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Clinical Decision Making in Midwifery Practice: A Systematic Review

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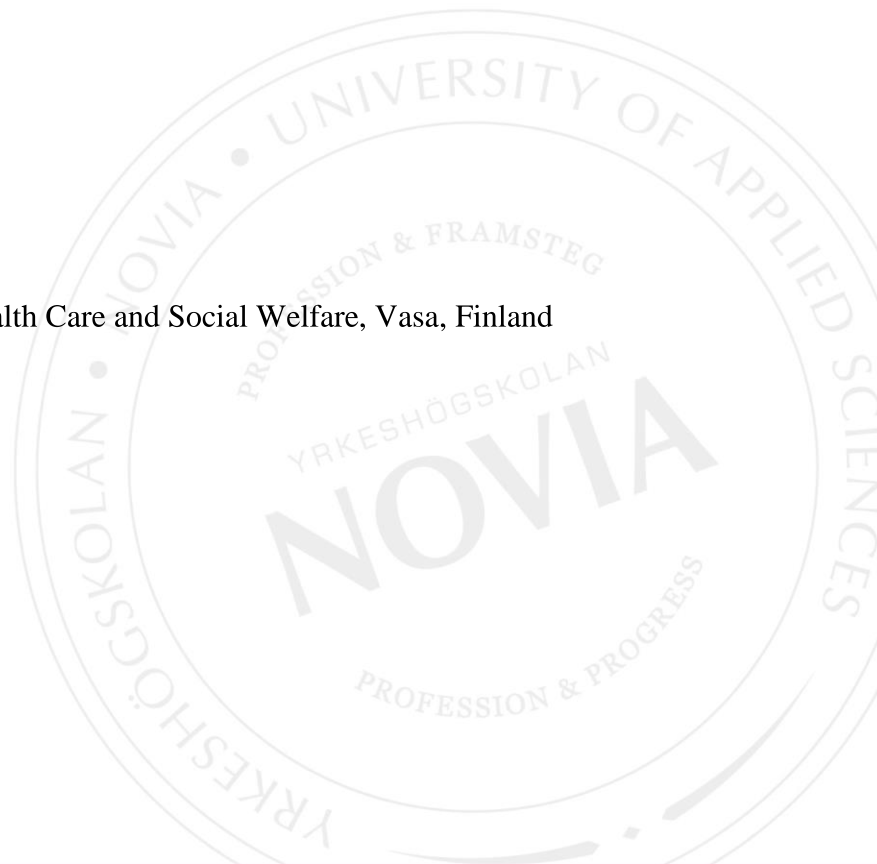

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Abstract

The Background of this Thesis is based on reviewing 23 articles using manifest content analysis based on frequency of its occurrence and provided a view of clinical decision making's components: Concept of Normal Birth, Maternity Care Determinants and Environment. The aim of this study is to gain deeper knowledge on CDM within midwifery and find answer(s) to "what affects midwives' clinical decision-making?" through a systematic review and analysis of academic journal articles within the last 5 years, available in Cinahl. The findings of this study are based on both manifest and latent content analysis of 19 articles. The meaning units derived from analysis of articles were inductively classified concluding to an assistive head theme of Mother along with main themes of Midwives' knowledge, Midwives' principles, and Organizations' setting.

In the result of this study, communication skills, postpartum/prepartum care, documentation and fear of blame were not found. Intuition, midwife-led/obstetric-led care approach, and birthplace's effect were among the findings not occurred in the background section. The outcome of this study could have been indicating different aspects of clinical judgment if ethics and ethical challenges were included in the search keywords. This study can be a basis for further research combining the ethics and ethical dilemma in decision making matrix, how intuition is regarded in CDM-midwifery practice, and effect of birthplace on CDM.

Language: English
Key words: Clinical decision making, clinical judgment, midwifery, midwife, midwives

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Abbreviations:

Arene: Rectors' Conference of Finnish Universities of Applied Sciences

CDM: Clinical Decision Making

CTG: Cardiotocography

DM: Decision Making

FGM: Female Genital Mutilation

IOL: Induction of Labor

LOI: List of Obstetrics Indication

MCA: Maternity Care Assistants

MEOWS: Modified early obstetric warning score

MSW: Midwifery Support Workers

OHDC: Obstetric High Dependency Care

TENK: The Finnish Advisory Board on Research Integrity

VBB: Vaginal Breech Birth

1 Introduction

The decision making process among health care professionals has been a significant subject in care and mainly in "notion of good", a term used by Patricia Benner defining the health care personnel's attitude and behavior in choosing between variables and in the end providing the best care in the given situation to achieve the utmost of benefit to patients. Decision making process has been given many terms like "clinical decision making", "critical thinking", "clinical problem solving", "clinical judgment" etc.

This study's theoretical framework is based on Benner's 1984 model of "skill acquisition" in "From novice to expert: Excellence and power in clinical nursing practice", she referred to "clinical judgment" explaining the process of decision making among nurses. Though in this study, "clinical decision making" – CDM is being used, as I found the term more often used in the academic papers, through the search on Cinahl. In Cinahl the group term search of "clinical decision making and clinical judgment" was used interchangeably.

Owing to guidelines, agendas and standards provided by international-national health organization, and policies of communities, the concept of CDM is more studied and understood under evidence-based research in recent years. One of the core reasons leading to evidence-based researches and studies is the provision of better care and in broader vision to have a healthier society by the practitioners who are deciding responsibly and ethically. These research mostly focus on the process of a decision/action to a given circumstance and analyzing the reasons behind the act, in order to evaluate the soundness of decision in the perspective of circumstance. CDM process and mappings are an empowering tool for health care personnel in the complicated situations.

The studies done in the field of CDM can shed more light on the process of decision making. Thus having more evidence-based facts upon a certain decision expedites the instructions and guidelines for the newly graduate nurse-midwives. It is also worth mentioning that the concept CDM is a salient topic among advanced practitioners' study giving importance to the knowledge, education, practice and expertise.

This study can be considered as a sequel to the systematic literature review study done in my nursing education titled "Clinical decision making – Role of intuition in CDM". It was mainly focusing on the articles and books written in nursing practice and how intuition is viewed among nurses. The literature review of 12 non-randomized articles in CDM and intuition resulted in 5 themes: emergence of experience, knowledge, nature of care, patient outcome and developmental needs. Nature of care, physiological changes and visceral reactions, and role of communication were the themes not mentioned in the Benner's model of clinical judgment and how expert nurses use intuition.

In the current study titled "Clinical decision making in midwifery", I aim to search through the articles mainly written in the midwifery practice in order to provide an understanding over the decision making process in midwifery. The idea of writing the same main subject but in area of midwifery became apparent to me when I had my first apprenticeship in delivery care. One of the most interesting facts I found was the diversity of cases, same diagnosis (birth), but totally different approach and care. The other point was the degree of

intensity and complexity of the duty upon midwives, there is no chance for mistake (zero tolerance over mistakes), responsive timing according to every situation and critical clinical decision making (CDM). (Adibpay, 2017, Clinical Decision Making: Role of intuition in CDM).

2 Aim and research question

The studies done on the concept of clinical decision making is an important tool in tracking the reasons behind decisions of expert healthcare providers. The starting concept of this research owes to my previous study within CDM in nursing, the apprenticeship periods within my midwifery study and how through the theoretical courses and practical hours I am expanding my knowledge, experience and ethical responsibility.

The primary aim of this study is to gain deeper knowledge on CDM within midwifery, focusing on literature review of the articles written in the concept of clinical decision making in midwifery practice using Benner's (1984) model of skill acquisition. The study is exploring answers to "what affects midwives' clinical decision-making?"

3 Background

This section is developed from review of 23 articles within the concept of CDM, 471 hits on article search, after exclusion criteria applied led to 230 articles, 104 articles were selected for the result of the study, and the rest were reviewed ending to selection of 23 articles which used them as the source of background of this study. The selection and review is explained in details in the method, data collection and analysis. The common concept within all articles was phenomenon of pregnancy, childbearing, safety and health of mother and child, while the care and interventions provided by healthcare practitioners in all stages of this phenomenon was considered. Childbearing in most articles were viewed as normal and the midwives' role was to assist and support the mother in this process or assist the obstetrician in case of emergency interventions. The difference of approaches in maternity care were affecting the decision-making process in care and interventions provided to mother and child; explaining the culture and environment of the maternity unit and how birth and risk perception are viewed.

Confidence was the other theme repeatedly mentioned in the reviewed articles, pertaining to the recognition of role of knowledge, education and skills of the midwives. The other prominent theme was the guidelines and instructions provided to midwives in order to facilitate or restrict their decision-making process. Concept of normal birth, maternity care determinants, and environment were the main themes emerged from manifest content analysis of iterative data within the articles; list of the articles and presentation of background can be found respectively in appendix 1 and figure 1. The articles have been given numbers to make the referral easier, as the focus was mainly on the result, discussion and conclusion; the page number is not provided as these parts are in only few pages making the detection of the theme easy.

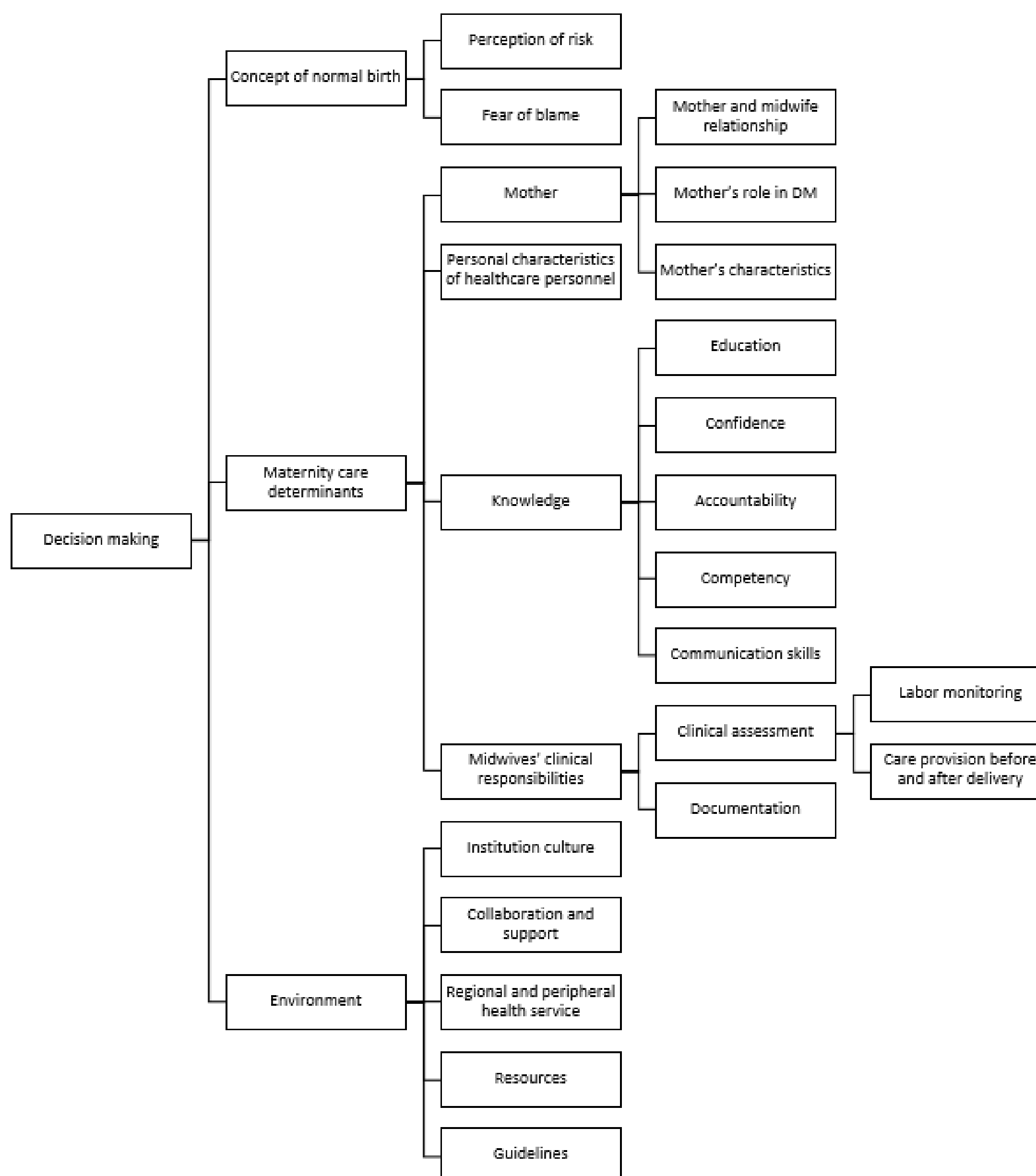

Figure 3-1: Mind map of background.

Concept of normal birth

Concept of normal birth or considering birth as a normal procedure was an interesting theme that appeared in 7 articles denoting the maternity care's view over childbearing, thus the decisions and interventions applied to this process. It is the manifestation of the philosophy behind childbearing and care, which is as well the definition of midwives' role "care and assistance of women during pregnancy and normal birth" (12 and 20). The following phrases "Normal birth" (7, 11, 12, and 14) , "affinity with physiological birth" (7), "natural functions of the women's body" (19), "instinctive birthing behavior led by the woman" (13), "normal labor" (11), "mechanism of normal breech birth" (7), and "trust in normal birth" (14) were indicating the concept of normal birth as the tool for provision of care with or without interventions (7,11, and 20). Assumption of normal birth can help the midwives in their decision making process in triaging the women into low-risk or high-risk

with timely and faster flow of care, contrary to some maternity units considering birth as "abnormal", and the culture of risk ruling over the maternity unit (14).

Perception of risk

In 6 of the reviewed articles, climate of fear and mitigation of risk were among the findings of the researches. In these articles, birth was considered as an abnormal phenomenon which causes complications thus interventions are needed even when childbearing could be categorized as low risk. "in the risk culture of a hospital birth is seen as abnormal" (14), "possibility of harm to mother or infant" (19), "post-event factors contribute to midwives' perceptions of an adverse perinatal event" (23), culture of "mitigation and elimination of risk" (5), justification behind caesarian sections: "doubtful indication" (9), and "risk management" (12), "risk averse and traditional obstetric led model of care made it difficult for many midwives" (12). "What are the characteristics of perinatal events perceived to be traumatic by midwives?" (23) gave a good understanding of how risk is perceived by giving the characteristics of a trauma: *unexpected and sudden*, *highly severe in their nature*, *involving adverse or enduring complications*, and *difficult to control*.

Fear of blame

Fear of poor outcomes and blame was another theme noted, citing how the culture of fear and doubtful indications can lead to adverse medical interventions like caesarian section (9). "Climate of fear, worrying about being blamed for adverse events in childbirth" (1), "distancing fear" (7), "fear of poor outcomes; fear of blame from colleagues; responsibility of poor outcomes after vaginal delivery would fall on the midwife" (9), and "sense of fear not detecting abnormality in timely fashion resulting in criticism from colleagues; midwives role is eroding as an increased culture of risk and fear leading to increased unnecessary interventions" (14) were the highlighted notes on fear of blame. Morality of the decisions taken, and interventions carried out is a challenging factor as healthcare personnel would get involved in excessive monitoring in order to protect themselves from the probable adverse outcomes and fear of criticism from the society (14).

Maternity care determinants

Knowledge development and responsibility of midwives were among the highlighted factors in the review of articles and strong connections could be inferred between these two but titling them under one covering theme was challenging. The heading of maternity care determinants was chosen based on the characteristics both elements had in common: provision of support and care of mother and infant and assurance of delivery of quality care. Maternity care determinants are explaining the role of knowledge being transferred through education leading to more confidence, accountability, competency and developed communication skills. All abovementioned factors in turn result in sound clinical judgment, needed interventions and quality care. Meanwhile midwives' clinical

responsibilities are the manifestation of knowledge visible in midwives' clinical assessment and documentation.

Role of mother

Almost half of the articles (11/23) reviewed in the background sections were pointing to the role of mothers affecting directly or indirectly the interventions, decisions, and quality of care. Three subthemes of Mother and midwife relationship, mother's role in decision making, and mother's characteristics were prominent in the role of the pregnant woman in clinical judgments and performed interventions.

Mother and midwife relationship
Relationship among the mother and the midwives could be seen as "knowing and understanding the woman's wishes and desires" (22), "model of relationship between women [mother and midwife]" (4), "the development of a relationship between women and midwives antenatally can assist the process of maternal care" (14), and "knowing the woman and what she wants". This relationship enables the midwives to have a better understanding of the care needed for mothers, resulting in "benefits for women receiving care" (18), and "empowerment of women" (13), especially if there has been an on-going care with the same midwife.

Mother's role in decision making
Mothers were mostly not involved in the decisions pertaining to their antenatal care and childbearing (14), this incident was highlighted most in the immediate or urgent incident of care like induction of labor (22) or caesarian section (9). The suggestion to "improve antenatal education" (22) in order to give information and understanding to mothers of benefits and risks of the possible intervention was made in order to help facilitating the decision making and understanding for mothers.

Mother's characteristics
Increase of median "age of first-time mothers" (9), "changes in lifestyle" (9) and access of women to knowledge regarding their or their child's health (19) have all impacted the decision-making process. Though the latter article mentioned that increase in women's knowledge has not resulted in "reassurance".

Personal characteristics of healthcare personnel

Nature of decision making is supposed to be objective, though personal salience, past experiences, care-provider characteristics like "demographic factors: age, race and sex" (3) have an impact on clinical judgment. Depending on one's view of life, self-assessment and reflection over an incident is different from one person to the other (16). This can be viewed in an obstetrician's risk assessment (22), midwives' personal salience in relating to her personal experiences in attending a birth (10 and 23). Decisions and interventions are also impacted by the characteristics of care givers as "healthcare professionals' ability to relinquish control" (14) and "midwives' sense of appreciation by society in performing re-

infibulation" (8), "midwives innate trust in birth" (14) or "experiences and sound judgement" (20).

Knowledge in maternity care

Knowledge is considered as the general term engulfing themes of education, confidence, accountability, competency and communication skills due to the fact that knowledge is the key in achievement and developments of many personal skills and the route of delivery is education. The following subthemes of knowledge are so connected, related and complementary to each other that a complete distinction of subjects was impossible. Each characteristic can define the other as in confidence and competency, and confidence and accountability, and in turn inclusive to education. Education seemed to be the nourishing agent in the achievement of the abovementioned characteristics.

Education

Education is the term used to describe the ongoing (16) process of delivery of knowledge and accumulation of skills in healthcare personnel and there is a need for education, training and further development. "Education" (4, 6, 12, and 20), "knowledge" (1, 4, 8, 20, and 21), "learning" (4, 15, 16, and 17), "trainings and practice" (1, 4, 8, 15, and 20), "undergraduate program or study" (4 and 18), and "continuing professional development" (16) were among the repeated themes in many articles, thus highlighting the role of knowledge and education as part of midwives' role. It prepares (4) the healthcare personnel in "establishing valid and reliable outcomes" (6), management of "emergencies in real life" (17) - "complex scenarios" (4) – maternity care "problems" (15), and "decision making" (12 and 20).

Education provides a safe practice environment where mistakes can be made without any harm (15 and 17), while increasing confidence, competence, expertise and knowledge in delivery of good or excellent care (15, 16, and 18). Education enhances the understanding and readiness of action concerning the unknown subjects like Female Genital Mutilation (FGM), or water-birth delivery, especially in places that due to geographical location or limited resources, their prevalence of occurrence, for example care of a mother with FGM in a remote town in north Scandinavia compared to one of main hospitals in London, is less but still possible. Simulation based skill, post graduate courses (online, module, face-to-face learning), obstetric triage system, practice, work-based learning, and mentoring were among the learning processes. Among the mentioned methods, face-to-face learning with lecturer was the preferred one (4).

Confidence

"Confidence and confident" (1, 4, 7, 13, 15, 17, 18, and 20), "assertive behavior" (10), and "empowerment" (11) were among the repeated patterns in articles indicating the feeling of having the power and ability to make sound decisions. I allocated different division for competence, justifying that one can be competent and skilled but exhibit low confidence in putting those skills into practice. "Increased and informed knowledge" (18), growth of "experience and understanding" (4), learning evidence-based and practiced sills (13 and

18), “implementation of learnt objectives” (1) all are indication of confidence in midwives, leading to sound decisions. (11). “Graduate midwives' perception of their preparation and support in using evidence to advocate for women's choice: A Western Australian study” was referring to confident behavior’s benefit in provision of reflective feedback and constructive criticism (10).

Accountability

Responsibility is one of the salient themes pertaining clinical decision making indicating the degree of accountability for one’s decisions in the caring process. Accountability raises questions and disputes in doubtful indication (9) like unjustified caesarian sections (9) or induction of labor (22). This characteristic would not develop nor shape fully without expansion of one’s knowledge and competency which in turn leads to confidence. The confidence cultivated by knowledge would affect the decision making of the care givers, by giving them the power to ask for justification of an intervention, considering the ethical and moral of care given to mother and child (10). “Gate keeper” (22) was the term given to the senior midwife or midwifery manager who has the power of questioning the decisions of induction of labor or caesarian section (9), the gate keeper is “informed and have skills to support or defend” (10) a decision. The gate keeper feels “responsible” (4) to “increase the community awareness and advocacy” in order to protect mother and child from unfavorable procedures (8).

Competency

Competency is considered as an empowering factor in decision making, informed choices, patient safety and control of situations (4, 10, 15, and 16). “Nurses', midwives' and key stakeholders' experiences and perceptions on requirements to demonstrate the maintenance of professional competence” defined competency as *development of clinical skills in context of developing theoretical knowledge, communication skills and CDM skills* (16). The theme of competency can be seen in the following: “competency and competence” (2, 4, 8, 16, and 17), “time management and medication management” (2, 4, and 21), “being prepared for responsibility” (4), “personal skill” (7), and “integration of knowledge into practice” (18).

Competency of a care giver provides mutual interests and benefits: for mothers in “respecting their wishes and providing them with informed choices” (10), “patient safety and delivery of optimal care” (8, 16, and 18) and for care givers in their profession as considering themselves “successful midwife” (4), ability to “manage and organize better” (21), and “finding a balance of work and personal life” (4). Cultural competence in article 8 “Evidence to inform education, training and supportive work environments for midwives involved in the care of women with female genital mutilation: A review of global experience” was asserted as an empowering tool enabling midwives to have correct understanding of the complications associated with FGM, thus providing mothers with support, informed decisions and quality maternal and child health care.

Communication skills

Communication and counselling skills are part of competencies enabling the care giver to provide a better care considering the need of the woman, her family and her child. Communication skills has a mutual approach: midwife-mother relationship and midwife-

maternity unit collaboration, resulting in continuity of care (6, 12) and sound decisions (3 and 20). "Communication skills and communication" (8, 10, 11, 12, 15, and 17), "communicating" (11), "interpersonal and counselling skills" (20) were the repeated pattern noticed in the articles. Effective communication and counselling skills develops through "knowledge" (10), "supportive health system" (8), experience and confidence (17). Good counselling skills provides support to the mother, her family and the child (11), respect to mother's autonomy during labor (12), and empowers the care giver "to question and gather information to make an informed decision" (10). Some articles mentioned the need for development of communication skills and more clear communication both within the system and with clients to understand the problems and facilitate the care decisions (11, 12).

Midwives' responsibilities

Support to the mother, pregnancy care, care of the infant and conducting the normal birth are considered to be the most salient features of maternity care and midwife's role (15). Midwives are involved in assessment and triaging the degree of interventions needed for the mother and baby in all stages of pregnancy. They are part of clinical decision making either alone by performing in antenatal, delivery and postnatal care or by providing assistance in decision making to doctors, referral and consultation in case of complications and other interventions performed by obstetrics like caesarean section or induction of labor. Midwives' responsibilities vary from assessment, labor monitoring, prevention and preventive measures in emergence of early alarm in an ongoing cycle of evaluation and reevaluation of outcomes with the goal of safety of mother and child and delivery of quality care.

Clinical assessment

"Assessment" (2, 11, 15, 16, 20, 21, and 22), "diagnosis" (20), "decisions and decision making" (1, 2, 3, 6, 9, 10, 11, 14, and 22), "clinical judgement" (20 and 21), "managing" (4), and "triage" (2, 11, 20, and 21) were of the found patterns indicating the role of assessment and clinical decision making in a midwives' spectrum of responsibility. Clinical decision making is based on the assessments performed in every stage of pregnancy and labor, the triage of assessment assumptions, interventions and reassessment (15). Assessment is the primary detection of problem (11, 15) by in-patient visit to maternity unit or through phone triaging (2, 11, 20, and 21) to group mothers to low-risk and high-risk (11) and provide them timely care (21). However, the assessment skill and competency owe to knowledge and education as fundamental pillars of decision-making ability and clinical assessment. Labor monitoring and Care provision before and after delivery were two sub themes noted in the clinical assessment.

Labor monitoring

Observing and monitoring the delivery are salient part of clinical assessment during delivery assisting midwives to have a sound clinical judgment. "Bedside monitoring" (11), "surveillance" (14 and 19) are referring to the continuous observation, evaluation, interventions and reevaluation or labor process, enabling the midwives to prevent the adverse outcomes (11, 14, and 19). Though in article 19 "Risk perception in pregnancy: a

concept analysis" the surveillance and monitoring during maternity care was argued to have "opposite effects on women" putting them in the situation to feel more at risk. Labor monitoring is equipped with the tools: ultrasound (22) and partograph (11) to facilitate observation and risk assessment of both mother and infant in labor progression (11 and 22).

Care provision before and after delivery
The care provided preceding childbearing is a matter of concern in maternity care. Antenatal or prenatal care is considered as the primary care and preventive measures in screening of possible adverse outcomes and complications (6). Antenatal care is the initial triage and filtering in low-risk and high-risk maternity care, thus decisions on follow ups and possible inventions (6 and 12). The concept of antenatal care is observed in the following themes of "antenatal" (22), "antenatal clinics" (9 and 12), "primary prevention" (6), "community-based initiatives" (6), and "antenatal care" (15). The benefits of antenatal and postnatal care are prominent in early detection (11) of "danger signal" (9), and necessary interventions (6) which has a great impact on the clinical care during birth and labor (12, 15, and 22).

Documentation
Documentation is considered as part of responsibilities of midwives and healthcare personnel as seen in the following patterns: "documentation and documenting" (8, 11, 13, 15, and 20). Documentation in progress of care and labor (11) can lead to improvement of "technical, reporting and legal knowledge" (8) enabling the healthcare personnel to reflect through learning on "clinical challenges and documentation" (13).

Role of the organization in maternity care

Culture of an organization can play an important role in the decisions related to provision of care to mothers. Meanwhile, the collaboration and support atmosphere of an organization provides satisfaction and leads to better outcomes in achieving the purpose of caring for women. Whereas resources and regional-peripheral healthcare unit maybe affect in care quality. Organization culture, collaboration and support, regional and peripheral health service, and resources were prominently occurring themes categorized under environment.

Organization culture

The culture, general atmosphere, and prevailing philosophy of a healthcare institution can influence the process of decision making. This notion was noticed in one- third of articles with the following patterns: "obstetric model or midwife-led model" (6, 12, and 22), "taken in consensus, but raised tension between the groups" (9), "feeling pressure by senior midwifes to perform infibulation" (8), "cultural resistance around breech birth" (7), "university hospital's status as a referral institution" (9), "organizational culture" (1), "workplace culture" (8), "private sector's attitude" (22), and "openness and barriers to innovations" (7).

The ambiguous and indefinite job profile description can lead to "conflict and uncertainty while operating beyond what they determine to be acceptable in their professional roles" (2) and "pressure to participate in activities that are not consistent with professional guidelines" (2) raising to dissatisfaction and feeling of helplessness for the personnel (23). The rolling maternity model of obstetric-led model or midwife-led model was a thought-provoking factor, concerning the decision making in attending to the care of the pregnant woman (6 and 22) and how the midwife-led model in care of low-risk mothers argued to be "cost effective, safe, require fewer interventions" (6). The difference of ideology of sectors as in private and governmental hospitals can play an important role in provision of care as private sector may "much easier accept reluctantly to a woman's request of induction of labor (IOL)" (22) or a university hospital would perform more caesarian section automatically and with less hesitation as it is believed that referral to the institution is made on complicated cases requiring caesarian section (9).

Collaboration and support

Supportive working environment and effective collaboration was another theme being referred in 10 articles. "Consulting" (11), "clinical team cooperation" (11), "establishing of community of practice with other supportive breech-expert professionals" (7), "interprofessional dynamics and multidisciplinary team" (3), "regular meetings" (9), "collaborative partnership" (8), "integration and closer collaboration" (6 and 12), "support" (15 and 23), "teamwork" (23), and "referral system" (9) were among the phrases which indicated the concept of collaboration and support. Consultation and referral are considered as a part of integrations and collaborative – supportive environment in order to raise concern about "abnormalities" (11), integrate the "cross sectors" (8), and solidify "the closer collaboration between primary and secondary services and teams" (6). "Inefficient referral system" (9) is causing burden to mother and the healthcare system, raising the risks and adverse interventions.

In some of the articles, there were concerns about healthcare professionals feeling less supported (11, 15, and 23) leading to frustration and feeling of helplessness (23) in their working environment, though they were acknowledging the importance of collaboration and teamwork as a positive factor (12) that affects the decision making process (9). One interesting example of effective and supportive collaboration was the breech-experienced experts' community, gathered non-institutionally in order to provide support, consultation and confidence of action in breech birth as a normal birth (7).

Regional and peripheral health service

The delivery care challenges in rural areas vary from staff shortage (2, 9, and 22), equipment (9), and the geographic location and accessibility and availability of needed care in time (3 and 12). Maternity care provision is more limited due to limitation of midwifery resources, procedures like (induction of labor) IOL (22) cannot be performed usually in rural hospitals and workload is shifted to bigger hospital. As the care is becoming more centralized, the geographical boundaries limit the women to get timely

care and this leads to increase in number of complications due to distance (9 and 12). Due to shortage of staff and resources, midwives in regional areas feel more pressure in performing their clinical assessment, as in “triaging and filtering patients to maximize the use of medical staff time” (2).

Resources

Recourses and how they affect decision making, delivery-interventions and quality of care were noted in 9 articles. It varied from lack of human resources: “shortage of staff” (1 and 11), to other types of resources such as: “lack of adequate remuneration and professional development opportunities” (8), “availability of institutional resources and support” (3), “accessible waterbirth facilities for all women” (13), “lack of resources in emergency situation” (15), and “lack of equipment and drugs” (8). They all indicated the impact of scarcity of resources decision making (20) as in “planned deliveries in the form of IOL would help to manage and minimize disruption of workloads” (22) and how midwives who have enough time can “formulate best practice clinical decisions” (3).

Guidelines

“Guidelines” (3, 8, 10, 12, 14, and 20), “protocols” (3, 8, and 14), policies” (2, 8, 12, and 20), “standardized care” (3), general agreement” (22), “clarity of governance and line of accountability” (2), and “systematic approach” (15) were among the themes that appeared in number of articles. The major concept linked to them was the absence of such guidelines or lack of their clarity. In addition it was mentioned how the system, healthcare personnel, and mothers would benefit them as in: “care of women undergone FGM” (8), “variation over timing of IOL” (22), “professional responsibility for decision making” (14), “benefit of objective guidelines” (12), “enabling standardized CDM” (12), improvement in “community care services” (2), “developing systematic approach to obstetric and neonatal emergencies” (15), and “graduate students” – novice practitioners (10).

On the contrary, 2 articles were mentioning the disadvantages of guidelines and how “strict protocols can increase the perception of birth as a high-risk event” (14) and “limiting the competency of nurses by local policy in expanding their role due to polices requiring certification” (2).

Summary

Mapping the results, findings and conclusions of articles was an interesting challenge and opportunity to have a different grasp of clinical decision making in researches and practices outside of textbooks and theoretical facts. The analysis of concept of normal birth led to more detailed information regarding the understanding of birth phenomenon and how risk perception and culture of fear and blame, considering the risk and fear opposing description of normal birth.

The second theme “maternity care determinants” categorized to three sub themes of knowledge, midwives’ clinical responsibility and external factors as they are the defining features and factors affecting care of mother and infant. The sub theme of knowledge reiterated the importance of knowledge in maternity care and quality care in association with education, confidence, accountability, competency and communication skills. Midwives’ clinical responsibilities provided a picture of clinical assessment through monitoring in the entire period of pregnancy and role of documentation. The final theme of external factors explained the parameters outside of control of healthcare personnel which has a direct or indirect impact on the quality of care: mother, environment, personal characteristics of healthcare personnel, and guidelines.

4 Theoretical framework

Decision making ability is a salient factor regarding the degree of responsibility assigned to healthcare personnel. This ability can be developed through education, training during practice, and experiences gained at field work. The ability to expand one’s decision making process enables the person to perform safer, more appropriate and deliver best practice to the patient which follows the nature of care. Patricia Benner (1984) “From novice to expert: excellence and power in clinical nursing practice” has distinguished the level of care abilities in given situations by healthcare personnel. She mentioned that the practical experience enables better judgment and interventions in care. The five levels of skill acquisition model (as below) provide a deeper understanding of how healthcare personnel grow during their working life.

Novice

Novice nurses or nursing students have no or limited experience of medical and nursing technical situations. Their *rule-governed behavior is limited and inflexible*. In real life situations they try to match the textbooks description of diseases to the *real patient’s signs and symptoms*. They follow rational calculation along with guidelines to perform their task. Their experience is developed through the tasks they are performing. (Benner, 1984, p.21; Benner, Tanner, & Chesla, 2009, pp.210, 314, 316, 385)

Advanced beginner

They are mainly involved in *observations and interpretations* of the situations. Likewise, novice nurses, advanced beginners are also involved with guidelines and *textbook descriptions*, but their performance is better than the novice nurse, hence far beyond the standard level of care. They try to recognize the *aspects and attributes* in a given situation, though they cannot evaluate the patterns or the holistic picture of the given situation, neither to recognize the situation’s salience. Situation pertaining the patient’s care is seen *fragmented* and the main focus is given to their way of performing the task, causing at

some points to ignore the safety of patients and the alarming signs. (Benner, 1984, p.22; Benner et al., 2009, pp.31, 37, 58, 60, 385)

Competent

Minimum field work experience of 2-3 years contributes to the factor of competency. They have a better grasp of the situation but limited to a specific patient in a given time. They are in the phase of recognizing the textbook's knowledge and guidance within the scope of practice. Competent nurses are still following the rules and guidelines in order to have a *clear connection between presenting situation and body of professional knowledge*. Their approach is goal-oriented by constant planning, analysis of choices and omission of irrelevant factors according the guidelines. Like advance beginners, they have a limited holistic picture of care as they are more focused in the given situation, while lacking the *agility and flexibility* of the proficient nurses. (Benner, 1984, p.25; Benner et al., 2009, pp.265, 385; Benner, Hooper-Kyriakidis, & Stannard, 2010, pp.10, 17-18)

Proficient

A proficient nurse still needs time in thinking about the given situation, though in this stage the nurse is more involved in the practical reasoning based on the experiences gathered within years of practice in distinguishing the similarities and eliminating the irrelevant factors. They have a more intuitive approach toward the patient's condition and less calculative reasoning. Their reasoning and re-evaluation of the interventions performed is faster compared to competent nurses. Their vision is more holistic as they are not bound to aspects and attributes. (Benner, 1984, p.27; Benner et al., 2009, 137, 139, 385; Benner et al., 2010, 17, 62)

Expert

Expert nurses are involved in leading the situations pertaining the safety of patients, efficiency, and best practice. The sense of moral obligation to provide quality care for the patients. They are equipped with the experiences and an adept clinical grasp gained through years of practice, enabling them to become skillful at *reading open-ended and under-determined* clinical conditions. They have strong ability in predicting the conditions and be prepared for the next interventions if needed. They are leaders in their area of expertise and have the ability to coach and be a mentor to proficient or competent nurses. (Benner, 1984, pp. 31-32; Benner et al., 2009, pp.148, 151, 167; Benner et al., 2010, pp.23, 142, 188)

Clinical decision making is an ongoing ability due to the nature of caring science providing the opportunity to ongoing practice and on-field learning facility. The skill acquisition model can be used as the guiding tool for the hospital or the healthcare organizations in provision of training courses and continuous update in healthcare routines in order to ensure achieving the morally quality care. Since adaptation of skill acquisition model by

Benner, clinical decision-making concept has undergone many changes and developments by numerous researches done in care field.

5 Methodology

This study is a literature review of scientific articles searched through Cinahl database, reviewed using qualitative content analysis and presented through description, figures, and flowcharts. This chapter defines the research approach and design: explaining the literature review, systematic review, inductive content analysis and the method of design used for this study. Further it explains the data collection criteria: units of research, the reasons behind the choice of Cinahl as the search engine, inclusion/exclusion factors, and the process applied in writing this study. Data analysis is aimed to illuminate the reasons behind the presentation of findings. Finally, ethical consideration evaluates the study's integrity.

Research approach and design

Literature review as a qualitative research method deals with objective (Polit & Beck, 2019, p.117) summary of evidence-based facts (Polit & Beck, 2018, p.108), *relevant journal articles* (O'Leary, 2010, p.81), and *scholarly materials* (Garrad, 2014, p.4) on a topic or argued problem statement (Polit & Beck, 2018, p.108; O'Leary, 2010, p.82) to build *a rich description of a phenomena* (Polit & Beck, 2018, p.55). It is a continuous process of reading, analyzing and interpreting, identifying the main theme, and finally presenting them (Garrard, 2014, p.4; Polit & Beck, 2018, p.53; Gerrish & Lathlean, 2015, p.101).

Systematic review, *the pinnacle of the hierarchy* of evidence (Polit & Beck, 2018, p.23) has been used interchangeably with literature review but the distinctive features are: the detailed fusion of analyzed articles through a systematic (non-randomized) data collection of scientific literature and scientific methods to answer the question of a study. (Polit & Beck, 2018, pp.310, 420; Garrad, 2014, p.5; O'Leary, 2010, p.81).

Robinson and Lowe (2015, p.103) in the editorial on Australian and New Zealand Journal of Public Health presented difference of literature review and systematic review with the following criteria:

Literature review	Methodological stage	Systemic review
Introduces context and current thinking, often without a specific question	Focus of review	precise question
Random process of data collection, usually searching only a few databases.	Methods for data collection	Several specified databases using precise search terms
Papers are read, 'take home' messages used in the review.	Methods for data extraction	Data extraction tool used, two or more researchers undertake data extraction.
Anything up to 150 papers or more.	Number of papers included in review	Usually less than 50 papers; often fewer than 10.
Interpretation the meaning of the results.	Methods for data analysis	Recognized, referenced, methods for data analysis
Prose paper, occasionally supported with diagrams.	Methods for data presentation	PRISMA/CONSORT or similar chart/table of included papers.
Not suitable for Journal publication.	Publication	Might be suitable for Journal publication.
Actions/directions informed by evidence of various kinds drawn from included papers.	Outcome	Actions/directions are based on evidence from reviewed papers.

Table 5-1: Literature review and systematic review. Adopted from Robinson and Lowe (2015).

Content analysis is an approach used in qualitative descriptive research method (Vaismoradi, Turunen, & Bondas, 2013, p.399) with *either qualitative or quantitative data used in an inductive or deductive way* (Elo & Kyngäs, 2007, p.109). It is a process of reading, selecting, analyzing, detecting the saline themes, and organizing them under a meaningful pattern (Polit & Beck, 2018, pp.55, 116; O'Leary, 2010, pp.263, 270; Garrard, 2014, p.5; Gerrish & Lathlean, 2015, p.480; Elo & Kyngäs, 2007, p.109).

Content analysis, data analysis, template analysis, and thematic analysis have been used interchangeably, nevertheless it is the process of *preparation, organizing, and reporting* (Elo & Kyngäs, 2007, p.109) the found themes, concluding the results and presenting it for further use or research. Content analysis is analyzing the contexts and works, finding patterns and themes based on *frequency of its occurrence*, or interviews, *materials of life stories* (Vaismoradi, Turunen, & Bondas, 2013pp.399, 401-2).

The process of finding the patterns, labeling or coding into units, subcategories, and connecting them to broader concept of meaning units which forms later a theme is the main purpose of content analysis (Polit & Beck, 2018, p.282; Graneheim & Lundman, 2003, pp.108-9). Analysis of content can be derived from the manifest content meaning the distinction of units and meaning units based on the *similarities and differences* and what is visible on the surface of the text or latent content meaning interpretation of underlying meanings (Polit & Beck, 2018, p.282; Graneheim & Lundman, 2003, pp.108-9).

Inductive content analysis is a reasoning approach *from specific observations to more general rules*, while deductive approach forms *specific predictions from general principles* (Polit & Beck, 2018, pp.401, 406; Elo & Kyngäs, 2007, p.109). The former approach is the background reasoning of this study, as a general question of "what affects midwives' clinical decision-making?" led to search of articles within midwifery field with the general term of clinical decision making, and through analysis of selected articles, the iterative themes were clustered under a heading. Inductive process is assisted by *open coding, creating categories, and abstraction* (Vaismoradi, Turunen, & Bondas, 2013, pp.401-2; Elo & Kyngäs, 2007, p.109).

According to the classification presented by Robinson and Lowe this study can be considered as a systematic review rather than a literature review since it has a precise question, scientific journal articles searched through Cinahl– principal electronic database in nursing research (Polit & Beck, 2018, p.111). The process of research lasted for few months, all data collected, analyzed, written by one author, and content analysis approach is critiqued compared to methods like grounded theory or hermeneutic approach, all can reduce the degree of a systematic review and at times makes it fall into a literature review.

Data collection

An integral element in systematic review is scientific literature, due to the limitations in physical access to latest publications and journals, the electronic database provided by Novia University of Applied Sciences library was selected as the main source of data collection, while few books have been used mostly in theoretical framework and methodology which are cited in the references. CINAHL with full text was chosen above all other available databases in health care field, as it is one of the main databases in care field (Polit & Beck, 2019, p.111), *records sought* are *accurately indexed*, *good source of primary studies for qualitative evidence syntheses* (Wright, Golder, & Lewis-Light, 2015), and t*o perform a quality bibliographic search for a systematic review on nursing topics, CINAHL is an essential databases for consultation to maximize the accuracy of the search* (Subirana, Solá, Garcia, Gich, & Urrútia, 2005).

Cinahl as database has a user-friendly interface with useful criteria which made the search to come to more accurate hits relevant to the searched subject, in addition it has access to Medline database. The limitation criteria of clinical queries made the search hits more specific to the need of the researcher, high sensitivity, high specificity, and best balance were among the options, leading to considering quantitative, considering qualitative, and both approaches. The other advantage of database Cinahl was the combination of different terms or phrases leading to same or similar meaning which could be selected all together, this would made the number of search for similar key words less, the cluster of "clinical decision making, clinical decision-making, clinical judgment" and "midwifery, midwife, midwives" were among them.

After acquainting with Cinahl and days of trial and error to have a better search hit matches, finally on 21.09.2019 with keywords of "clinical decision making, clinical decision-making, clinical judgment" and "midwifery, midwife, midwives", Jan 2015 - Dec 2019 (when I put September or October 2019, the number of hits were not including 5 articles, but with Dec 2019 I could have them:), English language, and Qualitative high specificity the number of hits were 471 articles. Options like peer review were already a default of the search as activating or deactivating it didn't change the number of hits. There were 6 duplicates, 84 not available, 80 had either mothers´ viewpoint solely or mutual points of mothers and midwives (shared decision making), 71 considered irrelevant to the searched subject for example discussing public policy or auxiliary midwifery, leading the hits to 230.

Though in the first screening the abstracts were read, in the second screening of 230 articles abstracts and part of the results were read again, focusing on the method, research participants, relevancy to the question of the study and the theoretical framework. As a result 104 articles were selected for the study. The rest of the articles which were not used in the result section (126 articles) were considered to be reviewed as the background material of this study. They were mostly done with mixed method or quantitative, literature review, scoping review, having CDM concept in a multidisciplinary team of gynecologist, nurse, and nurse-midwife.

While reading the articles, I was considering the study question along with the Benner’s theory of skill acquisition, which can be traced back in the work skill, proficiency and competence in keywords of articles and their results. In articles used both for background and result, the participants: midwives, nurses and obstetricians were educated within their field of practice. The studies were done in different countries and no geographical selection was applied to the choice of articles.

All the hits’ title and citation were copied to an Excel sheet with the title indicating background, result, not available, mother/midwife or both, irrelevant; this made the following screening easier as I would just copy the selected articles title to another sheet in every screening. Having the citation and name in Excel made the presentation of research process, article charts and referencing easier. The process of article selection was primary reading the abstract, if selected (based on the relevance to concept of study, methodology and presentation of findings), second and third screening were mainly on re-reading the abstract and reading the results, discussion and conclusions. The main sources of data in both background and result section were the results and conclusions. During the reading phase, I highlighted the parts that I could use later in analysis, at times I would take notes having an initial categorization, though later it would have totally changed pertaining the other emerging themes.

In the study’s result section abstract and results (in case the process of deciding whether they should be included or excluded), of the 104 articles selected were read again. From the second screening 50 articles were selected, and final screening led to 19 articles. The process of article selection is presented by Prisma 2009 Flow diagram, figure 2: process of article selection. The articles were organized alphabetically and letters A-S were defined in order to make the referencing easier and faster. Both background and result articles up to this point were revised similarly, the difference of analysis falls into the approach of their content analysis which will be explained particularly in the next section.

In the background 126 articles were reviewed, reading mainly the abstract, in the first screening 44 articles, second screening 31 and final screening 23 were selected relating to the closeness to main concept of the research question The omitted articles were discussing other concepts of maternity care and not pointing to the decision making process. The final selection of articles were read few times while being highlighted by marker, the selected areas, usually sentences copied to an Excel cell with the number of article 1-19, considering that articles were organized alphabetically and each got a number to make the access of referral easier. Number of selected articles had literature review as their

methodology, scanning through the references and list of articles used, I made sure that none of those articles was being used in my result section.

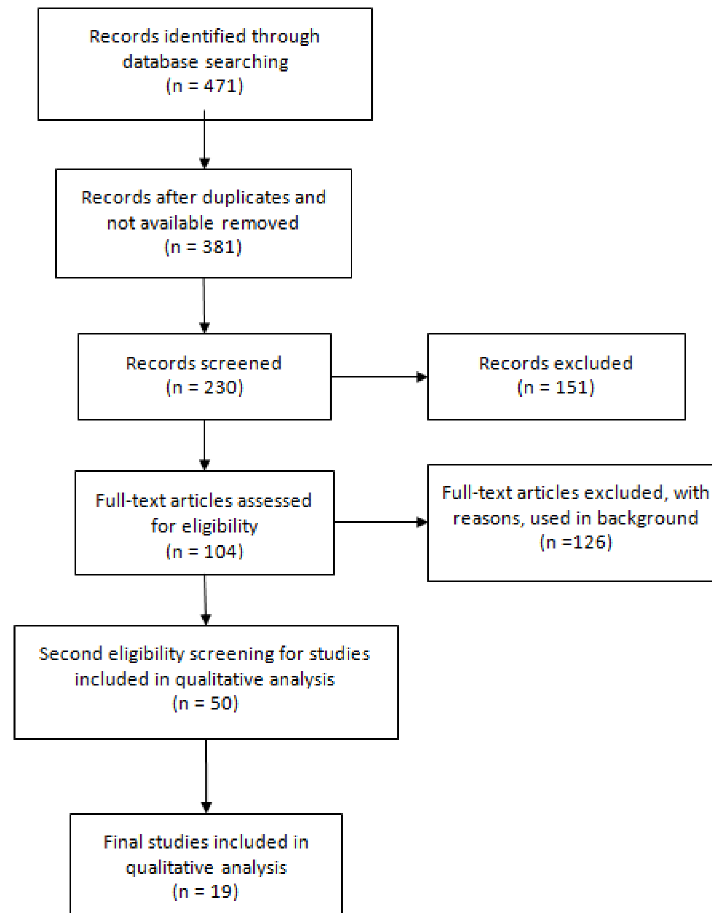

Figure 5-1: Process of article selection. Adopted from Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009).

Data analysis

In background section, the collected data in Excel were printed, highlighting the main subject(s) with a marker (the first clustering attempt), and cut into blocks of cells containing the marked sentence with the number of the article. All these blocks were placed on a surface, with an ongoing reading and clustering according to the frequency of occurrence of a theme leading to 3 main categories, the term category is used in this section as the classification of findings were based on the repetition on similar concepts and not the analysis of them.

Through the review and categorizing of the collected data in the background section, concept of normal birth, maternity care determinants, and role of organization in maternity care were the main categories that emerged. The categories presented in the background section are derived from the manifest content analysis, focusing on the occurrence of the themes, their similarities and differences.

Selected articles for result selection had the similar arrangement to background section, highlighted sentences copied to Excel cells aligning with the letters given to articles, with an exception that the blocks got placed under more general themes in concept of clinical decision making in midwifery. The process of locating the result blocks under the right heading and holding objectivity was the hardest part of this study as I had the mapping of background in my mind and constantly thinking whether I was clustering certain block under right theme or is it due to the presence of background classification.

Continuous reading, open coding, creating/re-creating categorization and mapping the categories were the main attempts on this section. Having a mind map of themes helped me to have a focus on the inductive latent content analysis, trying to bring the subthemes under a broader theme while fusing and analyzing them in order to understand the underlying meaning behind the meaning units, nevertheless the manifest content analysis was the start point of clarification giving a quick screening ability of the distinct themes. Table 2 is an example of the process of reaching to an interpretation (category) in the findings of the study.

Meaning unit	summarized meaning unit	Interpretation
Vaginal breech delivery was perceived by midwives to de-normalise the birthing process and to cause complications. As a result, midwives favoured caesarean over vaginal breech delivery (O)	Birth is not normal	Brith as risk factor
The midwives appeared to have a lower threshold for escalating a woman's care away from the Delivery Suite if the neonate had already been separated from her (S)	Seeing brith as risk	
Some risk management strategies employed by the hospital, for example, increasing surveillance, were in excess of management mandated by policies and guidelines, and appear to be driven by a quest to minimise possible risk. (L)	Preventive measures	
The miwvies described the dilemma of whether or not to wait for progress and for some, tiredness was a factor in the decision to transfer (J)	Risk of delay	
Expressions of ambiguity were evident as the interviews progressed; though oxytocin was a useful tool to prevent prolonged labour the risks involved were not small. (R)	Seeing possible consequences	

Table 5-2: Examples of meaning unit, summarized meaning unit and interpretation. Adopted from Graneheim and Lundman (2004).

Ethical consideration

The Finnish Advisory Board on Research Integrity (TENK) (2019, p.29) considers responsible conduct of research (RCR) as an integral part of integrity of a research, decisions whether a study is trustworthy. This study followed the premises of RCR in TENK (2012), Ethical recommendations for thesis writing at universities of applied sciences by Rectors' Conference of Finnish Universities of Applied Sciences (Arene) (2017), and Ethical guidelines for thesis work: student's checklist provided by Arene. According to Arene (2017, p.3) ethical recommendations *promote responsible conduct of research, prevent deceit in research and for its own part, to enhance the quality of theses*.

Following the student's checklist: the study has no conflicts of interest. The study involved no animals or harmed any human. The study units of this thesis were articles and books and following the TENK and Arene guidelines I have tried to keep the integrity and trustworthiness of the study by citations and referencing of the ideas and concepts in this

thesis. The introduction part of this thesis is the summary of my previous work done in nursing degree, therefore the reference is given under Elmira Adibpay; considering the fact that it owes the credit to the works' of authors I have used in that degree program, while I kept the similar ethical approach respectively in this study. I tried meticulously to write the thesis in a competent manner, by following triangulation according the availability of resources and time constraints, and informing my supervisor about the possible needs and support.

6 Presentation of results

The review and analysis of 19 selected articles for the result section (selection criteria is explained in detail in the data collection), led to 3 main categories of midwives' knowledge, midwives' principles, and organization setting, along with the theme of "mother's role in decision making" as the core concept of clinical judgment. The theme of mother's role in decision making could be viewed in all articles, as the mothers are giving justification to the practice of midwifery. Midwives' knowledge is shaped through education and experience, which the latter is divided into senior and junior midwife and competence and confidence. Concept of good care and decision making characteristics illuminate the principles of midwifery. Organization setting is defining the importance and effect of care culture and environment on midwives' judgments. The presentation of results could be followed in figure 3.

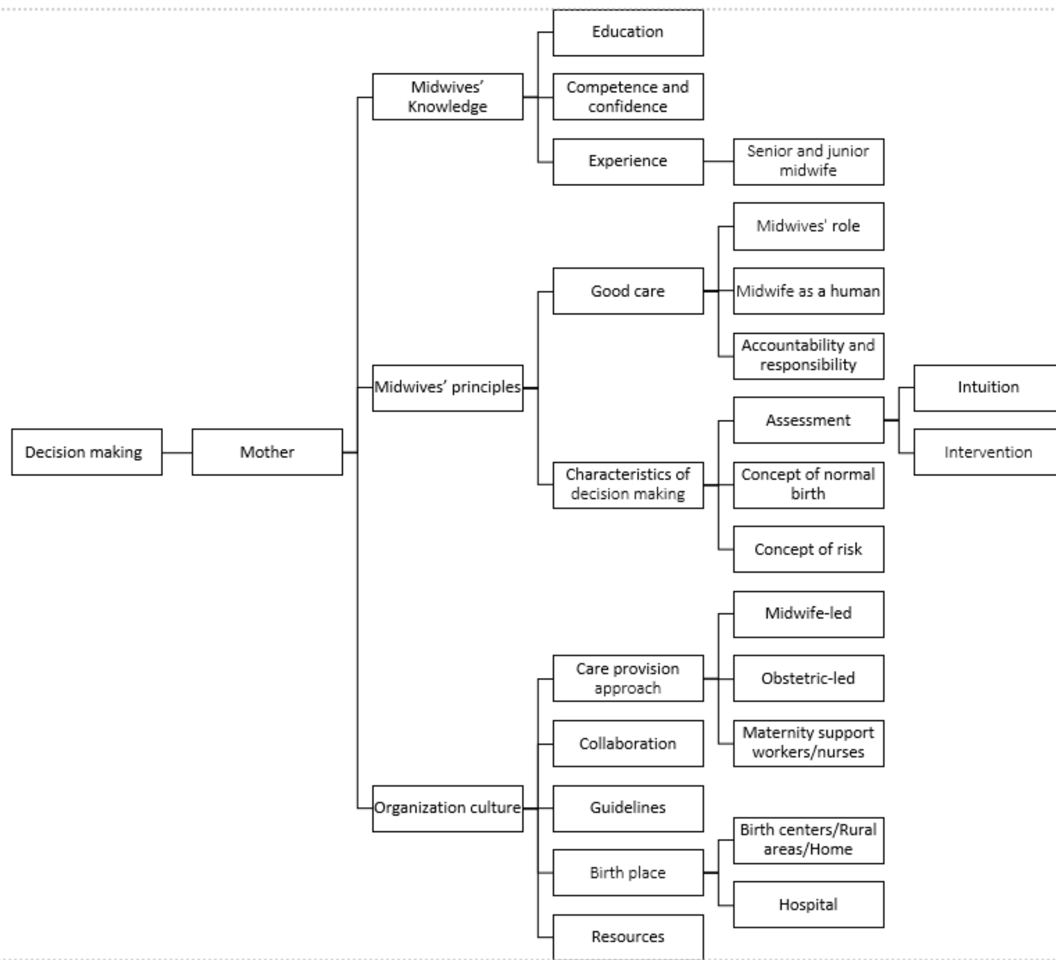

Figure 6-1: Mind map of results

Mother's role in decision making

In the presentation of results, theme of mother was considered as both the assistant and the core element in decision making process of birth: core element as the process start and begins with the presence of mother and the mother's desires and wishes are assisting or affecting midwives in decision making. "Pregnant women, women, and mother" (A, B, D, F, H, L, O, and R) followed by the attributions of "empowerment, autonomy, knowledge" were the phrases used to identify the role of mothers in DM. In most of the articles there were accounts of autonomy and women's wishes and choices, still there were opposing concepts in the autonomy of mother over birth process.

Almost all midwives interviewed in the reviewed articles ascertain the importance of mothers' and partners' participation in the decisions and shared decision making in order to empower women in the physiological birth (B, D, F, H, and R). Contrary to this concept there were "women are rarely offered the choice of a vaginal breech birth (VBB)" (O), "pregnant women could be blamed if they did not accept recommendations" (A), restrictions of women's autonomy by repeated "ultrasound examination" (A), and "women were scared into having a caesarean" (O). Giving the chance to mother and her partner to make an informed choice empowers their vision and confidence of becoming parents (A

and H), and have an "impact on rates of normal birth and interventions" (L) for example less perennial trauma (F).

6.1 Midwives' Knowledge

Knowledge is considered as a "leading factor" (E) and "critical" (J) in midwives' decision making, leading to "awareness" (E) and empowerment of both women (H) and themselves. "Knowledge" (A, E, J, O, and Q) and "familiarity" (S) assist the midwives' in identification of normality- abnormality and interventions accordingly in complicated cases of women with morbidity (S), mechanism of breech birth (O), and vasa praevia (Q). Knowledge is embedded through "education, training, findings from research and guidelines" (E), thus it can be traced in the "maternity system" (Q) and its impact on "childbirth and women's health" (E).

Even though the salience of knowledge is indisputable, "lack of knowledge" (Q) was the point mentioned in few articles which can be highlighted by "none of the participants mentioned they read research articles themselves" (E) and "inadequate attention from clinicians and researches" (Q), referring to the need for more research (E). Since education, competence and confidence, and experience are the projection of knowledge, they are categorized as subthemes of midwives' knowledge.

Education

"Education, training, and practice-based learning" (A, E, F, I, K, L, M, P, Q, and S) were the common phrase(s) repeated in many of the reviewed articles referring to influence of midwifery education in decision making concept (E). It is a general term covering the pre-registration midwifery education, statutory training provided by workplace, continuing professional development, and ongoing courses on scoring systems, devices, and assessment (Q, O, M, A, and I). Training enables the midwives to provide "safe quality care for women" (Q) and their children, which can be traced in the following examples:

- Provision of ethical and safe care for women after post abortion (p)
- Care of high-risk mother and child (S)

  Quality antenatal care is early detection of abnormality and preventive measures (L and A)

Fortifying the concept of education, many articles reiterated the need for extra training and education which would prevent many unfavorable outcomes as in antenatal screening, intervene by early detection of risk factors in the entire process of pregnancy, and execution of sound decisions (A, O, Q, S, L, M, and I).

Experience

Experience and clinical expertise (C, E, G, F, H, O, R, and S) were among the factors assisting the midwives' clinical judgments and in most articles were accompanied by

competency and skills. Experience either positive or negative plays an important role in "good outcomes for mother and infant" or seeing a vaginal breech birth as a risk having experienced the perinatal death (O). It can lead to better judgments, interventions or seeing birth as a normal process (E, O, and H) as the midwife can predict the implication of their choices through experience (E).

Experience is the moments such as when an experienced midwife can see the labor is about to happen by seeing the mother's "appearance, verbal and non-verbal behavior" (C), would preserve perineum due to the heard and seen complications for the mother (F), and her long experience of labor would lead and assist the mother in childbearing (R). In the reviewed articles there was a sense of division between senior and junior midwives which was categorized under experience.

Senior and junior midwife
Senior midwives were characterized by the years of experience (E), having skill mix – acquired through experience and competency (S), intuition (E), and being a "source of practice-based learning" (F) as they assist junior midwives in the process of decision making in the collaborative setting. Experienced midwives are becoming "entrenched in traditional practices" so there would be no room left for progress and progressive approaches (E).

While junior midwives are "newly qualified" and would like to show more activity and progress in the labor, due to the pressure they feel from senior midwives (R). Although they are skilled, yet they do not have the confidence and experience in risk identification (L and K), thus they would raise more unnecessary referral (H) and less inclined in seeing "full scope of physiology in childbirth" (E).

Competence and confidence
"Competence, competent, expert, expertise, professionalism, ability, skills, (D, S, O, F, G, F, E, C, and P) were all pointing to the ability which is derived from education and knowledge, hence empowered by experience and confidence. Skills and ability of the midwives enable them to "assess labor progress" and detect the details (C), thus having "better judgments" (E) due to the fact that they have the ability to foresee the "implications of their choices" (E).

Competency is a crucial factor in midwives' clinical decision leading to either performing or restraining an intervention:

- Becoming considerate in performing episiotomy and preserving perineum (F)
- Not seeing vaginal breech birth as a limiting choice (O)
- Competency in care of women in late termination of pregnancy (G)
- Provision of care to women needing invasive monitoring (S)

Confidence (H, E, D, P, and Q) is another element associated with competence leading to better care by midwives. Years of practice (E), and experience (E, H, and O) have an effect on the confidence of the midwives' process of decision making and their performance

which can be seen in “if the admission CTG was normal, the midwives felt confident that the woman still could be considered as low-risk” (8).

6.2 Midwives’ principles

Principles of midwifery practice are divided to good care and characteristics of decision making. Definition of good care gives meaning to midwives’ role and their accountability and responsibility in the care provision to mother and her child. Along with the ethics of midwifery practice, midwife’s well-being, their emotion and experiences should not be neglected. Characteristics of decision making are defining the importance of midwifery assessment and its impact on safety of mother and child. Intuition assists the midwives in their understanding of progress of pregnancy and childbearing, while intervention is the tool of implementation of the mentioned intuitive assessment. Concept of normal birth and risk are defined under decision making characteristics, defining the care concept of midwives governing their clinical judgments thus care and interventions.

Good care

Concept of “good care, model of care, best care model, optimum care, safety of mother and child, and good birth experience” (A, B, G, R, C, E, H, I, and J) is considered as one of main principle of midwifery as it is based on the philosophy of care (H). In the reviewed articles, a good care model has the following characteristics:

- one-to-one midwifery care (B, H and R)
- Priority of maternal and baby’s health (B, E, H, I, and J)
- Mother’s and her partner’s autonomy and decisions are respected (shared decision making) (G, R, D and C)

Optimum care is assisting and providing care for mothers, her partner and baby in the process childbearing, creating an ambience of support and safety, giving the mother right to determination and enriching the birth experience (C, R, G and H). Midwives’ role, midwife as a human, and accountability and responsibility are classified under the theme of good care as they are enriching its meaning.

Midwives’ role
Midwives’ role is defined as “providing care - assessment” (C, R, B, Q, and H), “supporting women and respecting their autonomy” (A, D, B, Q, B, R, and L), “promoting physiological childbirth (A, C, D, and H), “informing or facilitating information provided to expectant parents” (A, Q, and O), and “preventing further deterioration” (H and S). Midwives are supposed to have a humanistic approach (C) empowered by “salutogenic thinking” (C), “clinical reasoning and cognitive process” (I and C), and anticipating the implications of choices (H and E) in order to assess (C), prioritize, intervene, and reassess again.

Midwives are assisting the women in normal birth and also providing psychological support (A and G) during whole pregnancy following the fundamental principle of

midwifery which is “good birth experience” (H). They are next to women, from the beginning of pregnancy in antenatal care (A), during the childbearing: encouraging them to trust in normal birth (D), monitoring and assessing the labor progress (C), preventing and predicting the risks (H), in times assisting the obstetrics, and, finally provide postpartum care both in hospital and during home visits.

Midwife as a profession and a person

Midwives’ feelings and personality are among other factors affecting decisions in maternity care which are grouped under midwife as a human. Feeling of guilt, “personalized criteria”(B), “tolerance, impatience” (R), “Pride” (P), “struggle to find the balance between empathy, sharing and suffering” (G), “intense” feelings (G), “midwife’s perception of woman’s pain” (C), “conflicting personal morality and professional duty” (P), “anxious” (D), “insecurity” (H), autonomy (B and E), and losing their autonomy (D), “feeling of inadequacy” (D), “satisfying work” (A), and “internal crisis” (P) were among the factors indicating the feelings of midwives as a human.

The above-mentioned emotions consciously or unconsciously can affect the decisions thus the outcome. Feeling proud or satisfied leads to care of women in post abortion care in a culture that abortion is a taboo (P) or management of adverse pregnancy condition by performing ultrasound examination (A). Insecurity, feeling of guilt, and lack of tolerance can lead to accelerating a labor by oxytocin drop (R), unnecessary referral for caesarian section (H), being less with women as the midwife cannot provide one to one labor care due to the culture of the ward (B), changing the birth position to supine to make it easier in cases of insecurity (D), or midwives’ “physical limitations” can prevent them from providing different birth options to mothers (P).

Accountability and responsibility

Accountability and responsibility are the important aspects of midwives' principles and sound clinical judgments (E). Midwives take accountability for their decisions (D) also “for tasks undertaken by others” (M) this can be part of midwives’ characteristics, experience, and education or by a “disciplinary committee or an audit” (E). This is highlighted when the midwife takes a stance against the unnecessary interventions for the mother in “daring to stand up in a discussion with the obstetrician” (H and L) or feeling responsibility in saving the perineum (F). Accountability would be tangible when the midwife stands beside the woman who had late abortion in a setting in which abortion is taboo and is open to the “idea of liberalizing the law” of abortion (P) and the feeling of admitting that the mother “did not spontaneously ask for labor augmentation” (R).

Characteristics of decision making

Decision making in midwifery can be characterized as a both gradual (H) and continuous (C) process to achieve the principles of midwifery practices “good care of mother and child” through continuous assessment and appraisal of situations and birth progress and interventions-treatments (C, S, K, and I). Clinical reasoning in midwifery can be explained through assessment, concept of normal birth, and concept of risk.

Assessment

Assessment of labor progress and status is a gradual mind shift (H) derived from combinations of factors (F) through the cycle of “assessment, evaluation and action” (C and I). Clinical reasoning (I), assessment (S and C), clinical decision making (I and C), reappraising (K), diagnosis (N and R), realization (J), judgments (C and K) were ascertaining to the process of understanding about women’s labor status. The process of realization of labor progress is first “early formulation, initial diagnosis” (C and N) and “discerning differences and deviations” (N, I, and C), second “systematic information collection, interpretation and synthesis of data” (C, H, and S), third “intervention, adjustment and predictions” (C, H and S), and finally “reappraising the assessment, interventions and treatment options” (S, C, K and I). “Systematic information collection, interpretation and synthesis of data” (C, H, and S) is facilitated by cue acquisition (C) and pattern matching (I).

Intuition

“Intuition, intuitive knowledge, gut feeling, knowing, grey area, sense of discomfort and feeling unsafe” (K, I, E, and C) were indicating to a salient factor in the process of clinical decision making. Intuition is related to senior midwives’ (E) decisions based on “form of pattern” recognition (C), “network of stored knowledge” (C), and “cues, knowledge and previous clinical experience” (E). It is part of midwives’ “assessment/awareness” (I) and midwifery “autonomy” (K) which deals beyond the need for engagement in “protocols and recording of observations” (K).

Intervention

Part of midwifery assessment is based on the intervention measures and tools that a midwife would apply to assist the process of clinical judgement. “Pelvic examination” (N), “surveillance, careful observation and sophisticated testing” (L and R), “Partogram and partograph” (M, N and C), “CTG monitoring” (R, S and D) and “ultrasound” (A and S) were among the interventions midwives would perform to help women in the birth process. These interventions could lead to “care escalation” (S), “termination of pregnancy” (A), triaging mother to low or high risk (H and R), and “overview the labor progress” (N).

Concept of normal birth

To see birth as a normal phenomenon is one of the factors affecting decision making in maternity care. Normal birth (R, L, O, H, D, K, C, and B) and considering birth as a physiological process is a concept defining the midwife and maternity unit/system's view toward childbearing (C, B and L), provision of care and interventions. The midwives who have a trust in normal birth and vaginal breech birth in healthy-low risk mothers would promote and support it, even where it is seen as “outside of the norm” (L, C, H, and O).

Some midwives view normality as “minimum interventions” (B, R and H), “protecting women from early interventions” (L), and “guidance, support and supervision” (H and L), whereas others may consider maternity interventions and “clinical observations” (B and K) as “integral part of care” (R). Normal birth is best practiced in the “absence of complications” (D), “low risk mother” (H), ambience of “trust” between mother and midwife (L) and considering birth as a physiological phenomenon.

Concept of risk
Considering birth as risk is a view that the midwife or the maternity system applies in their process of decision making when caring for a pregnant woman in her childbearing (L, M, S, O, J, R, and A). Risk concept is developed from maternity care principle being responsible and accountable over the “dilemma of whether or not to wait for progress” of birth (J) or safety of mother and her child in considering “risk for physiological deterioration” (S).

Midwives' concept of birth as risk would be detectable in having “lower threshold for escalating a woman’s care” (S), considering the ultrasound examination as “monitoring adverse pregnancy conditions” (A), seeing vaginal breech birth as a “complications ” (O), and “favoring caesarian section in first indication of distress” (O and L). Maternity systems’ view of risk in childbearing can be traced in guidelines and policies promoting increase of surveillance and monitoring (L) and Obstetric High Dependency Care criteria (S).

6.3 Organization’s setting

The midwives’ role and practice is affected greatly by the organization’s culture and atmosphere (B, D, P, L, R, S, O, F, K, E, A, G, and N). “Work environment and structural challenges” (D, P, B, G, and S), peer pressure and obstetric-led approaches (D, R, F, A, O, and E), and “traditional culture and resistance to change” (L and N) are part of the main elements impacting midwifery practice during women’s pregnancy. The organization’s approach can make the concept of birth as a risk factor (L, R, and B), promote episiotomy to protect perineum (F), or hasten the normal process of childbearing to either “get the job finished, due to the peer pressure or workload” (E and R).

Care provision approach

Different approaches in provision of maternity care lead to different outcomes. Approach in care provision is characterizing the philosophy of care behind the care givers decisions. Maternity care can be delivered by a multidisciplinary team according to the progress and process of delivery. Care provision approach is divided to midwife-led and obstetric-led. Midwife-led approach has the dominance of midwifery practice and care, seeing birth as a normal process and midwives’ role as a facilitator. Midwives could have assistance of midwifery support workers, maternity care assistants and nurses and this described under the theme of Midwife-led. Obstetric-led care is describing the ruling culture of maternity unit mostly in hospitals, either caring mothers with the need of intensive care or normal birth with the intensive surveillance.

Midwife-led
Home delivery, birth centers and small rural maternity units mostly are following the approach of physiological birth having midwives as a facilitator with the notion of continuity of care through “pregnancy, labor, and early postpartum” (L, E, H, and K). It is characterized by “promoting physiological birth” (D and E) even in vaginal breech birth

(O), “risk identification” in case of pathological symptoms (E) and ensuring calm relaxing environment for the delivery (B). This model is empowering the women (H) and giving midwives the feeling of confidence (L), competence (D and S), and satisfaction (P).

Maternity support workers and nurses

Provision of care to mothers can be assisted by midwifery support workers (MSWs) (K), unregistered support staff (M), maternity care assistants (MCAs) (M), and nurses (S). Due to load pressure of work on midwives in some hospital settings, part of maternity observations like calculating the modified early obstetric warning score (MEOW) was delegated to MSWs or MCAs (K and M). In case of provision of care to mothers with morbidity or obstetric high dependency care (OHDC) the care of mother and child would be delegated to nurses who had experiences in caring for patients with health problems (S). It was argued that MCAs’ and MSWs’ education and training were not compatible to the degree of responsibility needed for care of pregnant mother and her child (K), while in OHDC by nurses, midwives’ autonomy and skill was questioned (S).

Obstetric-led

Obstetric led maternity unit has the dominance of medical approach and interventions which has salient impact on midwives’ clinical judgments and practice, leading to the pressure that midwives would follow the physiology of normal birth with the “obstetric frameworks” (B, D, and E). Midwives’ role in obstetric care model was defined mostly by midwives assisting the obstetricians or involved in antenatal and postnatal care (L and D). It is characterized by difference of response in escalated care due to involvement of variety of medical staff (K), excessive clinical measurements and observations (K), shorter continuity of care and almost lack of privacy for both mother and midwife (E and O), less opportunity for negotiation over cues of physiological birth (K, D, and H) or respect toward normal birth (E).

Collaboration

The atmosphere of collaboration have a great impact in midwives’ clinical decision making (R, S and A) and safety of mother and child (H). The support and collaboration can be within the midwives (hospital, rural and community midwives), midwife-obstetrics, midwife-mother, and midwife and other care personnel and units (E). Organization setting and culture are part of factors affecting the understanding of collaboration and support. Collaboration can be realized in the culture of support (O), ensuring safety of mother and child (H), “enhancing the results of medical management related to pregnancy complications” (A), respect for normal birth (R and D), and “knowledge sharing” (D).

Guidelines

“Protocols, guidelines, LOI (list of obstetrics indication), Modified early obstetric warning score (MEOWS), procedures, policy, and charts (E, B, M, G, Q, S, K) can be either supportive (E), or limitive (O) in the process of clinical decision making for midwives (S).

Guidelines provide support for midwives in “uncertain situations” (E) to identify risk factors by “reducing maternal mortality and morbidity” (E and M) and procedures for late termination of pregnancy (G). However, it can restrain midwives’ and mothers’ autonomy (E and O) leading to less space for “variation in physiological birth or vaginal breech birth” (E and O) or confusion (S and Q). Lack or presence of ambiguous guidelines was the main causes of confusion among midwives (Q and K).

Birthplace

Birth environment and its physical characteristics are part of the factors affecting both midwives’ care approach and mothers’ feeling during the childbearing (E, D, L and B). Birthplace was characterized as fulfilling “feeling relaxation” (B), “dim lighting and quiet space” (L and H), and “intimate and supporting space” (L). It was considered that birthing room characteristics enables a closer relationship between mother and midwife (B and L) and facilitate normal birth (L and H) leading to less interventions for example less pain-relief medication (L). Birthplace is divided to “Birth centers, rural areas and home” and “hospital” considering the physical differences and feeling of trust and comfort. Both settings follow the goal of “protection and promotion of physiological birth” and the safety of mother and child (D).

Birth centers, rural areas and home

Birth locations like birth centers, rural setting and home are considered as part of birth location which has a salient impact on the process of midwives’ decision making. Home was considered a place which makes both midwife and mother feel relaxed, though the drawback could be emergency backup (B). Birth centers and small maternity units with the goal of physiological birth (H and D) were designed mostly in a way that mothers feel the environment of relaxation with the advantage of accessibility to emergency care (B, H, and D). Another scope of birthplace was the rural areas which can both cover home and birth centers or small maternity unit delivery having advantage of relaxation and disadvantage of distance to emergency medical support (B, D, and J).

Hospital

Hospital setting was characterized by “hierarchy” (D), “earlier referral” (E), “consulting approach” (E), “less autonomy and independence for midwives – less control over environment” (D, E, and O), “seeing birth as risk” (L), but “assurance of access to operation theatres” (O). Hospitals are trying to apply new strategies “for achieving privacy and ambience” (B), realized by “dimming the lights” and change in the setting of birth room in hospital (B) or providing mothers with the option of choosing their birthplace - home or hospital- (H) to reduce the pressure and stress for mothers. Besides the effect of “stressful hospital environment” on midwives clinical decision making (B), it affects mothers and their experiences as well as they would easily ask for pain relief medication (E) and excessive surveillance can lead to stress and less confidence and trust in physiology of normal birth (L).

Resources

Workload (S, B, K, R, and M), shortage of staff (S, N, and K), and delay of medical availability and referral time (N, H, J, P, and S) are part of environmental factors categorized under resources which could affect the delivery and quality care to mother and her child. Workload has a great impact on midwives' decision making process (S), preventing midwives from "sitting quietly with women and creating calm and relaxing environment and providing effective care" (B and M), affecting their "priority given to maternal observations" (K), and forcing start of labor (R).

Shortage of staff can lead to escalation of any deviation to a risk pregnancy (S), hindering the prompt action (N), or affecting the quality of maternal observations (K). Medical or referral availability are among the resources factors that can affect midwives' process of decision making. Number of beds (S and H) and living in rural areas and the transfer time (J, S and N) can lead to challenging decisions for midwives: start of labor and seeing birth as a risk.

Summary

Decision making is a complex process affiliated to many elements like midwives' knowledge, experience, and culture of the practicing organization making them closely interconnected such that definition of one of them demands the presence of others. Mother and her child are the cause of midwifery practice and their caring process demands the clear definition of midwifery principles. Decision making is a cycle of assessment, action and interventions, and reassessment, this process is facilitated by midwives knowledge and education. Assessment and interventions during labor progress and pregnancy are fundamentals of midwifery practice; it can be impacted by organization's setting and culture, guidelines and resources.

The setting of midwifery practice, birthplace, the care approach of midwife-led or obstetric-led defines the concept of birth either as normal or risk, thus the interventions are applied accordingly. Midwives as a human are under pressure from the organization, culture of the ward, and difficulty of the job in case of negative experiences to balance of their work and life, and their emotions and moral. Good care would not be realized without collaboration and cooperation of multidisciplinary teams, research based guidelines and continuous education and training.

7 Discussion

To answer "what affects midwives' clinical decision-making?", the question of this study, 19 articles were selected with limitations of "clinical decision making, clinical decision-making, clinical judgment" and "midwifery, midwife, midwives", Jan 2015 – Dec 2019, and English as language using Cinahl database. The articles were analyzed using systematic review - content analysis, leading to emergence of 3 main categories of Midwives' knowledge, Midwives' principles, and Organizations' setting, along with

Mother's role in decision making as the ruling and assisting theme defining the principles of clinical decision making in midwifery.

Having Benner's (1984) model of skill acquisition in nursing as the theoretical framework and background driven from the review of 23 articles in the field of CDM in maternity care, in this section I will discuss analysis of findings of the study with the framework and background. Table 2 depicts the presence (+) or absence (-) of found coding and categories.

Concept	Background	Result
Mother' role	+ More detailed	+
Knowledge	+	+
Communication skills	+	-
Accountability	+ Under knowledge	+ Under principles
Experience	+	+ Senior and Junior midwives
Midwife as a person	+	+ Personal characteristics
Midwives' role and clinical responsibilities	+	+
Assessment	+	+
Interventions and monitoring	+	+
Postpartum and prepartum care	+	-
Documentation	+	-
Intuition	-	+
Concept of normal birth	+	+
Concept of risk	+	+
Fear of blame	+	-
Environment and organizations' setting	+	+
Care provision approach and culture	+	+
Midwife-led and Obstetric-led	-	+
Guidelines	+	+
Resources	+	+
Collaboration	+	+
Birthplace physical aspect	-	+
rural areas	+	+
Hospital as birthplace	+ Not so distinct	+

Table 7-1: Matrix of discussion.

Interestingly almost most of the found themes in results were in connection to the background. "Mother" was a theme that was found in parts indicating their role in decision making or how their wishes have not been granted, background sections provided a more detailed aspects of mother's role like characteristics and mother-midwife relationship, while in results the general concept of mothers were more emphasized.

"Knowledge" was one of the most discussed concepts in both sections, illuminating its weight in CDM process. In the result section there were many meaning units denoting the identification of knowledge: Education and Experience, while confidence, competency and accountability could be considered derivatives of knowledge or components of it, making the classification complicated. In background section communication skills was a subtheme that was developed under the process of learning, while it was not mentioned in the reviewed articles of result section.

"Senior and junior midwife" was a subtheme in results indicating the importance of years of practice in experience and level of expertise; nevertheless this distinct difference was

not mentioned in the background. “Accountability and responsibility” were developed under knowledge growth in background, though it was viewed as the principles of midwifery care and concept of good care in results.

The concept of seeing midwives’ individuality was a theme present in both parts. Midwives’ role and clinical responsibilities, assisted by “assessment”, “intervention” were also in alliance to similar presentation in both sections. Documentation was considered to be an assistive element in midwives’ clinical responsibilities, which was not found in result section. “Care provision before and after delivery” are salient part of clinical assessment in maternity care and this theme was not found in the result section. Whereas “intuition” found in the result, was considered part of assessment measures, not being mentioned in the background.

Normal birth and considering birth as a risk factor was reiterated in both divisions, while “fear of blame” was not stated in the result findings. “Environment” and “organizations’ setting” in both units were emphasizing the effect of culture and atmosphere in maternity care. The result findings provided a more detailed picture of care provision through midwife-led and obstetric-led approaches, although “institution culture” in background was indicating the whole concept of difference in care approach.

“Guidelines”, “Collaboration” and “Resources” were covered in both sections. “Birthplace” was an interesting subtheme emerged in results indicating the significance of childbearing place in both decisions of midwives and mothers’ need, providing the division of care in more comfortable atmosphere like home, rural areas and birth centers, and hospital. This division was not mentioned in the background, though the effect of regional and peripheral health service was viewed as affecting the decision making.

The process of maternity care provided by midwives and other assisting healthcare personnel is evolving over framework of skill acquisition in nursing presented by Benner (1984). Midwives’ knowledge is developing through education and practice (experience), clearly termed by senior and junior midwife in the result section which has direct impact on their competency and confidence in performing assessment and providing good care to mother and her child. Considering the pressure or cooperation of organization setting, the expert midwives will keep the principles of midwifery insusceptible to the environment (2).

8 Trustworthiness

Trustworthiness is the core of every study: evaluating the integrity and rigor of a study (Polit & Beck, 2018, p.69; content analysis method was used in data extraction, 403) and reporting the process of analysis and the results (Elo & Kyngäs, 2007, p.112; Graneheim & Lundman, 2003, p.109). **Credibility , reliability, and validity** (Polit & Beck, 2018, p.69; Graneheim & Lundman, 2003, p.109; Vaismoradi, Turunen, & Bondas, 2013, p.403; Elo & Kyngäs, 2007, p.112; Gerrish & Lathlean, 2015, p.27), **triangulation** (Polit & Beck, 2018, p. 69; Gerrish & Lathlean, 2015, p.473), **transferability and conformability** (Polit & Beck, 2018, pp.72, 296; Graneheim & Lundman, 2003, p.110; Elo & Kyngäs, 2007, p.112), **dependability** (Polit & Beck, 2018, p.296; Graneheim & Lundman, 2003, p.110),

and **authenticity** (Polit & Beck, 2018, p.296) are cornerstones of trustworthiness of a study.

Credibility defines whether the research method applied is reliable to the research question (Polit & Beck, 2018, pp.69, 295; Graneheim & Lundman, 2003, p.110), research measure were chosen *without bias or distortion* (Gerrish & Lathlean, 2015, p.27), and demonstration/categorization of results enables the reader to *follow the process and procedures* easily (Elo & Kyngäs, 2007, p.112; Graneheim & Lundman, 2003, p.110). Considering the question of this study: "what affects midwives' clinical decision-making?" the literature review method was adopted, due to the fact that the question's answer was explored through Cinahl database containing academic journal articles. Content analysis was selected to analyze the articles focusing on the findings, discussion and conclusions in alliance with the question and method of the study. Though criticism to qualitative research lacking *scientific rigor* (Vaismoradi, Turunen, & Bondas, 2013, p.403), *relatively low level of interpretation*, risk of neglecting a meaning unit or *missing context* in content analysis (Vaismoradi, Turunen, & Bondas, 2013, p.399), and *ambiguous or too extensive* research question (Elo & Kyngäs, 2007, p.114) still can affect the credibility of a study.

Triangulation is one of the criteria of credibility, it defines multiple resourcing (Polit & Beck, 2018, p.69) to have data for comparison regarding the reliability of a found claims (Gerrish & Lathlean, 2015, p.473), while conformability discussed the integrity of a study and resources through objectivity (Polit & Beck, 2018, p.296). Theoretical framework, methodology, and ethical consideration of this study have been reviewed by triangulation tool to have a stronger description and meaning, I tried to have the references from the most recent editions – selection criteria of availability in library and e-databases, and recommendations from the study supervisor; I analyzed articles based on the mentioned selection criteria in "data collection". During reading and selecting phase there were articles which were more distinct in their writing style, presentation of results, and elaboration of methodology which could have influenced choosing them over others. Selection of articles could have been influenced by subjectivity, the background section, and my previous study in nursing study, though I tried to have an objective approach analyzing and categorizing the themes and findings.

Communication skills, postpartum/prepartum care, documentation and fear of blame mentioned in the background were among the themes that the result of this study could not derive, which could have been otherwise if the not available research papers were considered in the review section of the result. The number of not available articles was 84, having been granted the permission to order them via Novia University of Applied Sciences library; it would have needed more time and resources beyond the thesis for bachelor of midwifery. The outcome of study could have been indicating different aspects of clinical judgment if ethics and ethical challenges were included in the search keywords.

Transferability and dependability discusses the clear documentation and description of all the measures taken in writing a study, *description of culture and context, selection and characteristics of participants, data collection and process of analysis (*Graneheim & Lundman, 2003, p.110; Polit & Beck, 2018, p.72) to enable further research using the same patterns to come to similar results (Polit & Beck, 2018, p.296). In data collection and data

analysis sections I explained the selection criteria, inclusion-exclusion factors, search words, use of method and reasons behind article selection, and categorization, further using the figures and article matrix, I tried to provide a better picture of research process. The process of data collection was through a period of time researching, reading, selecting, writing the notes, which the consistency of data collection (Graneheim & Lundman, 2003, p.110) could fall at risk.

Finally authenticity explains that a study has tried to hold unbiased approach in showing all the found results (Polit & Beck, 2018, p.296). Considering the constraints of time and availability of articles, my previous knowledge on clinical decision making, the critiques to content analysis and literature review the risk of inconsistency in selecting and analyzing the articles over the period writing, and chance of missing a meaning unit during the categorization of prominent themes, I followed ethical and trustworthiness guidelines in writing and presenting the results that I came across when analyzing the selected articles, nevertheless this study is subject to critiques.

9 Conclusion

Knowledge, principles of care and environment significantly contribute to the clinical decision making of midwives. Decision making is a complex process and its determinants are intertwined which makes defining of each involving the presence of others. Knowledge affects the principles of care, while environment affects the use of knowledge and how care is viewed. In the result of this study, communication skills, postpartum/prepartum care, documentation and fear of blame were not found. Intuition, midwife-led/obstetric-led care approach, and birthplace's effect were among the findings not occurred in the background section.

The number of studies regarding understanding of clinical decision making process is increasingly showing the need for identification of its determinant in order to provide good care for mother and her child, while considering the impact of environment and healthcare providers' background and being as an individual. This study is a basis for further research combining the ethics and ethical dilemma in decision making matrix, how intuition is regarded in CDM-midwifery practice, and the effect of birthplace on CDM.

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Appendix 1 Background: list of articles

	Title	Author/Year/Journal	Aim	Method	Result
1	A postgraduate Optimum Birth module to increase midwives' readiness to work in midwifery-led settings: A mixed-methods evaluation	Coates, R., Rocca, I. L., Olander, E., Ayers, S., & Salmon, D. (2019). Birth: Issues in Perinatal Care	This study evaluated a postgraduate-level midwifery module on Optimum Birth	Pre-module and post-module Questionnaires, Qualitative data collection included a final-day focus group	• Quantitative and qualitative data indicated that the module increased participants' self-reported skills, knowledge, and confidence in practicing Optimum Birth. • Qualitative data indicated ways in which midwives were implementing changes to promote Optimum Birth in their place of work. Attitudes were highly positive pre-module and post-module.
2	Am I covered?': an analysis of a national enquiry database on scope of practice.	Brady, A., Fealy, G., Casey, M., Hegarty, J., Kennedy, C., McNamara, M., … Rohde, D. (2015). Journal of Advanced Nursing	Analysis of a national database of enquiries to a professional body pertaining to the scope of nursing and midwifery practice.	Qualitative thematic analysis, The database of telephone enquiries	• Enquiries were concerned with three main areas: medication management, changing and evolving scope of practice and professional role boundaries. • The context was service developments, staff shortages and uncertainty about role expansion and professional accountability. • Other concerns related to expectations around responsibility and accountability for other support staff.
3	An Integrative Literature Review of the Factors That Contribute to Professional Nurses and Midwives Making Sound Clinical Decisions	Ham, W., Ricks, E. J., Rooyen, D., & Jordan, P. J. (2017). International Journal of Nursing Knowledge	To identify available literature concerning the factors that contribute to nurses and midwives making sound clinical decisions.	Integrative literature review.	• Thirty-eight articles revealed four main domains that influence nurses' and midwives' clinical decision making—nurses and midwives' personal characteristics, clinical experience; organizational factors, e.g., colleagues; patient characteristics , e.g., physical and clinical status; and environmental factors , e.g., time. • These four domains of factors combined influence sound clinical decision making in the context of nursing and midwifery.
4	Becoming a midwife: A survey study of midwifery alumni	Patterson, J., Mącznik, A. K., Miller, S., Kerkin, B., & Baddock, S. (2019). Women & Birth	To explore the experiences of our alumni midwives, ask how well they perceived their midwifery Programme had prepared	An online survey, quantitative Data: analysed using	• Forty-two alumni viewed becoming a midwife as a blend/combination of: (1) gaining the knowledge and practical skills required for the profession; (2) management skills in areas of running a business,

	Title	Author/Year/Journal	Aim	Method	Result
			them for beginning midwifery practice and to identify any curriculum changes, or postgraduate study topics, that would support the transition to midwifery practice.	descriptive statistics, and a general inductive approach, qualitative data in the comment boxes.	working with other people, navigating local procedures and processes effectively, and balancing work with personal life;(3) gaining confidence in one's competence, and (4) having support along the way.
5	Competencies and skill development in maternity care services in Victoria - A qualitative study.	Edward, K., Walpole, L., Lambert, G., Phillips, S., Galletti, A., Morrow, J., … Hiller, J. (2019). Nurse Education in Practice	To identify potential gaps or issues with continuing professional development in maternity services through consultations with key stakeholders and, in addition, to generate possible solutions or recommendations towards the development of a state wide continuing professional development program.	semi-structured interviews of a purposive sample, thematic analysis	• Four main themes (education, practitioner standards, programme monitoring and resources) were identified along with nine sub-themes. • Organisations need to offer explicit support for staff to access to continuing professional development. In addition, the qualifications of facilitators of continuing professional development and/or consumer education are recommended to go beyond education levels required for registration.
6	Conceptualising a model to guide nursing and midwifery in the community guided by an evidence review.	Leahy-Warren, P., Mulcahy, H., Benefield, L., Bradley, C., Coffey, A., Donohoe, A., … Walsh, J. (2017). BMC Nursing	To present a conceptual model informed by a scoping evidence review of the literature.	A scoping evidence review of the literature, Preferred Reporting Items for Systematic Reviews and Meta-Analysis	• The evidence was categorised into six broad areas and subsequently synthesised into four themes. These were not mutually exclusive: (1) Integrated and Collaborative Care; (2) Organisation and Delivery of Nursing and Midwifery Care in the Community; (3) Adjuncts to Nursing Care and (4) Overarching Conceptual Model.
7	Deliberate acquisition of competence in physiological breech birth: A grounded theory study.	Walker, S., Scamell, M., & Parker, P. (2018). Women & Birth	How do professionals develop competence and expertise in physiological breech birth?	semi-structured interviews, constructivist grounded analysis	• Among the participants in this research, the deliberate acquisition of competence in physiological breech birth included stages of affinity with physiological birth, critical awareness, intention, identity and responsibility. • Expert practitioners operating across local and national

	Title	Author/Year/Journal	Aim	Method	Result
					boundaries guided less experienced practitioners.
8	Evidence to inform education, training and supportive work environments for midwives involved in the care of women with female genital mutilation: A review of global experience.	Dawson, A., Turkmani, S., Fray, S., Nanayakkara, S., Varol, N., & Homer, C. (2015). Midwifery	To identify how midwives in low and middle income countries (LMIC) and high income countries (HIC) care for women with female genital mutilation (FGM), their perceived challenges and what professional development and workplace strategies might better support midwives to provide appropriate quality care.	Integrative review involving a narrative synthesis of the literature published between 2004 and 2014.	• A lack of technical knowledge and limited cultural competency was identified, as well as socio-cultural challenges in the abandonment process of the practice, particularly in LMIC settings. • Training in the area of FGM was limited. One study reported the outcomes of an education initiative that was found to be beneficial.
9	Fear, blame and transparency: Obstetric caregivers' rationales for high caesarean section rates in a low-resource setting.	Litorp, H., Mgaya, A., Mbekenga, C. K., Kidanto, H. L., Johnsdotter, S., & Essén, B. (2015). Social Science & Medicine	To explore obstetric caregivers' rationales for their hospital's CS rate to identify factors that might cause CS overuse.	22 semi-structured individual in-depth interviews and 2 focus group discussions, thematic analysis.	• All caregivers rationalized the high CS rate by referring to circumstances outside their control. • In private practice, some stated they were affected by the economic compensation for CS, while others argued that unnecessary CSs were due to maternal demand. • Residents often missed support from their senior colleagues when making decisions, and felt that midwives pushed them to perform CSs. • Many caregivers stated that their fear of blame from colleagues and management in case of poor outcomes made them advocate for, or perform, CSs on doubtful indications. • In order to lower CS rates, caregivers must acknowledge their roles as decision-makers, and strive to minimize unnecessary CSs. • Although auditing and transparency are important to improve patient safety, they must be used with sensitivity regarding any unintended or counterproductive effects they might have.
10	Graduate midwives'	Hauck, Y., Lewis, L., Kuliukas,	To explore midwives'	A retrospective	• No differences were found between graduate groups

	Title	Author/Year/Journal	Aim	Method	Result
	perception of their preparation and support in using evidence to advocate for women's choice: A Western Australian study	L., Butt, J., & Wood, J. (2016). Nurse Education in Practice	attitudes and utilisation of research and assertive communication in addition to perceptions of their educational preparation to advocate for women.	cohort study	using the Edmonton Research Orientation subscales, although findings suggest a positive view towards research. • Midwives were more likely to be assertive with their clinical colleagues than a midwifery manager or medical colleague when: expressing their opinions; saying no; allowing others to express their opinions; and making suggestions to others. • A qualitative phase with 15 midwives explored concepts around advocating for women. Four themes emerged: 'having the confidence to question', 'communication skills', work environment' and 'knowing the woman and what she wants'.
11	Healthcare providers' perspectives on labor monitoring in Nigeria and Uganda: A qualitative study on challenges and opportunities.	Yang, F., Bohren, M. A., Kyaddondo, D., Titiloye, M. A., Olutayo, A. O., Oladapo, O. T., … Gülmezoglu, A. M. (2017). International Journal of Gynecology & Obstetrics	To explore current practices, challenges, and opportunities in relation to monitoring labor progression, from the perspectives of healthcare professionals in low-resource settings.	Thematic analysis of qualitative data (in-depth interviews and focus group discussions	• Labor monitoring encompasses a broad scope of care jointly provided by doctors and midwives. • A range of contextual limitations was identified as barriers to monitoring labor progression, including staff shortages, lack of team cooperation, delays in responding to abnormal labor observations, suboptimal provider patient dynamics, and limitations in partograph use. • Perceived opportunities to improve current practices included streamlining clinical team cooperation, facilitating provider–client communication, encouraging women's uptake of offered care, bridging the gaps in the continuum of monitoring tasks between cadres, and improving skills in assessment of labor progress, and accuracy in its documentation.
12	Implementing an intervention to promote normal labour and birth: A study of clinicians' perceptions.	Wong Shee, A., Nagle, C., Corboy, D., Versace, V. L., Robertson, C., Frawley, N., … Lodge, J. (2019). Midwifery	To understand clinician factors that may influence the uptake, acceptance and use of the NLBB.	mixed methods study	• A valued consequence of implementing standardized and objective guidelines, highlighted in the focus groups, was the positive impact on clinicians' confidence in their decision-making. • This study found that midwives and obstetricians were in favour of using a normal labour and birth care bundle and perceived the bundle to align with the expectations of work colleagues and the women they

	Title	Author/Year/Journal	Aim	Method	Result
					care for. • Clinicians at the health service had strong intentions to use the normal labour and birth care bundle in the future.
13	Midwives' experience of their education, knowledge and practice around immersion in water for labour or birth.	Lewis, L., Hauck, Y. L., Butt, J., Western, C., Overing, H., Poletti, C., … Thomson, B. (2018). BMC Pregnancy & Childbirth	To address this gap in evidence and build knowledge around this important topic.	mixed method	• Midwives felt equipped to facilitate waterbirth and the mean waterbirths required to facilitate confidence was seven. • Midwives were confident caring for women in water during the first, second and third stage of labour and enjoyed facilitating water immersion for labour and birth. • Midwives were practicing according to state-wide clinical guidance. • Exploration of what midwives enjoyed about caring for women who used water immersion revealed three themes: instinctive birthing; woman-centred atmosphere; and undisturbed space. Exploration of the challenges experienced with waterbirth revealed two themes: learning through reflection and facilities required to support waterbirth.
14	Midwives’ and obstetricians’ perceptions of risk and its impact on clinical practice and decision-making in labour: An integrative review	Healy, S., Humphreys, E., & Kennedy, C. (2016). Women & Birth	How perceptions of risk impact on midwives’ and obstetricians’ facilitation of care for low-risk women in labour.	integrative reviews, in The Cochrane Database of Systematic Reviews, EBSCO, EMBASE and Scopus from 2009 to 2014.	• Over-arching theme of an assumption of abnormality in the birthing process leading to unnecessary intervention and surveillance. • Three sub-themes are presented under this central theme – (1) external influences on risk perception that include practice guidelines and professional responsibility; (2) influence of personal fears and values on risk perception focusing on differing attitudes to physiological birth; (3) impact of professionals’ perceptions of risk on women’s decision-making in labour.
15	Mobile obstetric and neonatal simulation based skills training in India.	Kumar, A., Singh, T., Bansal, U., Singh, J., Davie, S., & Malhotra, A. (2019). Midwifery	To explore the use of a structured obstetric and neonatal emergency simulation training program in India.	a pre-post workshop survey design	• Participants at all sites described maintaining safety of women and babies as their key role. • Their main challenge was lack of availability of medical back up, resources, structured training and poor compliance from women.

	Title	Author/Year/Journal	Aim	Method	Result
					• The key learning was gaining knowledge and procedural skills, non-technical skills, a systematic approach to obstetric and neonatal emergencies and learning in teams through simulation.
16	Nurses', midwives' and key stakeholders' experiences and perceptions on requirements to demonstrate the maintenance of professional competence.	Casey, M., Cooney, A., O' Connell, R., Hegarty, J., Brady, A., O' Reilly, P., … O' Connor, L. (2017). Journal of Advanced Nursing	To present the qualitative findings from a study on the development of scheme(s) to give evidence of maintenance of professional competence for nurses and midwives.	A mixed methods approach	• Four major themes were identified: Definitions and Characteristics of Competence; Continuing Professional Development and Demonstrating Competence; Assessment of Competence; The Nursing and Midwifery Board of Ireland and employers as regulators and enablers of maintaining professional competence.
17	Obstetric emergencies: Enhancing the multidisciplinary team through simulation.	Black, S. E. (2018). British Journal of Midwifery	To discuss and analyse the importance of the using the multidisciplinary team during high fidelity simulation. The aim was to review how effective the staff thought the simulation was in supporting them to enhance their skills working as a team.	questionnaire	• The main themes that were highlighted were: 'improved team working', 'realism', and 'helpful refresher'. • There were also three sub-themes that emerged from data collection: 'feedback was practical and efficient', 'increased confidence and communication skills', and 'could be made more realistic'.
18	Online postgraduate midwifery education increases knowledge integration into practice: Insights from a survey of Otago Polytechnic's postgraduate midwifery students.	Miller, S., & Griffiths, C. (2017). New Zealand College of Midwives Journal	To explore midwives' perceptions of how their engagement in online postgraduate midwifery education had influenced their practice, potentially benefiting childbearing women in their care.	A survey that used a combination of Likert scales, yes/no responses, and provision for qualitative comments. Data were analysed using descriptive statistics and thematic	• Midwife respondents practised across a range of settings from urban to remote rural locations, and midwifery care was provided at home and at primary, secondary and tertiary birth facilities. • Respondents felt that participation in online postgraduate midwifery education had improved their knowledge base and their ability to practice in an evidence-informed way, and they felt connected to a community of practice in a virtual sense, gaining the benefits of support and encouragement from fellow learners and lecturers. • They believed that the care they provided to women was enhanced because they had practice currency and could apply their knowledge to clinical situations with

	Title	Author/Year/Journal	Aim	Method	Result
				analysis.	increased confidence.
19	Risk perception in pregnancy: a concept analysis.	Lennon, S. L. (2016). Journal of Advanced Nursing	To report an analysis of the concept of risk perception in pregnancy.	Peer-reviewed articles published in English from CINAHL, Scopus, PubMed and Psychinfo.	• The attributes of the concept are the possibility of harm to mother or infant and beliefs about the severity of the risk state. • The physical condition of pregnancy combined with the cognitive ability to perceive a personal risk state is antecedents. • Risk perception in pregnancy influences women's affective state and has an impact on decision-making about pregnancy and childbirth. • There are limited empirical referents with which to measure the concept.
20	Telephone triage and midwifery: A scoping review.	Bailey, C. M., Newton, J. M., & Hall, H. G. (2018). Women & Birth	To explore midwives and telephone triage practises; and to discuss the relevant findings for midwives managing telephone calls from women.	scoping reviews, Thematic analysis	• Four emergent themes: purpose of telephone triage, expectations of the midwife, challenges of telephone triage, and achieving quality in telephone triage. • Telephone triage from a midwifery perspective is a complex multi-faceted process influenced by many internal and external factors. • Midwives face many challenges when balancing the needs of the woman, the health service, and their own workloads. • Primary research in this area of practice is limited.
21	The design and implementation of an obstetric triage system for unscheduled pregnancy related attendances: a mixed methods evaluation.	Kenyon, S., Hewison, A., Dann, S.-A., Easterbrook, J., Hamilton-Giachritsis, C., Beckmann, A., & Johns, N. (2017). BMC Pregnancy & Childbirth	To investigate midwives' views and experiences of the implementation of the BSOTS	Quantitative and qualitative methods	• The midwives reported that the new system helped them manage the department and improved safety. • The majority of units did not use a triage system based on clinical assessment to prioritise care. • This obstetric triage system has excellent inter-operator reliability and appears to be a reliable way of assessing the clinical priority of women as well as improving organisation of the department.
22	Variation in clinical decision-making for induction of labor: a qualitative study	Nippita, T. A., Porter, M., Seeho, S. K., Morris, J. M., & Roberts, C. L. (2017). BMC pregnancy and childbirth	To explore factors that influence clinical decision-making for IOL that may be contributing to the variation in IOL rates	Semi-structured, audio-recorded interviews	• Variations in decision-making for IOL were based on the obstetrician's perception of medical risk in the pregnancy (influenced by the obstetrician's personality and knowledge), their care relationship with the woman, how they involved the woman in decision-

	Title	Author/Year/Journal	Aim	Method	Result
			between hospitals		making, and resource availability. • The role of a 'gatekeeper' in the procedural aspects of arranging an IOL also influenced decision-making. • There was wide variation in the clinical decision-making practices of obstetricians and less accountability for decision-making in hospitals with a high IOL rate, with the converse occurring in hospitals with low IOL rates.
23	What are the characteristics of perinatal events perceived to be traumatic by midwives?	Sheen, K., Spiby, H., & Slade, P. (2016). Midwifery	To investigate the characteristics of events perceived as traumatic by UK midwives.	Thematic analysis, postal questionnaire survey	• Organizational context; typically limited or delayed access to resources or personnel. • Traumatic events had a common theme of generating feelings of responsibility and blame • witnessed events those that were perceived as traumatic sometimes held personal salience, so resonated in some way with the midwife's own life experience

Appendix 2 Presentation of results: list of articles

	Title	Author/Year/Journal	Aim	Method	Result
A	A much valued tool that also brings ethical dilemmas - a qualitative study of Norwegian midwives experiences and views on the role of obstetric ultrasound	Åhman, A., Edvardsson, K., Fagerli, T. A., Darj, E., Holmlund, S., Small, R., & Mogren, I. (2019) BMC Pregnancy & Childbirth	Norwegian midwives' experiences and views on the role of ultrasound in clinical management of pregnancy.	A qualitative study, qualitative content analysis	• Ultrasound examinations: very valuable tool, placing high demands on midwives' operational and counselling skills. • Advancements in ultrasound diagnosis have put the fetus in the position of a patient, and that pregnant women declining it could be viewed as irresponsible by some health professionals. • Ethical concerns regarding the possibility of pregnancy termination in case of fetal anomalies • Prenatal diagnoses including those following ultrasound, might create a society where only 'perfect' children are valued. • Performing ultrasound was to optimize pregnancy outcome and thereby assist expectant couples and their unborn children.
B	Birthplace as the midwife's work place: How does place of birth impact on midwives?	Davis, D. L., & Homer, C. S. E. (2016). Women and Birth	To explore the way that birthplace impacts on midwives in Australia and the United Kingdom.	qualitative descriptive, focus groups data gathering	• Work place culture presents a challenge to midwifes' capacity to ''be with'' women. • Five themes surfaced relating to midwifery and place including: 1. practising with the same principles; 2. creating ambience: controlling the environment; 3. workplace culture: being watched 4. Workplace culture: ''busy work'' versus ''being with''; and 5. midwives' response to place.

	Title	Author/Year/Journal	Aim	Method	Result
C	Cue acquisition: A feature of Malawian midwives decision making process to support normality during the first stage of labour	Chodzaza, E., Haycock-Stuart, E., Holloway, A., & Mander, R. (2018). Midwifery	To explore Malawian midwives decision making when caring for women during the first stage of labour in the hospital setting.	focused ethnographic study, Qualitative data analysis	• Six-stage process of decision making: deciding to admit a woman to labour ward, ascertaining the normal physiological progress of labour, supporting the normal physiological progress of labour, embracing uncertainty: the midwives' construction of unusual labour as normal, dealing with uncertainty and deciding to intervene in unusual labour. • Cue acquisition: piecing together segments of information they obtained from the women to formulate an understanding of the woman's birthing progress and inform the midwives decision making process.
D	Exploring Dutch midwives' attitudes to promoting physiological childbirth: A qualitative study.	Thompson, S. M., Nieuwenhuijze, M. J., Low, L. K., & de Vries, R. (2016). Midwifery	To describe Dutch midwives' attitudes toward, and motivations for, the promotion of physiological childbirth and to identify factors associated with those attitudes and motivations.	Exploratory, qualitative design using focus groups.	• Midwives view the safeguarding and promotion of physiological childbirth as central to their role. They • Define physiological childbirth along a continuum that is related to the context of their practice. • Hospital culture is seen as an inhibitor of practices that promote physiological birth. • Midwives believe that woman-centred ways of working and challenging practices that are not evidence-based will promote physiological childbirth.
E	Influencing factors in midwives' decision-making during childbirth: A qualitative study in the Netherlands.	Weltens, M., de Nooijer, J., & Nieuwenhuijze, M. J. (2019). Women & Birth	Gain understanding of underlying actors in the decision-making process prior to referral to obstetric-led care among midwives attending childbirth in midwifery-led care.	qualitative study based on in-depth interviews, thematic analysis	• Midwives mentioned knowledge as the basis of a reasoned decision. Both theoretical knowledge, and knowledge from clinical experience. • Influences of others, like the needs and wishes of • Labouring women were another factor influencing the decision-making, especially in non-urgent situations. • Under subjective factors, the fear of being held responsible for professional choices emerged.

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F	Irish and New Zealand Midwives' expertise at preserving the perineum intact (the MEPPI study): Perspectives on preparations for birth	Smith, V., Guilliland, K., Dixon, L., Reilly, M., Keegan, C., McCann, C., & Begley, C. (2017).Midwifery	To ascertain how midwives achieve these low rates, in these countries and settings.	qualitative exploratory study, semi-structured interviews	• Participants drew heavily on multiple sources of knowledge in building their own expertise for PPI. Physical characteristics of the perineum featured prominently as factors leading to PPI. • Episiotomy was, in the main, only performed when there were signs of fetal distress. • Antenatal perineal massage was supported.
G	Italian midwives' experiences of late termination of pregnancy. A phenomenological-hermeneutic study.	Mauri, P. A., Ceriotti, E., Soldi, M., & Guerrini Contini, N. N. (2015). Nursing & Health Sciences	How midwives perceive the burden of care, while assisting termination of pregnancy after 16 weeks' gestation.	Semi structured interviews, phenomenological–hermeneutic study,	• Four themes emerged from the interviews: influences, supports, empathy, and emotions. • Midwives assert conscientious objection to the termination of pregnancy, which does not influence their experiences and memories. • The midwives felt that it was important to share experiences with colleagues, discussing cases together and with the rest of the team. • Help from other professionals as fundamental in order to manage the clinical and emotional complexities related to these terminations.
H	Midwifery care based on a precautionary approach: Promoting normal births in maternity wards: The thoughts and experiences of midwives.	Aune, I., Holsether, O. V., & Kristensen, A. M. T. (2018). Sexual & Reproductive HealthCare	To gain a deeper understanding of the thoughts and experiences of midwives in the attempt to promote normal births in Norwegian maternity wards.	A qualitative approach, in-depth interviews, systematic text condensation.	• Working in a small maternity ward increased the possibility for continuous support during labour and continuity of care throughout pregnancy, birth and the postnatal period. • The midwives had a great desire to promote normal births with minimum of interventions. Still, they adhered to an ideology ba both a woman-centred and a biomedical view of birth. Their wo was often based on a precautionary approach in which problem-solving strategies were related to potential risks.
I	Midwives' clinical reasoning dur ing second stage labour: Report on an interpretive study.	Jefford, E., & Fahy, K. (2015). Midwifery	To what extent do midwives engage in clinical reasoning processes when making decisions in the second stage labour?	Interview, Feminist interpretive analysis, theoretically informed analysis and interpretation	• Thirteen of the 20 participant narratives demonstrate analytical clinical reasoning abilities but only nine completed the process and implemented the decision. • Seven midwives used non-analytical decision-making without adequately checking against assessment data.

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J	Midwives' decision making about transfers for 'slow' labour in rural New Zealand	Patterson, J., Skinner, J., & Foureur, M. (2015). Midwifery	To explore midwives' decision making processes when making transfer decisions for slow labour progress from rural areas to specialist care.	individual and group interviews, content and thematic	• The decision processes were also influenced by the woman's preferences and the distance and time involved in the transfer. • 'Making the mind shift', 'sitting on the boundary', 'timing the transfer' and 'the community interest' emerged as key themes.
K	Midwives' experiences of performing maternal observations and escalating concerns: a focus group study	Jeffery, J., Hewison, A., Goodwin, L., & Kenyon, S. (2017). BMC Pregnancy & Childbirth	To explore midwives' experiences of performing maternal observations and escalating concerns in rural and urban maternity settings in the West Midlands of England.	A qualitative design, focus groups	• Organization of Maternal Observations (including delegation of tasks to Midwifery Support Workers, variation in their training, the care model used e.g. one to one care, and staffing issues); • Prioritization of Maternal Observations (including the role of professional judgement and concerns expressed by midwives that they did not feel equipped to care for women with complex clinical needs • Negotiated Escalation (including the inappropriate response from senior staff to use of Modified Early Warning Score systems, and the emotional impact of escalation).
L	Midwives' experiences of the factors that facilitate normal birth among low risk women at a public hospital in Australia.	Carolan-Olah, M., Kruger, G., & Garvey-Graham, A. (2015). Midwifery	To explore midwives' experiences and views of the factors that facilitate or impede normal birth.	In-depth interviews, a qualitative study using an Interpretative Phenomenological approach.	• Midwives identified a number of factors that complicated their task of facilitating normal birth. • Barriers included: (1) time pressures; (2) a risk adverse culture, and; (3) women's expectations. Factors facilitating normal birth included: (1) a supporting environment, and (2) midwifery attributes and a desire to promote normal birth.
M	Midwives' experiences of using a modified early obstetric warning score (MEOWS): a grounded theory study.	Martin, R. L. (2015). Evidence Based Midwifery	To gain an understanding of midwives' experiences of using (MEOWS) and identify perceived barriers to using it, in order to consider how compliance may be improved.	A grounded theory study using semi-structured interviews	• Deficiencies in the management of change led to misunderstandings of the rationale for MEOWS affecting midwives' motivation to adopt the change. The frequency of changes in practice, lack of training in how to use the tool and duplication of documentation were perceived as barriers to implementing the MEOWS. • Midwives experienced the tool as a threat to autonomy, undermining clinical judgement. The findings also highlight midwives' concerns about delegation of measuring observations to support staff. Delegation was thought to lead to task orientation, which opposed holistic midwifery care.

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N	Midwives' intrapartum monitoring process and management resulting in emergency referrals in Tanzania: a qualitative study	Shimoda, K., Leshabari, S., Horiuchi, S. et al. (2015). BMC Pregnancy Childbirth	To describe how midwives monitored and managed the process of childbirth to achieve early consulting and timely referral to obstetricians.	Qualitative and descriptive, semi-structured interviews, content analysis.	• Three activity phases: initial encounter, monitoring, and acting. • During these phases, midwives noticed danger signs, identified problems, revised and confirmed initial problem identification, and organized for medical intervention or referral. • The timing of taking action was different for each midwife and depended on the nature of the prolonged and obstructed labor case.
O	Midwives' views, experiences and feelings of confidence surrounding vaginal breech birth: A qualitative study.	Sloman, R., Wanat, M., Burns, E., & Smith, L. (2016). Midwifery	To explore midwives' views, experiences and feelings of confidence surrounding vaginal breech birth (VBB).	a qualitative study, focus group discussions, verbatim and thematic analysis	• Midwives viewed VBB in dimensions of normality, perceiving it to be an unusual norm on one hand while also acknowledging potential problems. • Midwives expressed varied feelings of preparedness; the majority feeling inexperienced and under-prepared with VBB, yet more confident when supported by other colleagues. • Restrictions on women's choice of VBB; perceiving other practitioners as limiting women's choices through coercion, yet providing a balanced choice themselves.
P	Morality versus duty – A qualitative study exploring midwives' perspectives on post-abortion care in Uganda.	Cleeve, A., Nalwadda, G., Zadik, T., Sterner, K., & Klingberg-Allvin, M. (2019). Midwifery	To explore midwives' perspectives on post-abortion care (PAC) in Uganda.	A qualitative study using individual in-depth interviews and an inductive thematic analysis.	• Midwives were committed to saving women's lives but had conflicting personal morality in relation to abortion and sense of professional duty, which seemed to influence their quality of care. • Midwives were proud to provide PAC, which was described as a natural part of midwifery. • Structural challenges, such as lack of supplies and equipment and high patient loads, hampered provision of good quality care and left informants feeling frustrated. • Mistreatment of women seeking care due to abortion complications, through deliberate care delays and denial of pain medication.
Q	Providing quality care for women with vasa praevia: Challenges and barriers faced by Australian midwives.	Javid, N., Hyett, J. A., & Homer, C. S. (2019). Midwifery	To explore the barriers to providing quality maternity care for women with vasa praevia as identified by Australian midwives.	A qualitative descriptive study using semi-structured in-depth telephone	• Practitioner-level barriers included two themes: identifying lack of midwifery education and lack of knowledge. • System-level barriers included lack of a local policy to guide practice, limited information for women, and paucity of research about vasa praevia.

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				interviews.	
R	Sense and sensibility: Swedish midwives' ambiguity to the use of synthetic oxytocin for labour augmentation.	Ekelin, M., Svensson, J., Evehammar, S., & Kvist, L. J. (2015). Midwifery	To examine Swedish midwives' views on and experiences of labour augmentation in the context of normal labour.	Individual interviews, qualitative content analysis	• Midwives expressed ambiguity about augmentation of labour. • They were of the opinion that oxytocin was used very often and sometimes unnecessarily. • There is awareness that interventions to augment labour can result in undesirable effects on the birth process.
S	What factors influence midwives to provide obstetric high dependency care on the delivery suite or request care be escalated away from the obstetric unit? Findings of a focus group study	James, A., Cooper, S., Stenhouse, E., & Endacott, R. (2019). BMC Pregnancy & Childbirth	What factors influence midwives to provide OHDC or request care be escalated away from the obstetric unit in hospitals remote from tertiary referral centres?	Focus groups, qualitative framework approach.	Factors influencing midwives' care escalation decisions included: • Care environment, a woman's diagnosis and fetal or neonatal factors. • overall plan of care including the need for ECG and invasive monitoring • Small obstetric unit did not have access to the facilities for OHDC provision. • Large obstetric units provided OHDC but identified varying degrees of skill and sometimes used workarounds' to facilitate care provision. • Midwifery staffing levels, skill mix and workload were also influential. • Reliance on clinical guidelines appeared variable.