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Peer-reviewed author version

MARTENS, Carmen; Delcourt, Cecile & PETERMANS, Ann (2022) Maternity Healthscapes: Conceptualization and Index Development. In: HERD, 15 (4) , p 183-203.

DOI: 10.1177/19375867221117248

Handle: <http://hdl.handle.net/1942/38104>

Maternity Healthscapes: Conceptualization and Index Development

Carmen Martens^{a,b*}, Ph.D. candidate

Cécile Delcourt^b, Professor

and Ann Petermans^a, Assistant Professor

^aFaculty of Architecture and Arts, Hasselt University, Hasselt, Belgium; ^bDepartment of Marketing, HEC Liège, Management School of the University of Liège, Liège, Belgium

**cecile.delcourt@uliege.be; 14, rue Louvrex, 4000 Liège, Belgium; +32 4 232 73 06*

Acknowledgement of funding: Bijzonder Onderzoeksfonds UHasselt/ULiège

Disclosure of any conflicts of interest: The Authors declare that there is no conflict of interest

Keywords: healthscape; index development; maternity; patient experience; servicescape

Introduction

In the past two decades, the patient experience has moved to the forefront of healthcare research (Frampton, 2012). Nowadays, hospitals are more and more focusing on design to improve patient experience~~Nowadays, hospitals focus more on designing their facilities~~, even including hotel-like amenities, ~~to improve patient experience~~ (Suess & Mody, 2017). The quality of the healthscape (i.e., design of physical environments in healthcare facilities) can affect patient medical outcomes and the quality of care (e.g., promote quicker recovery, reduce stress) (Berry & Parish, 2008; Ulrich et al., 2010; Ulrich et al., 2020). Moreover, improved patient experiences in aesthetically pleasing, functional healthscapes contribute to heightened higher patient satisfaction ratings and higher reimbursements to hospitals (Suess & Mody, 2017).

There is little research investigating the concept of ~~However, little research has examined the concept of~~ healthscapes within maternity wards, even though they deserve specific attention for several reasons (for an exception, see for instance Foureur et al., 2010; Foureur et al., 2011). First, maternity healthscapes (MHSs) play a key role in shaping the childbirth experiences of mothers and families (Nilsson et al., 2020; Setola et al., 2019). Positive birth experiences offer long-lasting benefits, including improved self-esteem and empowerment that sustain patients' maternal roles (Aune et al., 2015). Negative birth experiences can cause lasting psychological impact~~impose troubling, lasting psychological impacts~~, including enhanced risk of post-partum depression, post-traumatic stress disorder, fear of childbirth, difficulty breastfeeding, and problematic parental relationships (e.g., Bell & Andersson, 2016). Second, patients from maternity services have features that differentiate them from patients from other departments. In general, expectant mothers have ample time between their first knowledge of (possible) need for hospital services and their actual provision. Contrary to other patients, these expectant mothers are usually

~~not acutely ill, so they often have plenty of time to search for hospitals that meet their needs. Because of the time that generally passes between their first knowledge of the (possible) need for hospital services and their actual provision, expectant mothers — who are usually not sick contrary to other patients — have more time than most patients to search for hospitals that meet their needs.~~

Third, maternity services are evolving at a rapid pace. There is an international trend of providing fewer but more comprehensive maternity services. For example, in Western countries, length of stay is shortening. Between 2008 and 2017, the average length of stay in Belgian maternities decreased by one day (Lefevre et al., 2020). Today, hospitals are increasingly reflecting on reducing the number of visitors and limiting visiting hours as restrictions regarding these issues was experienced positive by both mothers and medical staff during COVID-19 lockdowns. Fourth, MHSs are crucial to the wealth and reputation of hospitals (Van de Voorde et al., 2017). **For most first-time mothers, childbirth is their first (long) encounter with a hospital environment. Thus, creating favorable impressions among mothers and their family is key to ensure that families will consider the same hospital services in case of health issues. In general, all those specificities in MHSs strengthen the need to design efficient maternity facilities.**

Accordingly, we examine the ~~concept of the~~ MHS construct together with its dimensionality (i.e. aspects that are constitutive of the complex concept) to achieve two research objectives: (1) conceptualization of MHS and (2) ~~development of~~ an index uncovering the various key features of MHS for rigorously assessing MHS quality. We combine a multidisciplinary literature review with 39 ~~in-depth~~ interviews with various stakeholders: mothers, midwives, heads of midwives, and chief executives. ~~Our~~ This literature review spans multiple disciplines, including social sciences, architectural design, environmental psychology, healthcare, and service management.

Towards a Conceptualization of Maternity Healthscapes (MHSs)

The healthscape is likely to be crucial in MHS as mothers (and family) (1) are ~~not sick~~generally not acutely ill, (2) are generally younger, (3) stay for several days at the hospital, (4) experience ~~mixed~~ strong emotions—such as anxiety, stress, and joy—as they are experiencing a life-changing event, and (5) may experience intense pain and /or complications health issues. In this context, the quality of the MHS can smooth the intense nature of labor and delivery for patients~~critical experience of patients~~ (Aburas et al., 2017).

Noting that the MHS concept and its dimensionality lacks a clear conceptualization, we undertake a multidisciplinary literature review of existing written conceptualizations of healthscape~~MHSs~~. We selected two databases: Google Scholar and Scopus. We searched for ‘healthscape’ articles in the general healthcare context, published from 1995 to 2021 and containing the words ‘healthscape’ or ‘healthcare servicescape’ in their titles, abstracts, or keywords. We selected the year 1995 as our starting point, because it marked publication of an influential article on healthscape conceptualization, by Hutton and Richardson (1995). We confined our search to English-language articles for which full text was available. In addition, the authors added the key article of Ulrich et al. (2010) as it significantly added to the concerned literature stream. Although this article used a different vocabulary (i.e. ‘built environment’ instead of ‘healthscape’), the framework developed by those authors provided a strong base for continued research. We identified 20 articles that met our search criteria.

Two tables present a subset of relevant articles of the total list of 20 articles. The subset was selected to give an overview of multidisciplinary articles, that gave the most elaborated and in-depth insights, and redundancy of previous authors work was discharged. Table 1 presents an overview of 12 key articles that include conceptualizations and/or consequences (i.e., impact of

the healthscape on its users) of the healthscape concept while Table 2 presents a summary of 13 pertinent articles that discuss healthscape dimensions.

[Insert Tables 1 and 2 about here].

Healthscape: Overview of Existing Conceptualizations

Hutton and Richardson (1995) recognize that, despite the paramount and permanent importance of physical facilities, little research addresses the role of healthcare facilities and physical environments in determining the patient experience. They propose the term ‘healthscape’ (see Table 1) and define it by identifying components of atmospherics (Kotler, 1973) and servicescapes (Bitner, 1992) associated with healthcare. Then they assess the strengths and predictive abilities of these features for patient satisfaction, quality assessments, intentions to return, and willingness to recommend healthcare providers to others. As Table 1 also shows, some studies (e.g., Han et al., 2020) adopt Hutton and Richardson (1995) conceptualization, but others propose their own context-specific conceptualizations (e.g. geriatric care; Chun & Nam, 2019). Still others do not provide specific conceptualizations but focus on the impact of healthscapes on patient and employee variables, such as patient and employee attitudes (e.g., satisfaction, quality) and behaviors (e.g., recommend). This literature review highlights not only the influential role of the healthscape in shaping perceptions, preferences, attitudes, and behaviors but also the lack of conceptualization of the term, which strongly indicates the need to define it. Based on the literature review, we conceptualize the healthscape as the design of the healthcare built environment, including the architecture of a facility, its implementation in its surroundings, and all tangible elements. Next, we examine the dimensions that are constitutive of healthscapes to, ultimately provide, a comprehensive conceptualization of maternity healthscapes.

Healthscape: Overview of Identified Dimensions

Table 2 presents an overview of articles that focus on healthscape conceptualizations and their dimensions. The dimensions identified in these articles build on the servicescape framework proposed by Bitner (1992) and the framework for the domain of evidence-based design by Ulrich et al. (2010), forming an overview of the key dimensions of healthscapes. This comprehensive overview provides a base for meeting our second objective (i.e., development of an MHS index to uncover the various key features of MHS for rigorously assessing MHS quality).

We identified 7 main dimensions and 47 subdimensions (see Table 2). Some articles take a general approach, focusing on main dimensions (e.g., Han et al., 2020); others examine subdimensions in detail (e.g., Suess & Mody, 2017). Accordingly, our review highlights the diversity of healthscape dimensions; many authors mention ambient factors (13 of 13), interior design (12), and functionality (12), and less authors mention exterior design (7), social (4), and technology dimensions (4).

Maternity Healthscape (MHS): Overview of Existing Studies

The healthscape dimensions/subdimensions in Table 2 pertain to hospital settings in general. Although this comprehensive overview is insightful, some dimensions might not be applicable to specific hospital departments, such as maternity wards—considering that the journey of soon-to-be mothers is unique and includes particular and critical moments (e.g., Chun & Nam, 2019; Foureur et al., 2010).

Therefore, to understand the impact of the healthscape on users in a maternity context (i.e., mothers, supporters, medical staff), we conducted additional searches for the following words in article titles, abstracts, and keywords: ‘birth environment’ OR ‘birthing facilit*’ OR ‘birth space’ OR ‘birth design’ OR ‘birth architecture’ OR ‘maternity environment’ OR ‘maternity space’ OR

Commented [A1]: when doing a search in a database you can use the "**", which means that different options are possible
e.g., facilitY or facilitES

'maternity design' OR 'maternity architecture' OR 'midwifery space' OR 'midwifery design' OR 'midwifery architecture' OR 'obstetric environment' AND 'physical'. We confined our search to English-language articles for which full text was available.

We identified 78 articles that met the search criteria but excluded 66 articles because they did not explore: (1) user goals/needs that the MHS must accommodate, (2) the impact of the MHS on users' medical or health related outcomes, or (3) the impact of the MHS on user experience. These issues were all key to our research purposes. In addition, the ~~authors added the~~ key article of Foureur et al. (2011) was included as it significantly added to the concerned literature stream (i.e. testing of the Birth Unit Design Spatial Evaluation Tool). Although this article used a different vocabulary (i.e. 'birth unit'), the study provided a strong base for continued research.

Next, to deepen our understanding of the MHS construct, we extended this multidisciplinary literature review by searching for articles that included the following words in their titles, abstract, or keywords: 'built environment' OR 'servicescape' OR 'healthscape' OR 'physical environment' OR 'spatial design' AND 'maternity'. The same confinements were used here. In this case, we identified 38 articles that met the search criteria but excluded 19 that did not meet the previously identified exploration objectives. Next, we removed 5 duplicate entries (see Denyer & Tranfield, 2009). Table 3 summarizes the 27 articles ~~we identified~~ that examine user goals and needs that MHS can facilitate.

[Insert Table 3 about here].

Table 3 summarizes the goals and needs discussed in the 27 analyzed articles; it distinguishes the healthscapes' impacts on (1) mothers' experiences and behaviors, (2) supporters' experiences and behaviors, (3) medical interventions, and (4) staff practices. It also categorizes goals and needsed according to the type of maternity ward. By understanding these user goals and

needs, we can predict how MHS might evolve, according to its users (~~i.e., mothers, supporters, medical staff~~).

Appendix 1 provides more detailed information about the 27 articles and reveals that studies differ in their adopted perspectives (i.e., patient, supporters¹, medical staff, administrative staff, researcher), geographical context (i.e. European/non-European), and type of maternity ward analyzed (i.e., hospital maternity care unit [HMCU], hospital delivery room [HDR], birth center [BC], home birth [HB], alternative [A]). Out of the total of 27 articles, 22 articles adopt a single perspective: 19 from the patients' perspective, 2 from midwives' perspective, and 1 from supporters' perspective. Only 5 articles adopt a multi-stakeholder perspective. In addition, 18 articles report research conducted in non-European countries, in which social security systems can differ from those of European countries. Regarding the type of maternity ward, 14 articles focus on overall maternity departments, 5 focus solely on delivery rooms, 3 focus solely on birth centers, 3 combine different settings, and 2 analyze alternative birth settings.

This variety of approaches and methods suggests the need for a more in-depth, ~~comprehensive~~ understanding of the MHS. Previous studies have neglected a multi-stakeholder perspective (e.g., excluding patient perspective; Foureur et al., 2010), adopted a rather small sample size, were not focused on European countries, or only partially addressed the MHS (e.g., only focus on the delivery room; Nilsson et al., 2020). Our study (1) combines both theoretical and empirical data to conceptualize MHS and develop an index ~~for rigorously assessing MHS quality~~, (2) to give a comprehensive overview of the MHS ~~during the journey of navigated by~~ soon-to-be mothers. Hereby, a diversity of (3) hospitals (i.e. old and new) and (4) stakeholder

¹ The role of a support person—such as a spouse, family members, or friends—is to help a loved one heal through support, encouragement, and communication during the loved one's stay.

perspectives (i.e. mothers, midwives, heads of midwives, and chief executives) is adopted to increase the sample size. In doing so, two different communities were considered (i.e. the Dutch and the French speaking part of Belgium).

Methodology

In-Depth Interviews Overview of the samples

Appendix 1 demonstrates that most research has focused on exploring only one stakeholder perspective and was conducted in non-European countries. For our research purposes however, there is much (more) value in exploring multi-stakeholder perspectives, as input from different stakeholders impacts ~~on~~ experiences in MHS. ~~As a consequence~~ For this reason, a multi-stakeholder perspective was applied by conducting qualitative, ~~in-depth~~ interviews with three different samples collected in a Belgian ~~context~~ population. Sample 1 includes 15 mothers who delivered their babies at a hospital; Sample 2 includes 16 midwives; and Sample 3 includes 8 senior managers (i.e., 6 heads of midwives and 2 chief executives) working in 12 different hospitals.

Sample Characteristics

In developing our three samples, we sought to maximize diversity among the respondents (see Appendix 2). Mothers (Sample 1) differ in their demographic characteristics, medical states, choices of hospital, and degree of hospital familiarity. The midwives (Sample 2), heads of midwives, and chief executives (Sample 3) vary in their demographic and professional characteristics. We ceased the sampling process at theoretical saturation for each sample, when the information gathered became redundant and no innovative information appeared.

The first author conducted the interviews for Sample 1 and Sample 3, using the critical incident technique (CIT) to reflect the exploratory nature of the study (Gremler, 2004). This

technique collects data from the respondent's perspective, in the respondent's own words (Gremler, 2004), providing a rich source of data. Ten undergraduate students enrolled in a human-sciences course at a public university in Belgium conducted the interviews for Sample 2 (midwives); the students participated as data collectors as part of a class assignment. This technique has been used successfully in a variety of studies, especially in CIT research (Gremler, 2004). Prior to data collection, students received training in interviewing techniques, particularly the CIT method.

Interview Guide

The interview guides for Samples 1 and 2 were similar; they consisted of open questions related to the influence of the design of the maternity healthcare built environment, including the architecture of the facility, its implementation in its surroundings, and all tangible elements experienced by maternity users—along with prompts and follow-ups ([see Online Appendix 3](#)). Interviews began with general questions to establish rapport while putting the respondents at ease. The semi-structured guide contained three main parts. The first part asked interviewees to explain their patient journeys from the moment they entered the hospital until they left, from their own perspective. Their responses formed the basis for the next questions and made it easier for both the interviewer and interviewee to understand the situation holistically. The second part encouraged interviewees to discuss generally negative and generally positive experiences during their patient journeys. Finally, the last part asked them to reflect on their choices of hospitals and gynecologists and overall satisfaction with their journeys.

The interview guide for Sample 3 contained three main parts. The first part asked senior managers questions about the hospital in general and the importance of the patient experience, the

influence of the design of the maternity healthcare built environment (including its architecture and the architecture's implementation in its surroundings), the tangible elements experienced by maternity users, and their overall evaluation of those elements. ~~Next~~Second, it posed detailed questions about the evolution of childbirth experiences, the architecture and design of hospitals in this regard, and future expectations. In t~~The third part included we went over all the~~ dimensions identified by the literature review and, adding dimensions from the in-depth the interviews of Samples 1 and 2, to discuss them more in detail. This helped us to refine the index. conducted during field visits to each of the six hospitals visited.

Analysis and Interpretation

All interviews were audio-recorded and transcribed verbatim before being coded and analyzed with NVivo (Version 12). We analyzed the data via a discovery-oriented, thematic analytical approach. Through an iterative process of reading, assessing, and identifying emerging themes and categories, we organized the data and described it in detail (Braun & Clarke, 2006). We followed a two-step thematic analysis procedure. First, we coded the verbatim transcript, paragraph by paragraph, to identify relevant themes. We established theoretical codes from extant prior literature first, then added inductive codes throughout the process to capture themes as they emerged from the data. We also developed a coding plan that we reviewed for internal consistency, leading to some adaptations of labels and conceptualizations. Second, we jointly developed theoretical, abstract categories for the identified constructs. During the categorization procedure, we constantly compared emerging findings with supplementary literature to integrate and extend prior knowledge (Strauss & Corbin, 1998).

Findings

Conceptualization of Maternity Healthscape (MHS)

Thanks to our multidisciplinary literature review and ~~in-depth~~ interviews with various stakeholders, we conceptualize the maternity healthscape as *the design of the maternity healthcare built environment, including the architecture of a facility, its implementation in its surroundings, and all tangible elements. In particular, the maternity healthscape includes specific aspects such as exterior, interior design, ambient factors, functionality, technology, tangibles of the service personnel, communal spaces, and additional tangible services. All those healthscape aspects are likely to influence mothers and their family to, ultimately, ensure a smooth childbirth experience.*

Maternity Healthscape (MHS) Index

To meet our second research objective, we built on the overview of the healthscape dimensions/subdimensions in Table 2. Following this line of thought, Table 4 demonstrates how we first modified and extended traditional healthscape dimensions such as ambient factors, functional factors, tangibles of the service personnel, and technology, and then added dimensions such as communal spaces and additional services. Table 4 summarizes (maternity) healthscape dimensions that emerged from (1) previous studies on healthscapes (i.e., overview of the healthscape dimensions/subdimensions, Table 2), (2) previous studies on maternity services (Table 3), and (3) data from the ~~in-depth~~ interviews with mothers, midwives, heads of midwives, and hospital executives. The second-to-last column in Table 4 lists the dimensions that we added to make the index more suitable for the maternity context. In the following paragraphs, we discuss each main dimension: (1) exterior, (2) interior design, (3) ambient factors, (4) functionality, (5) technology, (6) tangibles of the service personnel, (7) communal spaces, and (8) additional

services, along with their subdimensions.

[Insert Table 4 about here].

Exterior

The exterior dimension refers to the architectural elements that embody style, the general arrangement and components of all outer surfaces, how they fit into the surrounding neighborhoods and streetscapes, and their impact on sites and the people entering them. Some maternity research points out to the need for outdoor places to sit and relax, while in our interviews both mothers, midwives and senior managers state that this is of less importance due to decreasing length of stay and safety reasons. Therefore, the need for protected outdoor areas that are safe for mothers and their babies were highlighted (see Martin et al., 2021). In addition, mothers highly preferred private ways to enter hospitals and parking spots close to entrances; they described these impacts in stressful situations and the importance of clear, efficient guidelines on how to enter hospitals (Foureur et al., 2011). One of the hospitals we visited (also the most recently built) has accounted for this issue by providing a special entrance for delivering mothers (see illustrative quotes in Table 4).

Interior Design

Whereas healthscape research tends to be very general regarding interior design factors, both maternity research and our interviews highlighted more the engagement of mothers' supporters (see Harte et al., 2016), including detailed information on the comfort of mothers (e.g., upright birthing furniture), partners (e.g., comfortable furniture or double-sized mattresses), and visitors. Interviewees also highlighted distraction tools, such as those that facilitate movement. Provision of a homey, secure environment (e.g., visually hiding medical equipment, using non-clinical materials, providing places to secure personal belongings) was a top priority.

One of the newest hospitals in our sample includes large paintings in its birthing rooms (e.g., images of nature, see Aburas et al., 2017), that was established by a group of artists and psychologists to support mothers while giving birth, to help them relax mentally and reduce their pain. Therapeutic design in healthcare settings can enhance the environment, provide distraction, and aid wayfinding; it also can contribute to a patient's sense of personhood by creating dignified spaces.

Ambient Factors

Ambient factors emerged from healthscape research, maternity research, and interviews. Generally, they exist below the level of customers' immediate awareness (DCunha et al., 2021) and refer to background characteristics that trigger the five senses (Bitner, 1992)—, such as [temperature, ventilation, acoustics, music, lighting, aroma and cleanliness.](#)

Functionality

Functionality is the ability of architectural elements to facilitate performance and the accomplishment of goals inside the hospital (Bitner, 1992). Functionality within the MHS is of key importance, considering the chances of unexpected, unpredicted issues and timings. Easy wayfinding when entering the hospital is key, because it is essential to creating good healthcare experiences and organizational perceptions. Continuous information provision and close connection to midwife hubs are also examples of functionality. Privacy was one of the most discussed topics during our interviews, with several mothers mentioning their frustration about not having control over their environments or over who enters their rooms and when. They expressed their desire to have a sense of control over their actions, facilitated by good design that would enable them to move around ward areas, open and close curtains, control lights and temperature, as well as designs that aid rather than hinder their sense of normality (see Hamilton, 2021). One

of the hospitals used adjustable privacy signs that mothers could regulate, as locking doors was no option due to safety reasons. Previous studies similarly have reported that fostering a sense of control, providing information, and allowing patients to take responsibility for aspects of their care reduces helplessness and improves outcomes (Douglas & Douglas, 2004).

Technology

Recently emerging technologies have expanded the area of services from physical spaces to cyberspace (Han et al., 2020), merged with advanced technologies such as robotics, artificial intelligence, and cloud computing. One of the most dramatic changes since Bitner's introduction of servicescapes in the early 1990s is the birth of cyberspace and rapid advances in technology (Sahoo & Ghosh, 2016). We intentionally exclude research on the e-servicescape from our literature review, because we focus on tangible properties. Therefore, the technology dimension refers to technological tools and methods used in the hospital to improve the service from both medical and leisure perspectives. Technological support required for medicalized childbirth may increase anxiety for some women, thus optimal birth unit design should facilitate physiological birth while also providing access to technology for women and babies who need it (Foureur et al., 2011). From the interviews, we deduce that childbirth is as old as humankind, so compared with patients in other departments, mothers focus less on high-tech equipment. Nevertheless, the importance of technology continues to increase, along with patient expectations (Table 4). Patients tend to identify as important technology that provides time-passing distractions, such as proper phone and Internet connections and the ability to watch movies or television. Medical staff instead view technology as a tool to improve the overall functioning of the department; they highlight the need for digital patient information systems and health-tracking devices. The interactive digital projection system in Table 4 was not discussed during the interviews because it is not (yet) part of

the hospital infrastructure within maternity departments.

Tangibles of the Service Personnel

Service personnel tangibles is mentioned extensively in healthcare research, maternity research, and the interviews. For example, in a study by Chung et al. (2012), patients gave higher scores to competency, trustworthiness, empathy, and contentment with the consultation when the doctor was wearing a white coat. The tangible dimensions that are part of the MHS index represent three subdimensions: physical appearance, clothing, and accessories. Various mothers and senior managers stated that midwives attach more importance to their appearance than most other nurses.

Communal Spaces

The communal dimension refers to the actions, programs, and people that create a feeling of being part of a group, sharing a similar background and/or common needs and interests, that can achieve something together. In most hospitals, mothers do not tend to leave their rooms after delivery, even though most expressed the need to connect with other mothers and midwives to share information and experiences. Notably, in the selected hospitals, there are no collective rooms or places available to facilitate such (spontaneous) interactions, or social norms did not support them leaving their rooms. One newly built hospital provides communal spaces, such as a central breakfast place in an enlarged corridor, in which parents can meet one another or else create specific projects to connect patients, such that those who previously have experienced specific difficulties can support others (see Table 4). For many, the idea of hominess was defined by the presence or provision of space to welcome visitors and facilities for their other children to play or, in contrast, providing places for patients to be alone.

Additional Services

Within the maternity department, additional services can improve the patient experience and well-being before, during, and after delivery. This dimension refers to extra services that are not part of the medical act of giving birth but support the act. The services are specific to each healthcare department. As Table 4 indicates, these additional services will become more important in the future, because lengths of stay in Western hospitals are decreasing (e.g., overnights sleep options for parents with a premature baby). Because of the risks linked to home births, staff members at one of the hospitals we visited are considering how to open their hospital to independent nurses and mothers who experience difficulties during home birth. Another topic discussed during our interviews is the importance of continuity of care, which is inextricably linked to the various services mothers use, before, during, and after childbirth.

Conclusion

The design of the MHS can have a major effect on women's experience and their families and on the overall perception women have about the quality of care within the MHS (see Table 1)—which is in line with recent work on the role of the healthscape on patient experience in various wards (Martin et al., 2021; Ulrich et al., 2020)—including maternity wards (e.g., Aburas et al., 2017; Nilsson et al., 2020; Setola et al., 2019). With this article, we have sought to summarize and structure the current discussion of MHS research to conceptualize the MHS concept together with its dimensionality. According to our multidisciplinary literature review of healthscapes in general and maternity services in particular, but also our ~~in-depth~~ interviews with multiple stakeholders (mothers, midwives, heads of midwives, and hospital executives), **we acknowledge the unique needs of maternity ward users in terms of design, built environment, architecture of the facility, its implementation in its surroundings, and all tangible elements experienced by**

maternity users. We also developed a strong conceptualization and index of MHS to best capture the concept while providing an instrument to closely assess and monitor the quality of MHSs. Both conceptualization and index contribute to theory development by stimulating further research that also can improve the healthscape and experiences of mothers, other parents, babies, and families. Our detailed MHS index should help designers, architects, and managers identify key aspects to consider when improving maternity service experiences. Beyond the maternity sector, our enriched conceptualization of the healthscape can guide other healthcare departments to conduct detailed investigation of the characteristics of their specific departmental healthscapes. Moreover, **for hospitals, improved healthscapes may be a source of increased competitive advantage, especially in terms of enhancing stakeholders' trust, loyalty, and recommendations.**

Several limitations of our study suggest opportunities for further research. First, our research is limited by both its sample size and its restriction to Belgian hospitals. Second, the index we propose assumes that stakeholders' MHS expectations are homogeneous. However, the importance that stakeholder groups attach to the various dimensions of the maternity construct may vary (e.g., between mothers who have Caesarean versus vaginal births). Research also could examine the negative consequences (i.e., dark side) of improved MHSs; for example, patients offered hotel-like services might become more demanding than other patients. Moreover, research on the social consequences of the MHS is highly relevant, because the built environment, architecture, and design likely affect the quality of social interactions between users.

Our findings also provide hospital managers, architects, and other relevant stakeholders with insights into patients' perceptions, expectations, and preferences regarding maternity facilities, which they can use to improve their services and design of MHSs that trigger positive patient experiences. We complement data about patients' perceptions with those of midwives and

senior managers, to produce a holistic overview. The findings thus add to growing evidence that can inform the development and creation of patient-focused healthcare environments for the future and—with the help of supportive organizational behaviors—contribute to desired therapeutic outcomes for patients and satisfaction for them and their families.

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Field Code Changed