (2005) likewise, presented a groundbreaking emphasis on the role of emotion in information behaviour. Her research heavily relies on the importance of minimizing uncertainty. Taking into account a certain ambiguity in using the concept of information needs to comprehend why individuals seek information, Case and Given (2016) argued that there is a requisite to further investigate the essence of information needs in the realm of human information behaviour research.

Overall, the collective scholarly contributions of the aforementioned researchers have established theoretical frameworks to facilitate scholarly discussions on this phenomenon, that the cognitive process by which an individual acknowledges the requirement for information, occurs within the realm of the human mind. In addition, their perspectives regarding information needs can be represented on a spectrum that displays their beliefs about the characteristics of information, the reasons people pursue it, and its intended purposes. Wilson’s model of information seeking behavior that had put forth the idea of the personal, social role, and environmental context that gives rise to a need for information, forms the basis of this study’s investigation. Wilson’s (1999) explication towards the concept of information behaviour has gained widespread recognition, and it has played a significant role in molding the LIS field. He delineated information behaviour as the actions and decisions people make concerning information, encompassing how individuals search for, interpret, and apply it. This has established the context for basic and resulting information needs. In the same vein, Robson and Robinson (2013) argued that different contexts in the environment influence how people search for information. This could cover the environment in which the search takes place, including factors such as geographical location, social dynamics, daily routines, and personal details like background and health state.

### **Information needs of people with impairment**

Early studies on disabled people were dominated by the medical context as the issue of disability in the 1970s focused mainly on the aspects of disability experienced by these individuals (Anthony, 1972; Laski, 1975; Weinberg & Williams, 1978). In later year, scholars including Bogdan and Taylor (1989), Barnes (1992), Kitchin (1998), and Oliver (1990) stirred research on the disabled populations that looked at aspects of stigma and identity deviations. Still, there was insufficient research on the issues of the disabled that emphasized the social aspects of life within the minority group. Meanwhile, through the lens of LIS literature, a study by Kazuye Kimura (2018) that was based on an analysis of 95 peer-reviewed articles in the LIS literature published after the year 2010, associated with the accessibility of electronic resources by the disabled community, the library profession has greatly emphasized its continuous support in helping individuals with different abilities access information resources and services.

Among the previous studies that examined the information needs of individuals with visual impairments was by Moore (2002). He conducted a thorough review of 70 studies to create a valuable model for understanding the social information needs of visually impaired people. His findings suggested that people with visual impairments, as citizens and consumers, have similar information requirements as those with sight. He further categorized the information needs into eight clusters including eye condition and treatment, financial benefits, general health, mobility, housing, services, equipment, and employment/ education/ training. Additionally, Beverley et al. (2007; 2011) built upon Moore's work by proposing a hierarchy of information needs related to health and social care for visually impaired individuals. Their studies highlighted the importance of information regarding eye conditions, health services, aids/equipment, and social care facilities for this population.

Wang and Yu (2017) examined both the information need and information-seeking of the visually impaired in China. The research revealed three clusters of information needs related to practical issues in daily life, problem situations and important life events. Among the highlighted informational topics were related to personal interest, self-development, health and social care, work-related and welfare for the blind. In Nigeria, Adesina et al. (2022) examined the information-seeking behaviour of visually impaired individuals during the COVID-19 outbreak. This group of people tend to rely on family, friends, neighbors, and acquaintances, as well as radio and television shows. The main problem they faced in being self-reliant in their information seeking is the limited provision of digital services as physical access was limited during the pandemic. Their information need for current events and health programs was restricted due to absence of adequate assistive devices and software.

Research with students who have visual impairments has also revealed different types of information requirements, highlighting the importance placed on receiving the necessary support and adjustments to guarantee fair access to education and resources. In enhancing the societal integration of visually impaired students in higher learning institutions, Okiki and Okonj (2019) discovered essential details regarding the subject of employment opportunities and effective information services. This is crucial as it could provide an opportunity for active involvement by the students, other than to make informed decisions and full participation in society. Based on a study involving four universities in Pakistan, Ahmed and Naveed (2020) similarly highlighted educational information as the most sought theme by visually impaired university students, as would be expected of a student. However, there also exists a need for information on the latest

software and applications that can be used to read digital materials, even though there was a lack of this support by the university library. More recently, Khowaja and Fatima (2023) investigated the information seeking behavior of visually impaired students in two Indian universities. They found that besides academic and job search related information, the visually impaired students were concerned about their health-related information. Having a disability and being away from family and home can induce additional stress on visually impaired students.

Although studies reveal that the key information needs of people with impairment may not be much different from others, there are some concerns over having adequate knowledge on tools and software available to access digital materials as most information nowadays is increasingly available in digital format.

### **Information needs of first-time mothers and those with visual impairment**

Literature points out that involvement with motherhood apparently can spark both positive and negative psychological growth (Horner et al., 2016; Nelson, 2003; Richter et al., 2022), while others believe that it could make sense to life (Moran et al., 2018; Richter et al., 2018). While women are subjected to societal pressure to become “good mothers”, mothers who are incapable of fitting within this dogma are consequently remarked as unreliable mothers (Azzopardi-Lane & Callus, 2016). Focusing on the everyday life information seeking behavior of first-time mothers, Loudon et al. (2016) found that these mothers tend to withhold information needs from others because of their fear of judgement or pressure to be good mothers. Ruthven et al. (2018a; 2018b) also revealed that emotions, especially negative emotions, are very strongly linked to information needs of first-time mothers. Their investigation led them to conclude that the information needs of first-time mothers include both child related needs, such as creating a positive environment for the child’s development and health and the mother’s own well-being and relationships.

Mothers with impairment, are continuously under scrutiny in accomplishing their role as a mother, even more so during their first experience of motherhood. Shandra et al. (2014) believe that disabled mothers possess valid rights and share similar attitudes towards motherhood as able-bodied mothers. Former discussions (Bassoumah & Mohammed, 2020; Shahbazzadegan et al., 2018; Frederick, 2015) reported on injustices encountered by women with visual impairment that limit them from practising their reproductive rights as women. Frederick’s (2015) qualitative study on visually impaired mothers’ encounters during their postnatal care in hospitals across the US revealed that prejudice may be uttered as negative feedback to the women’s pregnancy and parenting.

It is also notable that one of the challenges for mothers with visual impairments is regarding accessing healthcare information. The majority of early studies focused on the whole child-rearing experiences of mothers with visual impairment and eventually highlighted a pressing area of attention, namely on information experiences. Azzopardi-Lane and Callus (2016) and the Commission for Healthcare Audit and Inspection (2008) described a constant battle for mothers with visual impairments to maintain a sense of dignity and accessible information. Empirical studies reported that existing predicaments have led to stress, emotional instability and lower life satisfaction (Lorenzo-Blanco et al., 2019; Parkes et al., 2011) in which parenting support is crucial to some extent in their child-rearing course. In addition, Sung and Parboteeah (2017) pointed out that there has

been a small amount of research in the field of LIS on the topic of disability or accessibility, accounting for only 2.68 percent. McKenzie (2003) asserted that new mothers can be regarded as a rich context in that to study information-seeking. Expectant and first-time mothers are highlighted to be vigorous information seekers who quest for information for themselves and their families (Madge & O'Connor, 2006; Ruthven et al., 2018). This group frequently refers to a diversity of information sources before decision-making.

### **Information support for people with impairment in Malaysia**

Informational support plays a crucial role in facilitating the transition of mothers into their new life role and instilling confidence in their ability to assume motherhood responsibilities (Darvill et al., 2008; Leahy-Warren et al., 2012; Loudon et al., 2016). Preceding studies have often emphasized people with visual impairment as a homogenous group (Beverley et al., 2004), and information provision catering for them has been largely uncoordinated (Davies, 2007; Kazuye Kimura, 2018). As stipulated in the Persons with Disabilities Acts (2008), Malaysia has recognised the importance of accessibility to aspects such as information and communication to enable full and effective participation of people with disabilities in society. Many relevant authorities and other stakeholders have made numerous attempts and actions to offer assistance. Krishnamoorthi et al. (2024) elaborates Malaysian government's commitment to assisting individuals with disabilities through the creation of the National Council for People with Disabilities. The Ministry of Women, Family, and Community Development has encouraged visually impaired people to become a registered member. It assists the government and relevant organizations in catering to the wide range of needs these individuals may have, such as the provision of information services via accessible platforms. Registering for disability also offers a more precise overview of the population of individuals with disabilities in the nation. Many associations for individuals with vision impairment such as the Malaysian Association for the Blinds and the Society of the Blind in Malaysia have been established to provide support and assistance to their members (Nasir and Hussain, 2021). It plays a crucial role in spreading information and providing services to blind and visually impaired people by arranging educational events and offering advocacy and information resources.

The libraries also play a crucial role in providing students with visual impairments with equal access to educational materials and opportunities, ensuring that they receive comprehensive information services. Initiatives by academic libraries in Malaysian universities, as accentuated by Pebrianti (2023), has identified Braille collections, large prints, electronic resources, audio-visual and multimedia resources as library resources offered in Dar Al-Hikmah Library. Bodaghi et al. (2019) delves into how the communication abilities of Malaysian academic librarians impact the effectiveness of the transition program for visually impaired students in university. The essence of success in transition programs goes beyond physical integration to encompass creating a supportive environment and ensuring users with special needs feel connected to the community to prevent isolation from the mainstream. Munin and Yu (2018) demonstrated that there are ample services offered by academic libraries, such as volunteer readers and accessible facilities equipped with assistive technologies, including specialized computer equipment like Braille printers and Jaws software for users with disabilities. The findings also suggest that the current levels of performance for basic services and technology are satisfactory, but there is room for improvement.

Malaysian Healthcare facilities through its initiatives such as The Malaysia National Plan of Action for Nutrition aim for 70 percent of infants to exclusively breastfeed until six months by 2025. One strategy is the Baby-Friendly Hospital Initiative (BFHI), with over 130

hospitals accredited as BFHI in Malaysia. Despite efforts to promote breastfeeding benefits, the exclusive breastfeeding rate in Malaysia remains below the WHO and Ministry of Health Malaysia recommendations (Siti Mariam et al., 2022). However, the breastfeeding experience of mothers with visual impairments in Malaysia is not well-documented, as there is minimal information available. Research conducted by Aizan Sofia et al. (2019) on women with disabilities, has provided a unique perspective on disability and gender experiences and simultaneously sheds light on the need for further research on disability focusing on Malaysian women with disabilities. The narratives revealed a web of complex factors such as gender, socio-economic status, and impairment that shape the experiences of disabled women in Malaysia. These experiences are dynamic and influenced by a combination of personal and environmental factors. The interplay of family, culture, and religion is crucial in understanding how disabled women in Malaysia navigate marriage and motherhood. The limited under-representation of disabled people in society, along with their absence in mainstream media, has caused many false ideas about the abilities of disabled women in traditional female roles.

## **METHODS**

The International Classification of Diseases state that there are 4 stages of visual function, namely normal vision, moderate visual impairment, severe visual impairment and blindness (World Health Organization, 2011). In the context of this study, visual impairment refers to varying degrees of vision function impairment ranging from short-sightedness to total blindness. Statistica.com (2021) reports that in 2020, among the total number of people with blindness worldwide, 55 percent were women. The Department of Social Welfare (2024), reports that the registered number of women with visual impairment is 20,071 as at January 2023, which is 36.3 percent of the total persons with visual impairment in Malaysia. The state of Selangor has the largest number of people with disabilities (*Orang Kurang Upaya* [OKU]) totaling to 16.5 percent of the registered population.

Adopting an interpretive paradigm, a case study design was employed to capture the information experiences of the FTMWVI during the first year of motherhood. Case study is a well-established research method which has obtained a reputation in information behaviour topics (Mahony et al., 2022; Mulauzi et al., 2020; Subekti, 2019). The early participants were identified through liaison with the Malaysian Association for the Blind (MAB), Malaysian Association Development for the Blind (PPOBM) and Society of the Blind in Malaysia (SBM). Snowball sampling was used to enroll subsequent participants. The data for this study were primarily gathered from the semi-structured individual interviews. Additional data collection techniques including audio diaries and direct observation were also employed to offer triangulation and trustworthiness to confirm the findings, as well as to answer the research question.

In the first month, the researcher contacted potential participants and began building rapport. Data collection happened from August 2017 to April 2018. Initially, there were six potential FTMWVI who became interested and agreed to participate in this study. Nevertheless, due to personal reasons, one FTMWVI decided to withdraw before commencing. Hence, five FTMWVI remained in the study.

### **Instrumentation**

The semi-structured individual interview questions were formulated based on the guidelines of Wilson's (1999) Information Behaviour Model and other related studies on information behaviours (Loudon et al., 2016; Sink, 2009). The study received approval from the Universiti Malaya Research Ethics Committee, and was also reviewed and validated by two expert panels. The informed consent was obtained both via Braille participant information sheets and verbal agreement. Overall, 20 semi-structured individual interviews were conducted between August 2017 and April 2018. Four participants chose to have the face-to-face interviews in their homes, while one opted for an interview at a shopping mall near her residence. The interviews lasted between 50 to 60 minutes. All responses were audio recorded and transcribed verbatim. The researcher also took field notes on issues worth exploring further. A follow-up interview was conducted a few weeks after the initial one, giving participants a chance to share more thoughts or clarify previous comments about their information experiences.

The audio diaries approach was utilized to gain a deeper understanding of the information experiences of participants, including their emotions, challenges, and the everyday realities. Participants were informed about using audio diaries for data recording. They were provided with an audio diary kit during the interview. The kit included a digital audio recorder, a heavy-duty carbon battery, a braille memo on ethical guarantees, a user manual, and an audio diary protocol. Participants made entries about their daily activities at their convenience, with details such as date, time, description of the activity, emotions, challenges, and other relevant comments. A minimum of three entries were made with no maximum limit. The audio diaries were transcribed verbatim. Some participants requested digital memos via WhatsApp. The researcher showed participants how to use the recorder for practice. The researcher focused on details like tone and background noise in the audio recordings. The diaries were transcribed at different stages.

Naturalistic observations were employed to observe the participants directly as they executed their everyday routines, under their permission, within their natural environments and without any attempt to control as prescribed by Bordens and Abbott (2020). The researcher took notes during observations, which were finalized after each session. An observation grid adapted from Roller and Lavrakas (2015) was used as a guide to remember key points and topics of interest and to reflect on the researcher's understanding or comments about the observed situations. Field notes were used as evidence to provide more information. Follow-up visits with participants included member checking to confirm the information and to add to the notes. Member checking continued throughout the study to allow participants to discuss the emerging conclusions.

### **Data analysis**

Data (transcribed and selected data) were gathered and organized in electronic files by codes-to-theory model for qualitative inquiry using Atlas.ti. There were four phases of data analysis involved based on Saldana's (2016) streamlined codes-to-theory model for qualitative inquiry. Only the data on information needs is reported in this paper. Figure 1 illustrates an example of the streamlined codes-to-theory model for qualitative enquiry.

- a) Synthesize raw data into symbolic summary (codes)
- b) Make sense of the world by noticing repetition and formulating through cognitive schemes and scripts (patterns)
- c) Cluster similar things together through comparison and contrast (categories)
- d) Imprint key learnings from extended experiences by creating proverb-like narrative memories (themes).



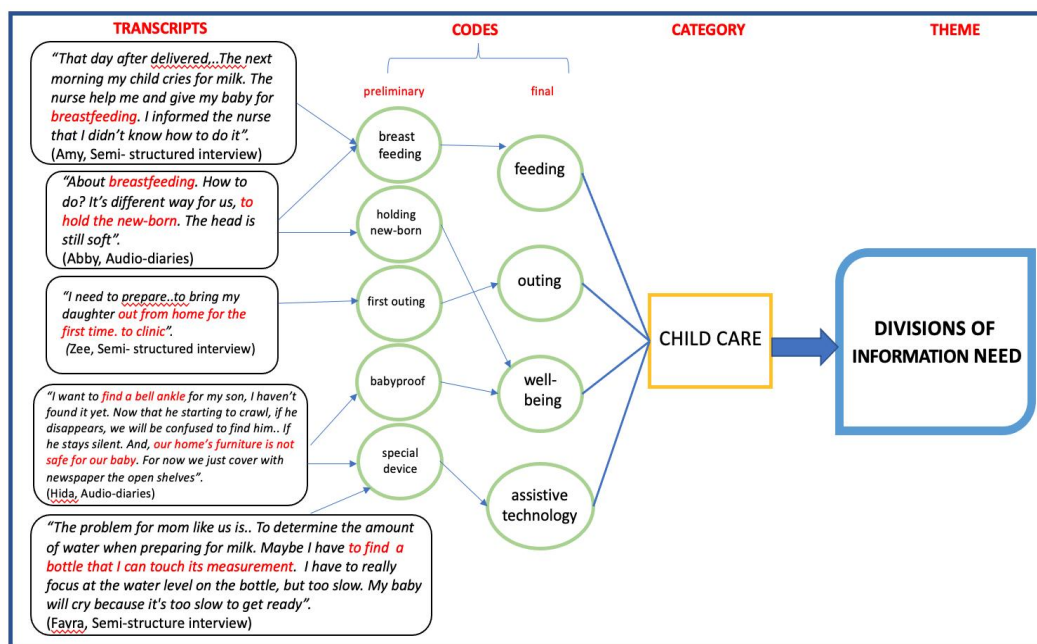


Figure 1: Information Needs Theme Development Process (adapted from Saldana, 2016)

## FINDINGS

The findings are reported based on data derived from semi-structured individual interviews and audio diaries, and supported by data from direct observations. The researcher has translated the original data which was in the Malay language. Any loss of meaning is acknowledged by the researcher. Table 2 presents an overview of the study participants.

Table 2: Overview of Study Participants

Pseudonym	Age	Education	Occupational status	Category of Disability	Caused and Duration of Disability
Zee	33	Malaysian Certificate of Education	Health care assistant	Total blindness in both eyes	Multiple Sclerosis 7 years
Abby	26	Malaysian Certificate of Education	House-wife	Total blindness in both eyes	Since birth 26 years
Amy	35	Malaysian Certificate of Education	Government staff	Total blindness in the right eye and slight vision in the left eye	Since birth 33 years
Hida	31	Diploma in Hospitality Management	House-wife / Online business	Total blindness in both eyes and slight vision in light	Car accident 9 years
Fayra	27	Degree in Malay Languages	Administrative executive	Total blindness in both eyes and slight vision in light and shape	Since birth 27 years

The information needs data revealed five distinct themes: baby care, mother care, family welfare, daily activities, and rights for people with disabilities. These themes are illustrated in Figure 2, derived from Atlas.ti.

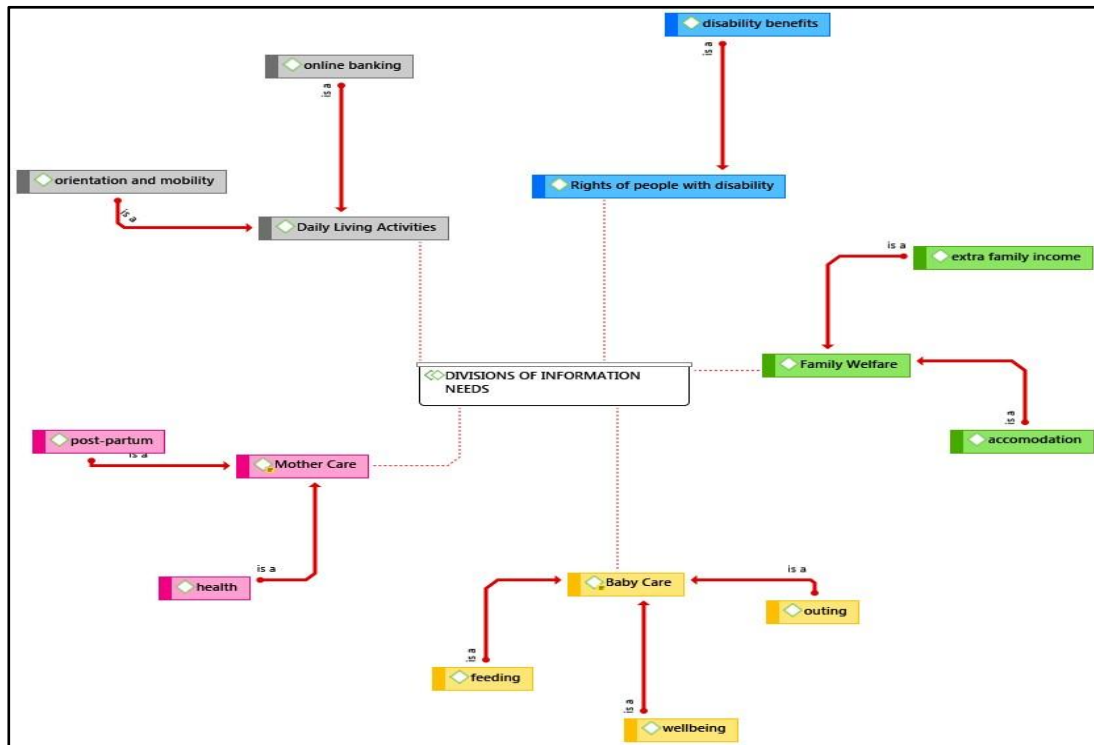


Figure 2: Themes of Information Needs Among First-Time Mothers with Visual Impairments

### Theme 1: Baby Care

It was ubiquitous that the majority of the mothers demonstrated compelling needs for baby care information. Within this, they discussed multiple needs and issues of effect across several topics as exemplified in Table 3.

Table 3: Baby Care Topics and Examples

Topics	Examples
<b>Feeding</b>	Breastfeeding, formula feeding, lack of infant feeding knowledge, disability circumstances with breastfeeding, introduction to solid foods.
<b>Well-being</b>	Health and safety, developmental milestones, babysitter, life insurance.
<b>Outing</b>	Arrangements for a safe and organized journey.

#### (a) Feeding

The majority of the mothers engaged actively in a search for feeding-related information in their early motherhood phase, mainly on the lack of breastfeeding-related knowledge, disability circumstances with breastfeeding, and introduction to solid foods. There is an awareness of how important breastfeeding is, therefore some of the mothers emphasized the need for information about it. According to the mothers:

*"I am sad. Yesterday my doctor suggested switching from breastfeeding to formula (sobbing). Because of my MS (Multiple Sclerosis) medications that were newly prescribed*

*for me. I should ask the doctor more after this, or is there any other suggestion?" (Zee; Audio-diary).*

*"I need to know how to breastfeed. They need to teach this to someone with visual disabilities, teach how to hold a baby when breastfeeding because it is different from sighted people's method" (Abby; Interview).*

*"I'm not good with breastfeeding, don't have the skills to do it. I struggled a lot! I have experienced that when my baby cries for milk, I need to find her mouth with one hand, while the other hand is used to support her body. It gets me confused again, it's pressure" (Fayra; Interview).*

*"About breast pumps. I asked a friend. I started buying the expensive one. And when I started pumping, the nipple was bleeding! Maybe I used the wrong technique. Should I learn how to use it?" (Fayra; Interview).*

There is evident stress and anxiety experienced relating to techniques of breastfeeding. Several mothers expressed worry about introducing their infants to bottle feeding. Zee and Amy opened up about their challenges while trying to teach their infants to use a bottle.

*"I was almost hopeless and sad. My baby didn't want to drink from the bottle. I asked everyone what should I do. My sighted friend suggested changing the teat, to a new bottle, I tried everything. I was so sad, wondering could it be another way that I should know (sigh)" (Zee; Audio-diary).*

*"Another concern of mine is to introduce my baby to bottle feeding. She doesn't seem to want the teat. And every time I give it to her, she rejected it. I want to know what I need to do" (Amy; Interview).*

The mothers acknowledged that starting their infant with solid foods was one of the most unpredictable and bewildering encounters. They need a complete guide to starting their baby with solid foods. Apparently, spoon-feeding seems to be a challenge for the mothers. Likewise, there is also a requirement to have information on the preparation of the food, and safe cooking utensils to be used.

*"Me and my husband went to a baby shop...I want to buy a milk bottle with a touchable dot or line on it. He (salesperson) looked surprised. I asked if there was any special milk bottle for blind parents, then the answer was no. But luckily there was one where the water level line could be touched" (Fayra; Interview).*

## **(b) Well-being**

The mothers reported various topics of interest on the well-being of their babies. The needs highlighted information encircling the baby's health and safety, developmental milestones, babysitter, and life insurance. For example, there is a pressing need to child-proof the home tailored to the needs of blind parents, especially when the baby starts crawling and walking. Information on precautions could help in protecting the infant. Additionally, they also highlighted matters pertaining to monitoring the whereabouts of the baby and health issues relating to medication and recognizing symptoms.

*"I know my baby's body is itching. I could feel the rashes. Is there any specific medicine suitable for the baby? I don't know"* (Zee; Interview).

*"Right now, I'm monitoring my baby's eye condition. I don't know how things are. I hope her eyes will be fine. Oh, and is there any compulsory or additional immunization?"* (Amy; Interview).

One intriguing statement made by Zee further emphasized the importance of acquiring knowledge in managing her baby's clothing as a means to demonstrate her competence in caring for her child.

*"I can't find the things that our baby needs. Like her clothes after I washed them, I don't know which one matches, so many little pieces. I don't want people to say that I could not dress my baby properly, you know because of my eyes"* (Zee; Audio-diary).

Out of all the mothers, Hida and Fayra were the only ones who acknowledged the significance of initiating effective early communication with their babies and introducing early education. In addition, Fayra has recently started setting aside funds for her daughter's education costs.

*"I also trying to find out more about our baby's early education. How are we going to teach ABC with our eye conditions? How to teach the numbers? How to write? How can both of us have good communication since we cannot see?"* (Hida; Interview).

These mothers were concerned about their baby's health and mental development.

### **(c) Outing**

Bringing a baby for the outing was an exciting experience for the mothers. For this reason, they highlighted the need to acquire ample information beforehand. It certainly helped them in preparing for a well-organized and safe journey. The mothers highlighted the information needed for a safe and well trip. They narrated the experience as follows:

*"Traveling with a blind family and a small child on public transport needs careful planning...like taking a train and then a feeder bus to the clinic. We had to walk uphill, with my husband pushing the stroller and me holding his shoulder. My husband, who has partial vision, acts as my guide. We don't use blind canes because they are inconvenient. Knowing the area helps, but new places can be difficult. Careful planning is crucial for smooth journeys"* (Abby; Direct observation).

*"Before we went back to our hometown, I asked my friend what to bring in preparation for my child. I asked whether to use a female or male toilet when changing the diaper because usually, I would do it together with my husband at the OKU (toilet for the special needs users)"* (Hida; Interview).

*"Today is the first time my husband and I took our baby out on the Light Rapid Transit using a carrier bag. My husband and I felt nervous, and I felt shy because there was a viral thing about blind people taking their children on the train. So, I'm afraid that people will say that it will go viral. Need to know more what needs to be packed along for the next outing"* (Fayra; Direct observation).

**Theme 2: Mother care**

The second sub-theme of information needed is mother care. The majority of the mothers were aware that their physical and emotional state has moved through many changes since the delivery of their babies. Within this, health and postpartum care topics have been of particular importance, as illustrated in Table 4.

Table 4: Mother Care Topics and Examples

Topics	Examples
Post-partum	Self-recovery, balanced diet, hormone changes, religious and traditional beliefs concerning postpartum care, family planning, and separation anxiety.
Health	Pre-existing health conditions.

**(a) Post-partum**

All the mothers agreed that they need to manage themselves, hence critically requiring information on what they should do for their post-partum care. Abby and Amy had a Caesarean delivery, whilst Zee, Hida and Fayra went through normal birth. Some of the self-recovery questions were prompted by the need to know about self-care after delivery.

*“I was just worried about the wound on my stomach. How to recover? What happens if I lift heavy stuff? I was afraid of the operation stitches. The wounds will become worse” (Amy; Audio- diary).*

The mothers likewise wanted information on nutritional food and a balanced diet. They need to know what to consume after having a baby. With proper food intake, they ought to feed their body in a way that sets them up for the next phase of life. Some breastfeeding mothers also believed that it could supply their little ones with ideal nutritional support.

*“The nurse didn't even mention what to eat to help increase the breastmilk production, which we have to find ourselves” (Fayra; Interview).*

The mothers also experienced symptoms of baby blues during their confinement period. Emotions appear to the fore at arduous moments, and at times they find it hard to know what to do best. Their minds become bewildered and they are upset. A few concerns were reported about getting adequate information regarding the change in hormones after delivery and stress management.

*“I want to find out more how to control emotions. Becoming a mother and our hormones change too, easily become tired, so our emotions are easily change” (Abby; Interview).*

Of religious and traditional beliefs concerning postpartum care, Hida felt a lack of information pertaining to the matter. She reported too many dos and don'ts received from close family members, hence making her more confused.

*“That's what I searched on YouTube. Islamic education on postpartum care. There are many lectures about nifas (post-natal bleeding), performing purification bath (Islamic ritual). I got that information that I needed” (Hida; Interview).*

*“I always looking for right traditional herbs to consume. I also find information about 'bentan' (sick again after getting better), and abstinence after childbirth. But this usually*

*been informed by the elderly in the family. My mother-in-law keeps on reminding me this (laugh)!” (Hida; Interview).*

In addition, it was reported that the mothers were concerned about postpartum sexual intercourse and family planning. Since they are first-time mothers, most of them highlighted that they need to take enough time to focus on their first child before planning on the next child. There is also an inadequacy of information about the advantages and disadvantages of using contraceptives.

*“I want to know about the relationship between husband and wife after childbirth... because it's a new phase, we really need to know it” (Abby; Interview).*

*“During my confinement days, my family members already nagging me to have no other children in future. Not until the baby is older. I also try to find out about family planning. Some of them there are many ways, pills, IUD, birth control, and implants” (Hida; Interview).*

The findings also revealed a pressing concern among the mothers regarding separation of their baby as they return to work. Amy, who is currently on unpaid leave and Abby, who is actively seeking a job, shared similar distress when they faced a dilemma regarding separation anxiety with their child. They have not been separated from their child since they were born, hence their anxiousness led them to needing to find out how to cope with this feeling.

*“I cannot be separated from my baby (sigh). He is still small; I have been taking care of him since he was a baby. When I have to let him stay with my mother-in-law, I can't and it is so anxious! They will take him away from me. Always questioning my capabilities to take care of my son” (Abby; Audio- diary).*

*“Later when I get to work again, how can I separate with my baby? Maybe my husband will take care of her during the day, but how can I be separated from her? What should I do? Because she's too close to me. I asked my younger siblings; they suggested I should quit my current job and take care of the baby” (Amy; Interview).*

## **(b) Health**

The mothers acknowledged that they have to take good care of themselves as it will help them in rebuilding their strength. Of particular concern were pre-existing health conditions. Zee is currently on medication due to Multiple Sclerosis illness, which revealed the need to know more about the effects of medication on breastfeeding. Meanwhile, Amy highlighted her fear of the deterioration of her current remaining vision in her left eye. Finally, there was also a need to find information on how to maintain good health as it will affect the routine of taking care of the baby, as well as on healthy weight loss.

*“How to take care of my health, since I take pills and medicine. I am worried since I breastfeeding my baby..worry (firm). I'm taking all these hormone medications. I want to know more about this” (Zee; Direct observation).*

*“I'm sick (Multiple Sclerosis) and not good enough to take care of my baby. I don't know, the motivation. It's gone. I met a friend with the same illness, everything was over, they could no longer walk” (Zee; Audio- diary).*

*“My vision is a little blurry and my child, she now is starting to crawl, and she’s started to pick things up but when she is so quiet ...I check on her. I was shocked to find her playing with this small object like a ball and luckily, she did not swallow it! I should maintain this vision” (Amy; Direct observation).*

Hida and Amy expressed their need for information on self-care including handling the physical changes due to childbirth.

*“I’ve been looking for information for physical changes, to reduce belly fat after pregnancy (laughs). I am looking for products that can help to restore the original look. I’m looking for this information” (Hida; Interview).*

*“My breasts were swollen since milk production was too much, I was worried, afraid of any pain because I didn't know anything about this. This new experience, so I looked up information on the Internet. I don’t want to ask a friend about this matter because it will be quite embarrassing (laughs)” (Amy; Audio- diary).*

**Theme 3: Family welfare**

The third sub-theme of information needed is family welfare. As their family grows, it appears that their life as well has changed day by day. All the mothers agreed that presently their daily concerns have evolved as their babies grow. Their life is no longer just about them but has shifted to the family as a whole. Evidently, the findings revealed that a specific focus was made on information pertaining to getting extra family income and proper accommodation, as illustrated in Table 5.

Table 5: Family Welfare Topics and Examples

Topics	Examples
<b>Extra family income</b>	Part-time job and small business venture.
<b>Accommodation</b>	Application for a public housing project, financial support, and precautions for a home emergency.

**(a) Extra family income**

The mothers indicated a high need to get information on increasing family income. Zee, Amy, and Fayra are currently working and have a steady income, while Abby and Hida are full-time housewives. Nevertheless, Zee, Abby, and Hida are planning to support their spouse by getting a part-time job and starting up a small business venture, hence could help gain extra income for their growing family.

*“I think about how to increase our family income...my husband’s job as a freelance masseur is based on commissions. If he gets a client, then he’ll get paid. So, we are thinking of doing small business. I asked my husband's cousin because he also venturing into it.” (Zee; Interview).*

*“So, I plan to do business in providing post-natal package for blind mothers. Because I'm good at massage, I want to teach people how to take care of their own kids because not all blind people can afford to take care of their own kids. I need to work because now that our family is developing, we cannot rely only on my husband’s commission as a masseur.” (Abby; Interview).*

*“My husband has to work more. Also, if I have the opportunity, I would love to work part-time near the MAB (Malaysian Association for the Blinds), help them to type a document” (Amy; Interview).*

### **(b) Housing and accommodation**

Both Abby and Hida reported seeking information regarding accommodation. Currently, Abby and her husband are renting a room together with other tenants, who are also visually impaired. The house is an old flat, with limited space, and the fact that they are living alongside other people somewhat has raised additional concerns, such as tidiness and safety of their baby. Due to this, Abby needs information about the application for a housing project. Hida on the other hand requires information about getting financial support to build up their own house in their hometown, as well as on safety precautions, particularly in the event of a home emergency.

*“I need more information about our home application at the public housing project. We have a child now. The house is in a mess! I am afraid my baby would pick and swallow anything that he found. If we want to know about our application then we need to call them. But nobody answered us. We need to go there DBKL. It is not easy for us to get there many times (sad)” (Abby; Audio- diary).*

*“I think we really need to know about safety exit during an emergency event. This is an old building, and I live on the highest floor, level 13. With only two elevators. My husband once was trapped in the elevator due to sudden blackout...need to know what to do if trapped in there” (Hida; Direct observation).*

### **Theme 4: Daily living activities**

The fourth sub-theme of information needed is on daily activities. The mothers revealed their information needs surrounding particular issues on mobility, real-time information on the distance of obstacles during mobility, and online banking, as illustrated in Table 6.

Table 6: Daily Living Activities Topics and Examples

Topics	Examples
Mobility	Navigation in unfamiliar routes and real-time information on obstacle distance.
Online banking	Ways to perform online banking.

#### **(a) Mobility**

Issues with navigation in unfamiliar destinations and real-time information on obstacle distance are discussed by the mothers. They also reported about the impediments encountered while navigating their surroundings and the categories of information that facilitate them in upholding independent mobility. They told their stories as follows:

*“No tactile pathways. It is a bit risky when we cannot see whether it is safe for us to walk there, fortunately, there are some people nearby the clinics who are concerned and offer help” (Abby; Direct observation).*

*“We walk on mobile, using a cane and tactile routes to the destination. My husband leads the way because I’m still not good with mobility...but on our way back home ... we needed help because we got lost” (Hida; Direct observation).*



### **(b) Online banking**

Only Fayra reported on the need to know about online banking. She expressed her concerns pertaining to safety and ways to perform it.

*"I know a bit about online banking, before this. It's been a long time. But I think about how to use it. I can't recall. And how to guarantee its safety? Once more...I really don't know how. My friends say it is easy to use online banking"* (Fayra; Interview);

### **Theme 5: Disability Rights**

The final sub-theme of information needed is the rights of people with disabilities. Zee and Hida revealed their experience pertaining to the need to know about the disability benefit in Malaysia. Hida is an acquired blind, with less than a decade of being visually impaired. Due to her lack of awareness about the basic rights of a person with disabilities, she almost paid for a medical fee during her check-ups at a government hospital. Apparently, the hospital's staff are also unaware of this exception and almost put it into a payment. Luckily her husband who is also totally blind came to the rescue and claimed about treatment charge exemption for disabled people.

*"So, I keep reminding myself that it is important to know all the important information about the rights of people with disability, that we can claim. My knowledge area about this matter is still limited"* (Hida; Interview).

Similarly reported by Zee, her negative encounters with public facilities have raised the need to have comprehensive information with regard to their rights.

*"Some government service centers, such as public health clinics, are still not OKU-friendly. Sometimes they are not attending to our rights, such as getting more information about housing applications or financial aid. I think I need to know more about this"* (Zee; Interview).

## **DISCUSSION**

### **Multifaced information needs of FTMWVI**

The analyses of the narratives unveiled that the FTMWVI participating in this study acquired knowledge and comprehension as they traversed through their initial year of motherhood. For a first-time mother, transitioning into a new journey of motherhood brings about a variety of unforeseen circumstances that require them to continually seek out new information, which is similar to findings by Richter et al. (2022). There is evidence of multifaceted information needs related to personal and role factors as illustrated in Table 7. Their need for information on housing, accommodation, finance and mobility stems from their continuous daily interaction with the environment that they live in. Many of these information needs are intertwined and compete for concurrent consideration. For example, the needs for baby care, such as breastfeeding, are frequently interconnected with the needs for mother care, such as the mother's pre-existing health conditions.

The results of this qualitative study indicate that within the first year of motherhood, the FTMWVI faced many emotional and psychological well-being conflicts. Their overwhelming love for the baby coupled with their impairment causes them to constantly worry and develop fear and anxiety over the safety of the baby. These stresses give rise to the need

for significant information to fill their knowledge and emotional gaps. The primary information needs mentioned were regarding providing care for the baby, including their well-being and physical growth, with a specific emphasis on feeding including breastfeeding, formula feeding, bottle feeding, and introduction to solid foods, which aligns with those reported in previous studies involving first-time mothers (Lebron et al., 2020; Panahi et al., 2020; Sink, 2009).

Table 7: Multifaceted Information Needs of FTMWVI

<b>Research Question: What are the information needs of first-time mothers with visual impairment in the first year of motherhood?</b>			
<b>Theme</b>	<b>Sub- theme</b>	<b>Influential Factor</b>	<b>Finding</b>
Divisions of information needs	Baby care	Personal, Role	Feeding, Well-being, Outing
	Mother care	Personal, Role	Post- partum, Health
	Family welfare	Role	Extra family income, Housing and accommodation
	Daily activities	Personal, Role, Environment	Mobility, Online banking
	Rights for people with disabilities	Personal, Environment	Disability benefits

These findings align well with Wilson's (1999) interpretations. In his model of information behaviour, he accentuated that the context of an individual's information need refers to their specific circumstances, personal history, and surrounding factors that prompt them to seek information. In this scenario, the person-in-context and context of information need pertains to the unique predicaments of a FTMWVI. The underlying motives, including cognitive needs that manifest as a curiosity among the mothers to acquire knowledge regarding breastfeeding practices, the psychological state arising from a first-time mother's perception of her visual impairment, the impediments faced, the quest for logical justifications to support prevailing knowledge, as well as the endeavour to validate personal values and beliefs influences the information needs expressed by these mothers. For instance, the mothers acknowledge a genuine desire for information on the topic of breastfeeding. During the initial phase of motherhood, they realise that breastfeeding does not come easily to them, hence prompting them to develop a strong need to seek information on the matter. They also recognise their status as a novice mother, thereby acknowledging their limited comprehension regarding breastfeeding and recognising the need for further information in this domain. Their impaired leads them to be more anxious and emotionally vulnerable to adapting to this new role which is directly affecting their baby's wellbeing. Their stresses and coping strategies clearly compels them to understand their own information needs and is expected to provide the activating mechanism for their seeking behavior.

**Information need: Baby-care**

It became evident that a collective comprehension regarding the benefits of breastfeeding was observed among all mothers and participants involved in this study. This indicates that breastfeeding has emerged as a significant subject of discourse within the realm of infant feeding. The necessary information about breastfeeding is typically comparable for both visually impaired mothers and those who are not, as the underlying principles governing breastfeeding remain consistent. Nevertheless, variations exist in the methods and approaches employed to tackle the distinctive difficulties confronted by visually impaired mothers (Iezzoni et al., 2017). In the current research, the mothers displayed a strong dedication to breastfeeding, as evidenced by their desire to gain extensive information on

techniques, use of tools as such breast pumps and storing breast milk effectively. However, in most instances, they expressed significant distress in struggling with baby positioning and self-care. The difficulties voiced by the mothers regarding breastfeeding have resulted in an early shift to relying on formula for feeding. This trend can be ascribed to numerous factors such as problems with milk production, difficulty in achieving a proper latch, and breast engorgement. These results aligned with those found in previous literature. Although visually impaired mothers encounter comparable difficulties of breastfeeding as sighted parents, still they possess distinct requirements, specific positions and aids (Cezario et al., 2017). Hence, mothers with visual impairment initially require assistance and advice to identify suitable positions and strategies for comfortably breastfeeding their baby and achieve their breastfeeding objectives (Warkentin et al., 2019).

The results of this study also provided insight into the issues concerning the mother's limited knowledge regarding breastfeeding education. Moreover, the current study reveals a noteworthy observation wherein a number of participants reported that the insufficiency of accessible resources and supportive measures poses a considerable obstacle to successful breastfeeding. They articulated over the absence of postnatal education specific for visually impaired mothers that indirectly contributed to feelings of stress, anxiety and fear, particularly during the early postpartum period. The present discovery aligns with evidence in the extensive body of scholarly research that investigates the breastfeeding encounters of women with disabilities, such as by Powell et al. (2018). The inquiry highlighted that the sample of women reported insubstantial provision of information concerning breastfeeding adaptations, as well as the possible impact of their disabilities on breastfeeding. The mothers often experience a sense of needing assistance and may have doubts about their capacity to fulfil their needs, leading them to seek support. There was substantial evidence regarding uncertainty issues (Kuhlthau, 2005), where the mothers were expressing a sense of being overwhelmed by their various needs and feeling unsure about how to start addressing them, as seen in comments like *"I don't even know where to start"*. Their limited knowledge about specialised breastfeeding techniques for visually impaired mothers could be compounded by this.

Furthermore, research from prior studies confirmed that blind mothers also face difficulties in carrying out tasks other than breastfeeding (Sonik et al., 2018; Wint et al., 2016). This aligns with the current research that uncovered the challenges mothers face about their baby's overall well-being, which includes addressing the baby's additional health concerns, welfare, outing for the first time with the baby, as well as early educational needs. Consequently, these mothers require assistance or social support, as well as the necessary skills to effectively discharge their parental obligations. The entire community must be equipped with the ability to furnish requisite aid to these mothers, thus enabling them to fulfil their maternal duties proficiently.

#### **Information need: Mother care**

The findings revealed that the mother's information needs within the first year after childbirth are also encircling postpartum care and health. During this self-recovery period, it is apparent that they need to be advised on various topics, including mental health. Women with disabilities are at a higher vulnerability of experiencing postpartum depression when compared to those without any disabilities (Shorey et al., 2018; Shrivastava et al., 2015). Several mothers in this study faced the challenge of self-management during the postpartum period and thus sought assistance in caring for

themselves after giving birth. This consistently leads to a state of unease and discomfort, ultimately resulting in restlessness and potential stress.

Some of the research's participants were concerned about the separation anxiety that arises between themselves and their infants. The emotional distress felt by the mothers when they and their infant are apart, and conversely, when the baby becomes familiar with the mother's presence and care. It has been observed that this circumstance arose as a consequence of external factors such as the necessity of returning to work. This observation aligns with Stern's (1995) theory on motherhood experiences, wherein he underscores the significance of primary relatedness. He described a concept of "motherhood constellation", where the existence of the new-born usually triggers the mother's attachment mechanism, occupying her thoughts and physical energy with the well-being and care of her child. It can be a challenging time of mental readjustment that may include altering the mother's perceived responsibility, sense of self, internal thought process, and emotional connections. This has led them to reconsider their financial stability. Information on opportunities for either a new job or a new business venture with their spouses becomes a priority.

### **Information need: Family welfare**

The identification of the mothers in the present study pertains not only to their status as recent mothers but also encompasses their financial standing, which places them within the realm of disadvantaged socio-economic conditions. This has been corroborated in prior investigations concerning individuals with disabilities (Opoku et al., 2019; Tefera et al., 2018). The majority of the mothers participating in the present study are individuals engaged in domestic duties within their households. The financial sustenance and support of their families are dependent on the exclusive contributions and earnings of their husbands. The respondents expressed a desire to support their partners in augmenting the financial resources of their households. As asserted by Pawlowska-Cyprysiak and Konarska (2013), women with disabilities encounter a "triple bind" phenomenon, wherein gender-based expectations and rewards run counter to instances of disability-based discrimination. Women with disabilities demonstrate relatively lower employment rates when compared to their counterparts, including men with and without disabilities, and women without disabilities.

Mothers in this study identified challenges in acquiring housing information. It is crucial to find a suitable home for the baby, as their presence requires a favourable living environment. However, some mothers have indicated challenges with the application process for a national housing initiative. Concerns have been raised about the insufficient information provided in the application. Another issue found is obtaining safety information during emergencies. Some housing projects they currently live in lacks proper facility management due to ageing infrastructure which suggests the need for immediate help. This perspective has been reiterated by other scholars. As a result, they still encounter significant challenges when it comes to obtaining employment, education, housing, and accessing public spaces and facilities (Islam, 2015).

### **Information need: Daily activities**

The mothers also need to juggle their daily tasks other than mothering responsibilities. In doing so, access to information is a prerequisite for making informed decisions. For instance, several discussed potential challenges arising from navigating unfamiliar territories, as well as the provision of real-time data on obstacle proximity. For individuals afflicted with visual impairment, even the simplest task of taking a step can be fraught with

complexity. This assertion holds particular significance in contemporary urban settings, wherein an increasing conglomeration of transportation modalities is observed. Individuals with visual impairments must rely solely on their other functional senses, such as hearing and touch, to navigate their surroundings. However, they must continue to depend on unequivocal indicators. The compliance with regulations concerning accessibility to roads and public spaces demonstrates a prudent and practical approach.

When it comes to issues regarding mobile banking, some critical aspects and technology are important in enabling blind people to utilise it. A considerable proportion of visually impaired individuals depend on assistive technology which is embedded in smartphones, to perform various routine activities. The proliferating usage of smartphone-based assistive technologies among visually impaired individuals can be attributed to their intrinsic features, including enhanced accessibility, usability, and augmented interactivity. However, concerning how individuals with visual impairments interact with smartphones, these endeavours aimed at inclusivity exhibit limitations. The findings of Wentz et al.'s (2017) investigation concurred that the utilisation of expert accessibility inspections in conjunction with automated techniques for evaluating Web sites and systems within the realm of banking/financial institutions and vendors is highly recommended. Ensuring accessibility and addressing the requirements of visually impaired individuals are also crucial factors for banks and financial institutions in the process of designing and revising their mobile banking applications. The incorporation of inclusive design principles and accessibility features in mobile banking has the potential to enhance its accessibility, thereby enabling visually impaired individuals to independently oversee their financial activities (Hamid et al., 2022).

### **Information need: Disability Rights**

The results obtained from this study indicate that the mothers exhibit a lack of awareness in recognising and understanding their entitlements as individuals with disabilities in a well-defined manner. The aforementioned outcome can be attributed to the inadequate comprehension of their entitlements among them. In Malaysia, a variety of government social welfare and social service policies protect the rights of the disabled. The National Welfare Policy of 1990 strives to establish a stable and secure society, self-sufficiency, equalisation of possibilities, promoting a spirit of mutual aid, and support for developing a caring culture. The National Social Policy 2003 emphasises the need to improve and ensure that people with disabilities have equal rights and full participation in Malaysian society (Islam, 2015). Advocacy, health, rehabilitation, education, employment, personal safety, social protection, support services, social development, human resources, participation, research and development, housing, children and women's disabilities, and accessibility are among the 15 key areas addressed by the policy.

## **RECOMMENDATION**

This study further enhances understanding of the importance of proactive interventions among various stakeholders. Government and non-governmental agencies such as welfare departments, blind people associations and libraries, could establish interventions for these new mothers with informational and knowledge upskilling support. Major information technology companies must take measures to incorporate accessibility elements into their products and services as a means to enhance the user experience for

individuals with disabilities. All these supports could help to reduce stress by giving them essential knowledge, guidance, and support for motherhood. Access to accurate information and accessible resources on infant care, breastfeeding, and postpartum recovery empowers new mothers to make informed decisions and manage expectations. Knowing about different motherhood phases can ease anxiety and uncertainty. Information connects new mothers to support systems like parenting classes, support groups, online forums, and helplines for advice and emotional support. Recognizing that help is available reduces feelings of isolation and being overwhelmed.

Healthcare professionals, specifically lactation consultants require specialised training in addressing breastfeeding challenges among visually impaired mothers. Such training is crucial for equipping these practitioners with the requisite knowledge and expertise to provide appropriate guidance and support to their patients. The provision of adequate training and guidance ought to encompass cognisance of adaptive strategies and requisite equipment as well as efficacious techniques that providers, specifically lactation consultants, can employ to optimise support for lactating mothers. Additionally, it is crucial to engage in a collaborative effort with women with disabilities to formulate guidelines and recommendations regarding breastfeeding practices. These guidelines should subsequently be incorporated into the existing maternal and child health policies and practices. Oliveira et al. (2017) assert that the implementation of assistive audio devices has demonstrated notable efficacy in enhancing breastfeeding outcomes among visually impaired mothers. Blind mothers may be able to obtain such a device through government initiatives intended to facilitate successful breastfeeding for mothers who have visual impairments.

The provision of information for disabled communities is vital to consult the relevant laws, regulations, and policies governing one's country or jurisdiction to gain a thorough understanding of the entitlements and provisions available to individuals with disabilities concerning disability benefits. Furthermore, disability advocacy groups and specialised organisations that concentrate on disability benefits can also provide supplementary aid and direction.

## **CONCLUSIONS**

This study evidences substantial interrelated information needs amongst first-time mothers with visual impairment, whilst also identifying various aspects of complexity that contribute to a greater understanding of their information experiences. The process of becoming a mother is a significant transformative phase for women, characterised by substantial alterations in their emotional, psychological and physical state that consequently necessitate a proactive pursuit of information. This study offers great significance in the initial phase of modelling information behaviours of a vulnerable group of society, focussing on the person-in-context. The development and recognition of the needs are strongly related to Wilson's conceptualization of the information behaviour model (1999), which will be used subsequently in examining the factors that influence information-seeking behaviours and the use of information. The study supports the notion of sense-making which associates with the perception of a need for information. The mothers in this study have revealed a goal-determined behaviour in recognizing their information needs and subsequent investigation on the action taken to seek information would be able to enhance the understanding of the information-seeking behaviour of this vulnerable group. The findings of this study could provide evidence that is beneficial to

inform policy and practice, and enhance the wellbeing of vulnerable groups (Munro et al., 2005).

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The authors declare no conflicts of interest regarding the publication of this paper.

## **AUTHORS CONTRIBUTION**

Conceptualization: [all authors], Methodology: [all authors], Formal analysis and investigation: [S.N.Maryam], Writing - original draft preparation: [S.N.Maryam]; Writing - review and editing: [K.Kiran]

## **REFERENCES**

- Adesina, O., Tunde, T., Oyedokun, A., Zainab, O., & Florence, O. (2022). Information behaviour of visually impaired users in the era of COVID-19 Pandemic in Lagos State, Nigeria. *Journal of Balkan Libraries Union*, 9(1), 14-18. <https://doi.org/10.16918/jblu.1080828>.
- Ahmed, M.R., & Naveed, M.A. (2021). Information accessibility for visually impaired students. *Pakistan Journal of Information Management and Libraries*, 22, 16-36. <http://journals.pu.edu.pk/>.
- Aizan Sofia, A., Azianura Hani, S., & Khairul Farhah, K. (2019). Barriers to marriage and motherhood: The experiences of disabled women in Malaysia. *The History of the Family*, 25(2), 246-264. <https://doi.org/10.1080/1081602X.2019.1663548>.
- Anthony, W. A. (1972). Societal rehabilitation: Changing society's attitudes toward the physically and mentally disabled. *Rehabilitation Psychology*, 19(3), 117-126. <https://doi.org/10.1037/h0090877>.
- Azzopardi-Lane, C., & Callus, A. M. (2016). Disability and parenting: The experiences of four women with disability. *Considering Disability Journal*, 1(3), 3-33.
- Barnes, C. (1992). Institutional discrimination against disabled people and the campaign for anti-discrimination legislation. *Critical Social Policy*, 12(34), 5-22.
- Bassoumah, B., & Mohammed, A.A. (2020). The socio-cultural challenges to maternal and neonatal care: The views of women with disabilities receiving maternity care in the Chereponi district of the Northern Ghana. *Scientific African*, 7. <https://doi.org/10.1016/j.sciaf.2019.e00258>.
- Belkin, N. J. (2005). Anomalous state of knowledge. In K. E. Fisher, S. Erdelez, & L. E. McKechnie (Eds.), *Theories of information behaviour* (pp. 44-48). American Society for Information Science and Technology by Information Today.

- Berget, G., & Macfarlane, A. (2020). What is known about the impact of impairments on information seeking and searching? *Journal of the Association for Information Science and Technology*, 71, 596-611.
- Beverley, C. A., Bath, P. A., & Barber, R. (2007). Can two established information models explain the information behaviors of visually impaired people seeking health and social care information? *Journal of Documentation*, 63(1), 9-32.
- Beverley, C. A., Bath, P. A., & Booth, A. (2004). Health information needs of visually impaired people: A systematic review of the literature. *Health & Social Care in the Community*, 12(1), 1-24. <https://doi.org/10.1111/j.1365-2524.2004.00460.x>
- Beverley, C.A., Bath, P.A. and Barber, R. (2011) Health and social care information for visually-impaired people. *Aslib Proceedings; New Information Perspectives*, 63 (2-3), 256 - 274. <http://dx.doi.org/10.1108/00012531111135691>.
- Bodaghi, N.B., Cheong, L.S., & Ngah, Z.A. (2019). Transition to campus life: The perceptions of visually impaired students towards librarians' communication skills. *LIBER Quarterly: The Journal of the Association of European Research Libraries*, 29(1),1-24.
- Bogdan, R., & Taylor, S. J. (1989). Relationships with severely disabled people: The social construction of humanness. *Social Problems*, 36(2), 135-148.
- Bordens, K., & Abbott, B.B. (2020). *Research designs and methods: A process approach* (11th ed.). McGraw Hill.
- Case, D. O., & Given, O.L. (2016). What's the use? Measuring the frequency of studies of information outcomes. *Journal of the Association for Information Science & Technology*, 67(3), 649-661.
- Cezario, K. G., Oliveira, P. M. P. D, Sousa, A. A. S., Carvalho, Q. C. M., Pennafort, V. P. D. S., & Santos, L. A. P. F. D. (2017). Blind parents and nutrition of children: Experiences and care. *Revista Da Rede de Enfermagem Do Nordeste*, 17(6), 850-857. <https://doi.org/10.15253/2175-6783.2016000600017>.
- Commission for Healthcare Audit and Inspection. (2008). *Towards better births: A review of maternity services in England*. Healthcare Commission. [http://image.guardian.co.uk/sys-files/Society/documents/2008/07/10/Towards\\_better\\_births.pdf](http://image.guardian.co.uk/sys-files/Society/documents/2008/07/10/Towards_better_births.pdf)
- Darvill, R., Skirton, H., & Farrand, P. (2008, July). Psychological factors that impact on women's experiences of first-time motherhood: A qualitative study of the transition. *Midwifery*, 26(3), 357-366.
- Davies, J. E. (2007). An overview of international research into the library and information needs of visually impaired people. *Library Trends*, 55(4), 785-795.
- Demo, D.H., & Cox, M.J. (2000). Families with young children: A review of research in the 1990s. *Journal of Marriage and the Family*, 62 (4), 876-896.
- Department of Social Welfare. (2024). *Statistik Pendaftaran OKU mengikut negeri dan kategori sehingga 31 Januari 2023*. Retrieved March 16, 2024, from <http://www.jkm.gov.my/jkm/uploads/files/pdf/Buku%20JKM%202014.pdf>.
- Frederick, A. (2015). Between stigma and mother-blame: Blind mothers' experiences in USA hospital postnatal care. *Sociology of Health and Illness*, 37(8), 1127-1141.
- Frederick, A. (2014). Mothering while disabled. *Contexts*,13(4), 30-35. <https://doi.org/10.1177/1536504214558214>.
- Hamid, K., Iqbal, M. W., Muhammad, H. A. B., Fuzail, Z., Ghafoor, Z. T., & Ahmad, S. (2022). Usability evaluation of mobile banking applications in digital business as emerging economy. *International Journal of Computer Science and Network Security*, 22(1), 250-260.
- Horner, J.W, Darney, B.G, Kulkarni, R. S, Quigley, B., & Caughey, A. B. (2016). Pregnancy among US women: Differences by presence, type, and complexity of disability.



- American Journal of Obstetrics and Gynecology*, 214(4), 529e1-529e9.  
<https://doi.org/10.1016/j.ajog.2015.10.929>.
- Islam, M. R. (2015). Rights of the People with disabilities and social exclusion in Malaysia. *International Journal of Social Science and Humanity*, 5(2),171–177.  
<https://doi.org/10.7763/ijssh.2015.v5.447>.
- Iezzoni, L.I., Wint A.J., Smeltzer S.C., & Ecker, J.L. (2017). Recommendations about pregnancy from women with mobility disability to their peers. *Women's Health Issues*, 27(1), 75-82.
- Kazuye Kimura, A. (2018). Defining, evaluating, and achieving accessible library resources: A review of theories and methods. *Reference Services Review*, 46(3), 425–438.  
<https://doi.org/10.1108/RSR-03-2018-0040>.
- Kitchin, R. (1998). 'Out of Place', 'Knowing One's Place': Space, power and the exclusion of disabled people. *Disability & Society*, 13(3), 343-356.  
<https://doi.org/10.1080/09687599826678>.
- Khowaja, S., & Fatima, N. (2023). Information seeking behaviour of visually impaired university students in India. *Journal of Library and Information Technology*, 43(3),164 – 168.
- Krishnamoorthi, C., Shariff, A.A.M., Yahya, M.A., Hassan, M.S., & Kamaruddin, H. (2024). Protecting the well-being of the people with disabilities in achieving the nation's Sustainable Development Goals. In *IOP Conference Series: Earth and Environmental Science*, Vol. 1304, No. 1:012006.
- Kuhlthau, C. C. (2005). *Kuhlthau's information search process*. In K. E. Fisher, S. Erdelez and L. E. F. McKechnie (Eds.), *Theories of Information Behaviour*: 230-234. Information Today, Inc.
- Laski, F. J. (1975). Legal advocacy, positive factor in rights for disabled people. *American Rehabilitation*, 1(5), 12-17.
- Law, K. H., Jackson, B., Guelfi, K., Nguyen, T., & Dimmock, J. A. (2018). Understanding and alleviating maternal postpartum distress: Perspectives from first-time mothers in Australia. *Social Science & Medicine*, 204, 59-66.  
<https://doi.org/10.1016/j.socscimed.2018.03.022>.
- Lawler D., Lalor J., & Begley C. (2013). Access to maternity services for women with a physical disability: a systematic review of literature. *International Journal of Childbirth*, 3(4), 203-217.
- Leahy-Warren, P., McCarthy, G., & Corcoran, P. (2012). First-time mothers: Social support, maternal parental self-efficacy and postnatal depression. *Journal of Clinical Nursing*, 21(3–4), 388–397.
- Lebron, C. N., St. George, S. M., Eckembrecher, D. G., & Alvarez, L. M. (2020). "Am I doing this wrong?" Breastfeeding mothers' use of an online forum. *Maternal and Child Nutrition*, 16(1), 1–11. <https://doi.org/10.1111/mcn.12890>.
- Lorenzo-Blanco, E. I., Meca, A., Piña-Watson, B., Zamboanga, B. L., Szapocznik, J., Cano, M. Á., & Soto, D. W. (2019). Longitudinal trajectories of family functioning among recent immigrant adolescents and parents: Links with adolescent and parent cultural stress, emotional well-being, and behavioural health. *Child Development*, 90(2), 506-523.
- Loudon, K., Buchanan, S. and Ruthven, I. (2016). The everyday life information-seeking behaviours of first-time mothers. *Journal of Documentation*, Vol.72, no.1: 24-46.
- Madge, C., & O'connor, H. (2006). Parenting gone wired: Empowerment of new mothers on the internet?" *Social and Cultural Geography*, 7(2), 199-220.  
<https://doi.org/10.1080/14649360600600528>.
- Mahony, C., Heavin, C., & Sammon, D. (2022). Identifying design guidelines for online information resources: A study of expectant and new mothers. *Information Technology*

- and People*, 35(8), 23-51. <https://doi.org/10.1108/ITP-04-2020-0180>.
- McKenzie, P. (2003). A model of information practices in accounts of everyday-life information seeking. *Journal of Documentation*, 59(1),19-40.
- Moore, N. (2002). A model of social information need. *Journal of Information Science*, 28(4), 297-303.
- Moran, K. M., Turiano, N. A., & Gentzler, A. L. (2018). Parental warm during childhood coping and well-being in adulthood. *Journal of Family Psychology*, 32(5),610-621. <https://doi.org/10.1037/fam0000401>.
- Mulauzi, F., Delphine, C., Ivy, A., Emmanuel, C., Charles, M., & Dexter, H. (2020). Health information literacy, information needs and information seeking behaviors among mothers with children under the age of five: A case study of Chilenje Level One Hospital in Lusaka, Zambia. *International Journal of Research Publication and Reviews*, 1(4), 43-59.
- Munin, N., & Yu, H. (2018). Adaptive equipment technology and services for supporting disabled users: A case study in the Central Library, University of Malaya. *International Journal of Academic Research in Business and Social Sciences*, 7(12), 445-460. <https://doi.org/10.6007/IJARBS/v7-i12/3626>.
- Munro, E., Holmes, L., & Ward, H. (2005). Researching vulnerable groups: Ethical issues and the effective conduct of research in local authorities. *British Journal of Social Work*, 35(7), 1023-1024.
- Nasir, M.N.A., & Hussain, R.B.M. (2021). The roles of organizations for blind persons in research-oriented activities: a research proposal. *International Journal for Studies on Children, Women, Elderly and Disabled*, 13. [https://www.ijcwed.com/wp-content/uploads/2021/09/IJCWED13\\_204.pdf](https://www.ijcwed.com/wp-content/uploads/2021/09/IJCWED13_204.pdf).
- Nelson, A.M. (2003). Transition to motherhood. *Journal of Obstetric, Gynecologic and Neonatal Nursin*, 32(4), 465–467.
- Okiki, O.C., & Okonj, P.E. (2019). Access to information resource and opportunities for social inclusiveness: perceptions of visually impaired students of higher education institutions in Lagos, Nigeria. *Gateway Information Journal*, 20(1). Retrieved from <https://www.gatewayinfojournal.org/index.php/gij/article/view/23>
- Oliveira, P. M. P. D., Pagliuca, L. M. F., Cezario, K. G., Almeida, P. C. D., & Beserra, G. D. L. (2017). Breastfeeding: validation of assistive audio technology for the visually impaired individual. *Acta Paulista de Enfermagem*, 30(2), 122-128.
- Oliver, M. (1990). *The politics of disablement: A sociological approach*. St. Martin's Press.
- Opoku, M.P., Swabey, K., Pullen, D., & Dowden,T. (2019). Poverty alleviation among persons with disabilities via United Nations' sustainable development goals in Ghana: *Voices of stakeholders with disabilities. Sustain Development*, 27(1), 175–82.
- Panahi, S., Mahmoudvand, F., & Sedghi, S. (2020). Health Information-Seeking Behaviour of Iranian first-time Mothers and First-Time Pregnant Women in Northwest Health Centers of Tehran. *Journal of Community Health Research*, 9(4),222–232. <https://doi.org/10.18502/jchr.v9i4.4975>
- Parkes, J., Caravale, B., Marcelli, M., Franco, F., & Colver, A. (2011). Parenting stress and children with cerebral palsy: a European cross-sectional study. *Developmental Medicine And Child Neurology*, 53(9), 815-821.
- Pawlowska-Cyprysiak K., & Konarska, M. (2013). Working Life of Women with Disabilities - A Review. *International Journal of Occupational Safety and Ergonomics*, 19(2), 409–414.
- Pebrianti, H. (2023). Access to information resources by students with disabilities: Case study Dar al-Hikmah IIUM Library. *Inkunabula: Journal of Library Science and Islamic Information*, 2(2), 59-70.

- Persons with Disabilities Acts. (2008). <http://www.agc.gov.my/agcportal/uploads/files/Publications/LOM/MY/Akta%20685%20%20Akta%20Orang%20Kurang%20Upaya%202008.pdf>.
- Powell, R.M., Mitra, M., & Smeltzer, S.C. (2018). Breastfeeding among women with physical disabilities in the United States. *Journal of Human Lactation*, 34(2), 253-261. doi:10.1177/0890334417739836
- Richter, N., Bondü, R., Spiess, C. K., Wagner, G. G., & Trommsdorff, G. (2018). Relation among maternal life satisfaction, shared activities, and child well-being. *Frontiers Psychology*, 9, 739. <https://doi.org/10.3389/fpsyg.2018.00739>.
- Richter, N., Bondü, R., & Trommsdorff, G. (2022). Linking transition to motherhood to parenting, children's emotion regulation, and life satisfaction: A longitudinal study. *Journal of Family Psychology*, 36(2), 291-300. <https://doi.org/10.1037/fam0000868>.
- Robson, A., & Robinson, L. (2013). Building of models of information behaviour: linking information seeking and communication. *Journal of Documentation*, 69(2), 69-193.
- Roller, M.R. and Lavrakas, P.J. 2015. *Applied Qualitative Research Design: A Total Quality Framework Approach*. Guilford Press.
- Ruthven, I., Buchanan, S., & Jardine, C. (2018a). Relationships, environment, health and development: the information needs expressed online by young first-time mothers. *Journal of the Association for Information Science and Technology*, 69(8), 985-995.
- Ruthven, I., Buchanan, S. and Jardine, C. (2018b). Isolated, overwhelmed, and worried: young first-time mothers asking for information and support online, *Journal of the Association for Information Science and Technology*, 69(9), 1073-1083.
- Saldana, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). SAGE.
- Shahbazzadegan, S., Behbodi Moghadam, Z., Ghiyasvandian, S., Shamshiri, M., Mozaffari, N., & Mohammadi, M. (2018). Blind mothers' experiences of marginalization: a hermeneutic phenomenological qualitative study. *Journal of Qualitative Research in Health Sciences*, 7(1), 23-34.
- Shandra, C. L., Hogan, D. P., & Short, S. E. (2014). Planning for motherhood: Fertility attitudes, desires and intentions among women with disabilities. *Perspectives on Sexual and Reproductive Health*, 46(4), 203–210.
- Shorey, S., Chee, C. Y. I., Ng, E. D., Chan, Y. H., San Tam, W. W., & Chong, Y. S. (2018). Prevalence and incidence of postpartum depression among healthy mothers: A systematic review and meta-analysis. *Journal of Psychiatric Research*, 104, 235–248. <https://doi.org/10.1016/j.jpsychires.2018.08.001>.
- Shrivastava, S. R., Shrivastava, P. S., & Ramasamy, J. (2015). Antenatal and postnatal depression: A public health perspective. *Journal of Neurosciences in Rural Practice*, 6(1), 116–119.
- Sink, K. K. (2009). Seeking newborn information as a resource for maternal support. *Journal of Perinatal Education*, 18(3), 30–38. <https://doi.org/10.1624/105812409x461207>.
- Siti Mariam M., Nur Qurratu Ain Zahra M.Z., & Muzaitul Akma M.K.B. (2022). Knowledge, attitude and practice of exclusive breastfeeding among primipara at Baby Friendly Hospital (BFHI). *Jurnal Islam dan Masyarakat Kontemporer*, 23(1), 104-115.
- Sonik, R. A., Parish, S. L., Mitra, M., & Nicholson, J. (2018). Parents with and without disabilities: Demographics, material hardship, and program participation. *Journal of Intellectual & Developmental Disabilities*, 88(4), 1–5.
- Statistica.com (2021). *Number of people with blindness worldwide in 2020, by age and gender*. <https://www.statista.com/statistics/1237876/number-blindness-by-age-gender/#statisticContainer>.

- Stern, D. N. (1995). *The motherhood constellation: A unified view of parent–infant psychotherapy*. Basic Books.
- Subekti, A. (2019). Analisis kebutuhan dan pencarian informasi ibu dengan kelahiran anak pertama periode postpartum: Studi kasus Whatsapp group Zona Mama. *Baca: Jurnal Dokumentasi Dan Informasi*, 40(2), 159-169. <https://doi.org/10.14203/j.baca.v40i2.493>.
- Sung, H. Y., & Parboteeah, P. (2017). Diversity-related research reported in high-impact library and information science journal literature: A content analysis. *Library & Information Science Research*, 39(2), 77-84.
- Taylor, R. S. (1968). Question-negotiation and information seeking in libraries. *College & Research Libraries*, 29(3), 178-194.
- Tefera, B., Van Engen, M., Schippers, A., Eide, A., Kersten, A., & Van der Klink, J. (2018). Education, work, and motherhood in low- and middle-income countries: A review of equality challenges and opportunities for women with disabilities. *Social Inclusion*, 6(1), 82-93. <https://doi.org/10.17645/si.v6i1.1206>.
- Wang, S., & Yu, J. (2017). Everyday information behaviour of visually impaired in China. *Information Research*, 22(1). <https://files.eric.ed.gov/fulltext/EJ1138643.pdf>.
- Warkentin, T., Hermann, S., Watson, J., & Berndt, A. (2019). Breastfeeding strategies used by women with physical disabilities. *American Journal of Obstetrics & Gynecology*, 220(1), S209. <https://doi.org/10.1016/j.ajog.2018.11.318>.
- Weinberg, N., & Williams, J. (1978). How the physically disabled perceive their disabilities. *Journal of Rehabilitation*, 44(3), 31-33.
- Wentz, B., Pham, D., & Tressler, K. (2017). Exploring the accessibility of banking and finance systems for blind users. *First Monday*, 22(3). <https://doi.org/10.5210/fm.v22i3.7036>.
- Wilson, T.D. (1991). On user studies and information needs. *Journal of Documentation*, 37(1), 3-15.
- Wilson, T. D. (1997). Information behaviour: an interdisciplinary perspective. *Information Processing and Management*, 33(4), 551-572.
- Wilson, T. D. (1999). Models of information behaviour research. *Journal of Documentation*, 55(3), 249-270.
- Wint, A. J., Smith D.L., & Iezzoni L., I. (2016). Mothers with disability: Child care adaptations at home. *American Journal of Occupational Therapy*, 70(6), 7006220060p1-7006220060p7.
- World Health Organization. (2011, January 1). *Summary world report on disability*. [http://apps.who.int/iris/bitstream/10665/70670/1/WHO\\_NMH\\_VIP\\_11.01\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/70670/1/WHO_NMH_VIP_11.01_eng.pdf).
- Xie, I., Wang, S., & Saba, M. (2021). Studies on blind and visually impaired users in LIS literature: A review of research methods. *Library & Information Science Research*, 43(3). <https://doi.org/10.1016/j.lisr.2021.101109>.
- Xin, W. (2022). Lack of alternative: Chinese first-time mothers' construction of social support network of online secondary groups. *Digital Health*, 8. <https://doi.org/10.1177/20552076221129062>.