Hospital midwives

Citation for published version (APA):

Cronie, D. J. (2019). *Hospital midwives: an examination of the role, diversity and practice conditions of Dutch hospital midwives*. [Doctoral Thesis, Maastricht University]. Gildeprint Drukkerijen.
<https://doi.org/10.26481/dis.20191003dc>

Document status and date:

Published: 01/01/2019

DOI:

[10.26481/dis.20191003dc](https://doi.org/10.26481/dis.20191003dc)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

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Hospital Midwives: an examination of the role, diversity and practice conditions of Dutch hospital midwives.

Douglas John Cronie

Financial support from Maastricht University and Zuyd University (Research Center Midwifery Science) for the publication of: "Are midwives in the Netherlands satisfied with their jobs? A systematic examination of satisfaction levels among hospital and primary-care midwives in the Netherlands" (chapter 4) and: "How good is collaboration between maternity service providers in the Netherlands?" (chapter 6) is gratefully acknowledged.

Financial support by the Royal Dutch Organisation of Midwives for the publication of this thesis is gratefully acknowledged.

Author: D.J. Cronie
Cover: Jaimie Doak, www.okdoakdesign.com
Lay-out: Ilse Modder, www.ilsemodder.nl
Printed by: Gildeprint – Enschede, www.gildeprint.nl
ISBN: 978-94-6323-796-3

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Hospital Midwives: an examination of the role, diversity and practice conditions of Dutch hospital midwives.

To obtain the degree of Doctor at Maastricht University on
the authority of the Rector Magnificus, Prof. dr. Rianne M.
Letscherft, in accordance with the decision of the Board of
Deans to be defended in public on Thursday the 3rd of
October 2019 at 12.00 o'clock.

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Word of thanks

This thesis is dedicated to:

My Mum, from whom I was lucky enough to receive unconditional love

Our daughter, for whom I strive with every fibre of my being to give
unconditional love

And for my husband without whose love and support this long and sometimes
difficult journey would have been infinitely harder.

Thank you!

1

General Introduction

General introduction:

Advent of the hospital midwife.

The primary care midwife has long been the cornerstone of Dutch maternity care; the hospital midwife is a relatively new and increasingly important caregiver for pregnant and birthing women in the Netherlands. Twenty-five years ago, fewer than ten percent of midwives in the Netherlands were identified as hospital midwives (known as 'clinical midwives' in Dutch)¹; today – according to the latest available numbers – one in three midwives are employed in hospitals, making this the fastest growing segment of the profession². In spite of their growing numbers, and in spite of the fact that they are frequently called upon to care for women with complex care needs – often without direct supervision by an obstetrician³ – we know very little about the practice of hospital midwives and what they contribute to maternity care in the Netherlands.

The changing face of maternity care in the Netherlands.

Maternity care in the Netherlands is organized in echelons: primary, secondary and tertiary care. All physiological (sometimes called "low-risk") pregnancy and birthing-related care occurs in the primary care setting with the primary care midwife – or (rarely) a general practitioner – as the lead professional. Primary care midwives are independent, autonomous professionals and are specialists in the management of physiological pregnancy and birth⁴.

When a woman is considered to be at increased risk or her pregnancy/birth is complicated by pathology, she will be referred to the hospital (secondary care) setting, or, in the case of extreme complications (e.g. very early prematurity or complex comorbidity) to tertiary, University level hospital care⁵. In the past, referral to secondary care meant referral to an obstetrician who would provide care, but today a woman who is referred to an obstetrician will often be attended by a hospital midwife⁶.

In order to understand the significance of this change and to provide context for midwifery service provision in the Netherlands today, it is useful to briefly sketch the series of events that have led to this point.

A short history of midwifery in the Netherlands.

There is a long tradition of midwifery in the Netherlands. Evidence of organised, independent midwifery care extends back to 1530 A.D.⁷. Over the years since then, the independence of the profession has been affirmed, and

the sphere of practice given to midwives has been defined, by various acts of parliament (Medical Act 1865 (updated 1932 and 1951), the Ordinance for Midwives (1941), and the WET BIG (2001). It is important to note that the focus of all these regulations has been primary care midwifery.

The current midwifery profile owes much to Gerrit-Jan Kloosterman, a professor of obstetrics and the head of the midwifery training school in Amsterdam from 1957 until 1982. A strong proponent of primary care midwifery, Professor Kloosterman was influential in shaping the maternity care system in the Netherlands⁸ by structuring the management of maternity care based on a “list” that used level of risk to assign responsibilities to different types of care providers⁹. This list has evolved over the years. It was introduced in 1958¹⁰ and revised in 1966, 1973, 1987 (at this point it was known as the “obstetric indication list” [or, in Dutch, the VIL], and 1992). In 2003, it was officially renamed the Verloskundige Vademecum (maternity care manual). The logic of the list, contrary to the logic in most modern maternity care systems, is that the process of birth is ‘normal’ until proven otherwise^{4,11}. To this day, the midwives’ sphere of practice – the boundaries and circumstances under which a midwife can practice and when she should refer to specialist care – is defined by the VIL. Like the regulations mentioned above, the VIL was created to define the scope of practice of a primary care midwife.

The short history of hospital midwives in the Netherlands.

The advent of the hospital midwife in the Netherlands is not well documented. Midwifery in post-war Holland was not for the faint of heart. Primary care midwives – most working in solo practices – were expected to be on-call 24 hours per day, 7 days per week. They were poorly paid and had no provision for pensions. These conditions made it difficult to combine the practice of midwifery with family life¹². During this time, there is sporadic mention in the literature of midwives¹³ (typically married, with children) in the service of a hospital. However, there is no suggestion of systematic employment of midwives as a matter of policy.

It appears that a policy of employing hospital midwives began sometime between 1950-1960. First mention of midwives as hospital employees appears in the minutes of a meeting of the national midwifery service committee in 1950¹⁴. This idea found favour with Prof. Kloosterman who, at that time, was also responsible for the education of obstetric residents. Kloosterman reasoned that residents would benefit from exposure to the management of ‘normal’ (physiological) birth attended by midwives. Furthermore, he also reasoned that a woman with a complicated pregnancy who had been referred to an

obstetrician had more chance of achieving a normal birth with the presence of a midwife⁸. Accordingly, for the first time in the Netherlands, there is evidence of midwives being employed in the hospital setting to 'teach' obstetric residents and promote normal birth¹⁵.

It was this idea that gave birth to the hospital midwife. By 1960, national records show that 17 midwives were in hospital employment in the Netherlands¹⁶. At this time, there was no suggestion that hospital midwives should do anything other than manage (and teach) normal physiological birth. The advent of the hospital midwife did not give rise to an amended sphere of practice for midwives.

It is important to note that the practice of employing midwives in the hospital setting is separate and distinct from the custom of low risk hospital births being supervised by primary care midwives. Beginning in the 1970s primary care midwives were allowed to attend to birthing women in their care – where the birth is physiological and is progressing normally – in the hospital setting. Known as "policlinic" births, this practice is considered 'a home-birth in another setting' and falls under the responsibility of the primary care midwife. In this scenario, even though they are assisting birthing women in hospitals, primary care midwives retain their independence and are not employees of the hospital¹⁷.

Beginning in the 1960s, there was a gradual, but small increase in the number of hospital midwives. By the late 1980s hospital midwives made up approximately ten percent of the total of practicing midwives in the Netherlands¹⁸. This number remained fairly constant until the late 1990s¹⁹.

During this time, there is growing acknowledgement of the existence of hospital midwives in the literature²⁰, but there was little documentation of their efficacy. This began to change in 1995 with the publication of the OBINT study. This study examined intervention rates for women in labour in Dutch hospitals and – in keeping with Kloosterman's idea that midwives would promote physiological birth in the clinic – found that rates of intervention were lower in hospitals where midwives were employed²¹. Since then, this effect has been seen in other studies²², and it has been confirmed by the findings of the systematic review by Hattam et al²³, and more recently by the Lancet Midwifery series²⁴.

By the early 1990s, and for the first time in the Netherlands, hospital midwives appeared in the salary scales agreed to within the collective bargaining framework for hospitals²⁵, a formal indication of the integration of hospital midwifery in the Dutch maternity care system.

The number of hospital midwives in the Netherlands continued to grow in the second half of the 1990s. The reasons for this growth are not immediately clear. It has been variously suggested that the decline of birth at home (with a concomitant rise in hospital births), together with the desire of midwives for fixed hours and a secure salary, increased both the demand for, and supply of, hospital midwives, making hospital practice an attractive option^{26,27}. As the number of hospital midwives increased, their role changed and expanded²⁸. Initially, as noted above, midwives were brought into the hospital to teach 'normal' (physiology), but over the years, the care entrusted to midwives has become more complex²⁹. Through substitution of care, hospital midwives have come to manage more (complex) cases³⁰, leading to today's situation where hospital midwives routinely attend women with complex care needs, often working without direct medical supervision³¹.

The evolution of the role and responsibilities of the hospital midwife has not been matched by changes to the legal framework of practice. Current midwifery practice law covers only (the performance of) midwifery acts in the presence of normal (physiological) pregnancy and birth in the primary care setting³². Lack of clarity surrounding the regulations governing hospital midwives – about what she can and cannot do – creates uncertainty over the midwives' role and the extent of their capabilities. In addition, current midwifery training does not equip midwives for the skill-set required for hospital practice, including caring for women with complex needs³³. This confusion leads to discrepancies in the competencies and skills demanded of hospital midwives and can lead to misperceptions about their role on the part of other practitioners and patients/clients³⁴.

Key stakeholders, such as the professional organisations of midwives and gynaecologists (KNOV & NVOG), are aware of this situation³⁵. To date however, there have been no suggestions for the regulation of the practice of hospital midwives that all parties can agree upon³⁶.

Over the last decade, various attempts have been made to formally ratify the position of the hospital midwife. In 2007, the KNOV and NVOG attempted to formalise the position of the hospital midwife within the maternity care system. However, due to differences of opinion over the position of the hospital midwife within the maternity care system (primarily related to who was responsible for what), they were unable to come to an agreement³⁷. A second attempt was made in 2010³⁷ when a joint (KNOV/NVOG) work group was given a mandate for change. After several months of deliberation, the work group recommended:

- i. That a change to the existing Law regarding midwives' practice was required in order to reflect the broadened role of the hospital midwife;
- ii. That a new category of 'clinical (hospital) midwife' be added to the Health Practitioners Law³²;
- iii. That profiles be agreed upon, specifying content and criteria for the training programmes and the job description of clinical (hospital) midwives.

In the 2010s, two education programmes for hospital midwives were created^{38,39}. However, the KNOV declared that neither programme fully matched the criteria for training a 'Clinical Midwife' as specified in the final report of the work group (KNOV/NVOG). Indeed, the work group suggested that a new course, designed specifically to prepare hospital midwives for the work they are asked to do, was needed if the new category of 'Clinical Midwife' is to be formally recognised⁴⁰.

A further attempt to strengthen the position of the hospital midwife was made in 2014 when the KNOV, in conjunction with the NVOG, published a joint position paper titled: "Blueprint for the Positioning of the Clinical Midwife". This document was intended to support hospital midwives in establishing their position within the local organisational structure of hospitals⁴¹. However, this too, has produced mixed results as the blueprint is advisory in nature and carries no mandate or obligation for its introduction or use.

In spite of these well-intentioned efforts, the regulatory status and responsibilities of the hospital midwife remain unclear. The four-year baccalaureate-level training for Dutch midwives still focuses on the normal physiological processes of pregnancy and childbirth, with insufficient preparation for managing births in secondary or tertiary care. And although agreement has been reached over an education profile for the hospital midwife⁴², there is no formal requirement for additional training for midwives choosing to work in hospitals.

The ideal profile of the hospital midwife has also been described⁴³, but the place of the hospital midwife within the midwifery model of care has not yet been formalized. The future of hospital midwifery remains uncertain, and there is a great deal of diversity in the way hospital midwives practice.

From independent practice to employee.

The fact that nearly one in three of Dutch midwives works as an employee of a hospital⁴⁴ represents a significant change in the profession of midwifery and the working lives of midwives. Hospital midwives are subject to a different,

more hierarchical organisational structure and are part of a larger, more complex organisational culture. This work environment is likely to affect their job satisfaction and changes the meaning of autonomous practice.

In spite of this significant change in the content and process of midwifery work, we know very little about how the structure and culture of the hospital is altering midwifery in the Netherlands. There is, for example, growing disquiet from some within the profession regarding the possibility of the creation of a new category (clinical midwife) within the register. There is concern that the introduction of a new category of midwife may, in effect, introduce a two-tiered system within the profession, altering the practice of the primary care midwife and her place in the maternity care system⁴⁶.

This concern may lead to greater challenges in collaboration between hospital and primary care midwives and underscores the need to better understand and respect the similarities and differences between the two groups of midwives. Uncertainty over the contribution of hospital midwives – in terms of the cost of, and client satisfaction with, maternity care – adds to the need to establish a baseline in our understanding of their role in Dutch maternity care. This need has been made more acute by the move toward integrated maternity care⁴⁷ the introduction of which - without first having a clear understanding of the contribution of the parties involved – will make it more difficult to measure the impact of new models of service provision.

The future of midwifery in the Netherlands.

The current model of service provision has been the subject of inquiry in the last few years⁴⁸. A government report in 2009⁴⁹ suggested – with little evidence – that improvement in perinatal mortality and morbidity in the Netherlands may be achieved by greater collaboration between the professionals involved in maternity services. The report went on to propose that integrated models of care – changing the current system with its strict delineation of physiology in primary care and pathology in secondary care – would lead to better collaboration and hence better outcomes. At present, however, there is no consensus about what integrated care looks like or how it can be facilitated, introduced, or managed⁵⁰. And yet, integrated models are being introduced⁵¹.

Although the position and role of hospital midwives is still not well defined, it is likely that the move toward new models of integrated care will also change and expand their scope of practice.

The need to understand the place and practise of hospital midwifery.

In summary, there are several lacunae in our knowledge about hospital midwives.

1. We know how many midwives are practicing in hospitals, and we know that they form the fastest growing group of midwives in the Netherlands. However, we do not know to what extent, or exactly how many, have received additional training, nor do we know if they are practicing in every maternity hospital.
2. We know that there is an agreed upon profile for the hospital midwife⁴³. However, we do not know to what extent, if any, this actually reflects the work of hospital midwives in their daily practice.
3. We know that high-level evidence exists to support the value of the practice of hospital midwives. However, we do not know to what extent, if any, this evidence is available to hospital midwives.
4. We know that the Dutch midwifery model of care is undergoing a period of substantial change. However, we do not know how hospital midwives view these changes and, in particular, how they view their autonomy, job satisfaction, and the collaboration within a multi-disciplinary healthcare team.
5. We know that all hospital midwives are employees, and that in primary care, the majority of midwives are self-employed. However, we do not know whether there are significant differences between the composition of these groups or whether (and where) their views of midwifery practice differ.
6. Lastly, we know that there has been progress made towards establishing a new category of 'Clinical (hospital) Midwife' in the Netherlands. However, we do not know whether this will come to fruition or if there is a desire, or a mandate, for this change among midwives in the Netherlands.

The net result of this knowledge deficit is that it is difficult to measure, and hence to understand, the contribution of hospital midwives to contemporary midwifery practice. This information is critical if we are to assess how hospital midwifery can best be supported and developed to provide the best care for women and their babies.

In this thesis, we explore some of these questions. Importantly, the research we have done serves as a baseline in our understanding of the contribution of Dutch hospital midwives.

Aims of this thesis:

By mapping and critically reviewing the practise of hospital midwives, this thesis explores the contribution of hospital midwives to contemporary

midwifery practice within the context of the Dutch maternity care system. In addition, this thesis clarifies the position of hospital midwives within the current organisation of maternity service provision in the Netherlands.

The objectives of our research are:

1. To describe the existing diversity in the scope and practice of hospital midwives in the Netherlands (chapter 2).
2. To examine the content and quality of the protocols for hospital midwives used in maternity hospitals in the Netherlands (chapter 3).
3. To compare hospital midwives and primary care midwives with regard to job satisfaction and attitudes towards their work (chapter 4).
4. To examine how maternity care professionals in the Netherlands perceive their job autonomy and whether their expectations about job autonomy will change in a system of integrated maternity care (chapter 5).
5. To examine the quality of collaboration between multi-disciplinary teams of maternity service providers in the Netherlands (chapter 6).

In chapter 7, the general discussion, we bring together the aim and objectives of the thesis, examining the results and findings of our research in light of contemporary midwifery service provision in the Netherlands. The general discussion concludes with an analysis of the implications of our research for practice and consideration of avenues for future research in view of our findings.

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2

Diversity in the Scope and Practice of Hospital-Based Midwives in the Netherlands

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J Midwifery Women's Health 2012, 57 (5): 469–475

Abstract

Introduction: Not all midwives in the Netherlands are independent practitioners. One in four midwives registered to practice is employed in the hospital setting, where 70% of all births occur. There has not yet been an in-depth examination of hospital-based midwives' practice in the Netherlands, in the context of care in a higher-risk environment. The primary aims of this study were to describe the diversity and scope of practice of hospital-based midwives in the Netherlands.

Methods: This was an online survey of all hospitals throughout the Netherlands with labor/birthing rooms and employing hospital-based midwives. The survey covered five topic areas: demographic/organizational details, duties, responsibilities, experience/additional qualifications and how the midwife functioned within the multi-disciplinary hospital team. Descriptive statistics are provided.

Results: 59 secondary and tertiary level hospitals from a possible total of 98 were included for analysis (60% national response rate). Forty per cent of all births occurring during study period were managed solely by a hospital midwife. The provision of midwifery care in the hospital setting was not universal and where present, the presence of a hospital-based midwife was not necessarily 24 hours a day or seven days per week. Hospital-based midwives reported a high level of autonomy.

Discussion: Currently there is no universal provision of midwifery care in the hospital setting in the Netherlands. Where there are hospital-based midwives, they appear to manage the majority of births. However, there are no nationally agreed standards for midwifery practice in the hospital setting and no agreement exists over minimum requirements relating to additional education for midwives in these settings. A national evaluation and setting of minimum standards is needed.

Key words: Clinical-midwife, diversity/scope of practice, midwives role, midwives autonomy, survey.

Introduction

The Netherlands enjoys a high standard of healthcare with universal health care coverage funded via a hybrid system, partly funded by central government (with the cost deferred through taxation) and partly funded by health insurance. Outside of the Netherlands, the Dutch midwifery model of care is known for its relatively high home-birth rate, 30% of the total births, currently unprecedented in any other western world country.¹⁻³

Pregnancy care in the Netherlands is facilitated according to an assessment of risk. This assessment is based on risk profiling from a comprehensive list of conditions contained within 'the midwifery indication list' (as listed in the midwifery handbook)⁴ and forms an essential component of the midwifery care system. The midwife is acknowledged as the lead caregiver for normal pregnancy and is usually the first point of call for all pregnant women. When an increased element of risk is identified, then the pregnant woman is referred to an obstetrician and to hospital-based care. In the presence of increased risk, the cost of hospital care is provided for within basic insurance programmes.

The majority (75%) of the 1763 registered midwives in the Netherlands are independent practitioners (known as 'primary-care midwives') who work in the community setting, are usually self-employed and commonly work in small group practices.⁵ Under certain conditions (for example: uncomplicated pregnancy/labor, women not requiring continuous monitoring/pain relief), primary care midwives have rights to practice in their local hospitals but will only look after their own clients with uncomplicated labours. However, should a pregnant woman whose pregnancy has been assessed as low-risk choose to deliver in hospital, rather than at home, she must either have extra (more than the basic level of coverage) insurance, or pay a surcharge for the hospital birth. Primary-care midwives follow their clients in the community for postnatal care. In this system obstetricians may choose to either work for a hospital or be self-employed but commonly only work in hospital settings.

Pregnancy care is usually with a primary-care midwife in the community, when risk is assessed to be low, or at a secondary or tertiary level hospital (nominally under the care of an obstetrician) in the presence of increased risk. Care is provided either in a level two hospital when risk is classified as 'medium risk', or in a level three, university-teaching hospital upon the identification of high risk. Care pathways are non-linear in nature and care episodes can be shared,

or switch between professionals depending on the individual circumstances involved.

Not all midwives in the Netherlands are independent practitioners. One in four midwives registered to practice is employed in the hospital setting, where 70% of all births occur.⁶ Midwives employed to work in secondary or tertiary hospital settings are known as clinical-midwives. According to a position statement from the Dutch Obstetrician's professional body (NVOG) clinical-midwives bridge the gap between primary-care midwives and obstetricians and should be seen as having the same level of autonomy/skill as junior residents-in-training.⁷ The role of the clinical-midwife is distinct from that of primary-care midwives in that clinical-midwives function semi-autonomously within the hospital setting, routinely caring for women in labor who are at increased risk, such as women requiring pain relief in labor, labours complicated by meconium staining of the amniotic fluid, or post-term pregnancy. Clinical-midwives currently only work in the secondary and tertiary hospital environment.

As a percentage of all midwives registered to practice in the Netherlands, the total of clinical-midwives has risen by 10% in the last ten years.⁵ Twenty-five percent of all Dutch midwives now work as clinical-midwives. While little evidence for this rise exists and no in-depth examination of their working practices to date has been published, factors that have been suggested include a shortage of obstetricians and a desire [by midwives] for more regular hours.⁸

Despite their growing number, there is no universal provision of clinical-midwives in hospitals.⁹ Where there are clinical-midwives, their presence and provision of care may not be 24 hours a day or seven days a week. Large hospitals (>2000 births per year) are not common in the Netherlands and it is acceptable for doctors to be on-call from home providing they can be available within 30 minutes; however, clinical midwives must be on-site.

The right to practice and call oneself a midwife in the Netherlands is regulated by the central government.¹⁰ However, there is no national agreement on the scope of the clinical-midwives' practice in hospitals.¹¹ In addition, there is no provision for the clinical-midwife to be named the responsible caregiver at a hospital birth in the national perinatal classification statistics. Rather, the obstetrician (who may or may not have seen the women giving birth) is considered to have responsibility. Consequently, there is no official record (and therefore no assessment of efficacy) of births managed by clinical-midwives.

In addition, midwifery education in the Netherlands is not presently at a graduate level.¹² Education focuses on the normalcy of birth and the importance of good risk assessment. Following the initial training of four years to become a primary-care midwife there is no requirement for additional training or further education in order to work as a clinical-midwife with a higher risk population in hospital. Despite this, the current reality is that a clinical-midwife may be the professional in attendance and indeed, the sole caregiver at higher-risk hospital-based births. While this is seen as controversial¹³ there is as yet no consensus on whether or how to change this situation.

Previous studies have shown that the provision of midwifery care in the hospital setting can positively influence selected outcome measures, such as reducing the instrumental birth rate and the need for pharmacological analgesia.^{14, 15} However, an in-depth examination of the practice of clinical-midwives in the Netherlands, in the context of care in high-risk environment has not previously been described. The primary aims of this study were to investigate the contribution of Dutch clinical-midwives practice by establishing what they are actually doing, to catalogue clinical-midwives presence and provision of care in the secondary and tertiary settings and to clarify the working patterns and practices of midwives so employed.

Methods

An electronic survey was sent to all hospitals in the Netherlands that provide obstetric care (n=98). A paper/postal version was available on request. Questionnaire/survey studies are exempt from ethics committee approval in the Netherlands.¹⁶ The survey instrument was designed by the research team for the purpose of this study, as there was no existing, validated questionnaires addressing the subject matter. The survey contained 31 questions in five sections: demographics, duties, responsibilities, experience/additional qualifications and the place of the clinical-midwife within the obstetric team. The timeline for completion was two months; one reminder letter was sent.

Respondents were asked to provide their postal code, which was cross-referenced with their Internet provider address to ensure responses were analyzed as those of differing organizations. Where multiple responses were received from the same organization, sub analysis was carried out until a single response remained. The profession of respondents was categorized into three groups: 1) Clinical-midwife, 2) Manager (with clinical background), and 3) Other.

Perinatal data regarding number of births/reasons for transfer were obtained from the Dutch national perinatal database.⁶ A definition of small/medium/large hospitals was calculated by using the mean number of births per hospital, per year ($n=1442$; range 450-3000) plus and minus one standard deviation (calculated as 650). Therefore, we defined small hospitals as those having 792 births per year or fewer. Medium hospitals were defined as those with 793-2092 births per year. Large hospitals were defined as those with 2093 births per year or more. We were aware of one other study,³ which categorized hospitals with 6 separate levels of size. However, due to the small number of responses in our study, we felt three levels would be more representative.

Respondents were asked to consider the involvement of clinical-midwives in the care of birthing women over the last two shifts worked. The total number of births was quantified. The clinical-midwife's involvement in the management of birth was classified as follows: Category A included births totally managed by a clinical-midwife, without any involvement of the obstetrician. Category B included births managed by clinical-midwife but having one (or more) consultation(s) with obstetrician during labour/birth; in this case the consult could be by telephone or face to face but the obstetrician did not actually see the woman during the labour/birth. Category C included births managed by clinical-midwife but where the obstetrician was actually in attendance for all or part of the labour/birth. Finally, Category D included those births where the management of birth was either in part or completely taken over by the obstetrician.

In order to assess the clinical-midwife's autonomy in the hospital setting, a series of ten statements regarding actual practice in a range of duties was provided with a five-point, Likert-type scale for responses. The clinical-midwives' practice was classified as autonomous where respondents answered: Regularly/Often/Always and as non-autonomous where respondents answered: Never/Sometimes.

Clinical-midwives were considered 'experienced' when they had been working for more than five years since qualification as midwives (i.e., after their original education), 'moderately experienced' with two to five years since qualification, of 'limited experience' with one to two years and 'inexperienced' when they had worked less than 1 year since qualification.

For the purposes of our study we defined 'original education' to be the nationally approved four year training programme for midwives. The terms

'further training'/'further education'/'additional training' were categorized as interchangeable. When asked to give more information regarding 'further training'/'further education' respondents could choose from the following three accredited options: one year diploma level clinical-midwives course/Master's degree Physician Assistant programme /Master of Science midwifery.

Survey results were analyzed using SPSS software for Windows, version 17. Descriptive statistics were presented as means and proportions. Statistical significance was assessed by Chi square and Fisher's exact tests for categorical variables and by ANOVA for nominal variables. We considered a P value of <0.05 as statistically significant.

Results

From the 98 possible hospital sites, a total of 106 responses were received. Thirty-four respondents did not complete the survey and were therefore not included in the final analysis. Sub analysis between complete and incomplete questionnaires did not suggest that any particular category of hospital was under or over represented in the final analysis. Comparison of the postal codes from completed questionnaires demonstrated responses from all provinces. Further comparison of the annual number of births revealed that there was a representative spread of small, medium and large hospitals in the data analyzed. A further 13 responses were found to be multiple responses (more than one response from the same organization) and were evaluated to collapse them into a single response. Ultimately, 59 completed responses from separate sites were included for final analysis, giving an overall (national) response rate of 60%.

Sixty-eight percent (n=40) of our respondents were themselves clinical-midwives and a further 25% (n=15) were managers with a clinical background. The remaining 7% (n=4) classified themselves as 'other' (two were obstetricians, one administrator and one manager with a non-clinical background).

Demographics

Table 1 details clinical-midwives' employment in hospitals. Ninety-two percent (n=54) of hospitals employed clinical-midwives at least some of the time. However, one in three units surveyed (29%, n=17) did not provide clinical-midwives 24 hours per day, seven days per week (24/7). No significant correlation existed between clinical-midwives being employed and hospital

size. However, large hospitals were more likely to employ more clinical-midwives ($P=0.01$) and had a longer history of having employed them. Of the responding units who at the time of the survey did not employ clinical-midwives, half ($n=3$) stated their intention to do so within the coming 12 months.

Table 1: Employment of clinical-midwives^a in 59 hospital units in the Netherlands.

	Total n=59	Small ^b . n=7	Medium ^b . n=41	Large ^b . n=11	P value
Number of units where clinical-midwives employed, n (%)	54 (92)	6 (11)	37 (69)	11 (20)	0.49
Number of clinical-midwives employed, mean [SD]		5.29 [3.9]	7.76 [4.0]	11.45 [5.5]	0.01
Length of time clinical-midwives have been employed, mean [SD]		5.7 [4.4]	15.5 [13.4]	14.8 [15.3]	0.25
Number of units where clinical-midwives are employed 24/7, n (%)	42 (71)	4 (10)	30 (71)	8 (19)	0.68
Number of units where obstetricians are employed 24/7, n (%)	11 (19)	0 (0)	5 (45)	6 (55)	0.02

a. Midwives employed to work in secondary or tertiary hospital settings. b. Size of hospital units is defined as: Small = ≤ 792 births per year, Medium = 793-2092 births per year, Large = ≥ 2093 births per year

Duties

Using the classification of involvement described in the methods section, Table 2 details the level of clinical-midwives' autonomy reported by respondents. Analysis reveals that these midwives were partially responsible for the management of care during 77% of all births (the A, B and C categories) during

the period analysed and were the sole caregiver (the A category) responsible for management of the birth in 40% of births analyzed.

Table 2: Responsibility for management of birth among [54] hospitals in the Netherlands employing clinical-midwives^a

Responsibility for birth	Number (%) of births ^b	Mean (SD) births per unit where obstetrician not in house 24/7	Mean (SD) births per unit where obstetrician is in house 24/7	P value
Clinical-midwife only	114 (40)	2.4 (2.0)	2.1 (2.0)	0.75
Clinical-midwife with telephone consultation to obstetrician	84 (30)	1.5 (1.3)	2.8 (1.5)	0.02
Clinical-midwife: with consultation obstetrician where obstetrician actually saw woman	19 (7)	0.3 (0.6)	1.0 (1.4)	0.02
Obstetrician/obstetrician in training	66 (23)	1.3 (2.0)	1.6 (2.0)	0.66

a. Midwives employed to work in secondary, or tertiary hospital settings. b. Total births in the two time periods analyzed were 283.

The mean number of births led by a clinical-midwife where there had been consultation with an obstetrician (the B category) and where the obstetrician was in attendance (the C category) was significantly greater where there was an obstetrician in house ($P=0.02$).

Responsibilities

Table 3 gives additional detail regarding elements of autonomous practice. Where clinical-midwives were employed, 98% of respondents stated that these midwives had supervisory responsibilities for at least one other group of staff, such as nurses or junior residents. Where clinical-midwives were working, almost two-thirds of respondents (59%, $n=32$) stated that these midwives cared for labouring women and had additional simultaneous responsibility for other clinical areas, such as antenatal and postnatal wards and other duties, such as teaching and assessing students and seeing urgent consults. Fifty-four percent ($n=27$) of respondents stated clinical-midwives autonomously prescribed medications, including night sedation, although this is not within the official scope of practice of midwives in the Netherlands.

Table 3: Autonomous practice reported by clinical-midwives^a employed in [54] hospital units in the Netherlands

Clinical-midwives' duties and responsibilities (number of hospitals responding to this question)	Clinical-midwives practice autonomously for these tasks in the hospital n (%)	Clinical-midwives do not practice autonomously for these tasks in the hospital n (%)
Other than clients in labor, clinical-midwives [may] see/make a treatment plan for women admitted to antenatal/postnatal wards, (n=52)	39 (75)	13 (25)
Clinical-midwives may see antenatal clients (n=51)	39 (76)	12 (24)
Clinical-midwives may prescribe medicines such as night sedation (n=50)	27 (54)	23 (46)
Clinical-midwives may order testing such as ultrasound scans/laboratory work (n=51)	48 (94)	3 (6)
Clinical-midwives may interpret testing results (n=52)	47 (90)	5 (10)
Clinical-midwives may discharge clients (n=52)	45 (87)	7 (13)
Clinical-midwives may alter an existing treatment plan such as deciding to change vital signs observations from 4 to 2 times per day (n=50)	25 (50)	25 (50)
Clinical-midwives may undertake other care-related activities autonomously (for example, perform fetal blood sampling, vacuum births, or ultrasound scan for cervix length; assist with cesareans, decide method of induction, perform external cephalic version; start/coordinate treatment in presence of emergency; manage interdisciplinary consultation) (n=40)	30 (75)	10 (25)
Clinical-midwives have responsibility for other clinical areas (as well as labor ward) while working (for example: antenatal/postnatal areas, triage, antenatal clinic or ultrasound scanning) (n=54)	32 (59)	22 (41)
Clinical-midwives have supervisory responsibility for at least one other group of staff (for example: medical students, residents, interns, nurses, student midwives & maternity assistants) (n=54)	53 (98)	1 (2)

a. Midwives employed to work in secondary or tertiary hospital settings.

Experience & additional qualifications

Forty-one percent (n=24) of respondents stated that their hospital employed more than five experienced clinical-midwives, as defined in our survey. Conversely, 34% (n=20) stated that at least one inexperienced clinical-midwife was employed. In relation to further education, 31% (n=18) of respondents indicated that a requirement for employment at their hospital was that clinical-midwives must have had or must agree to undertake some form of additional training. Seventeen percent of respondents (n=10) had at least one clinical-midwife with a Master's degree. Two respondents reported an entire workforce of clinical-midwives with Master's level qualifications. However, 15%

(n=9) of respondents reported a workforce of clinical-midwives with no additional training beyond their initial qualification.

Teamwork

Irrespective of size of the hospital, 71% (n=42) of respondents reported the presence of clinical-midwives 24 hours a day, 7 days a week. The clinical-midwife was most likely to be alone when working (70% average across all shifts) although 10% (n=6) of respondents stated there was a second clinical-midwife on duty, Monday through Friday, between 8am and 6pm. Only 19% (n=11) of respondents stated that there was an obstetrician on-site 24 hours per day, 7 days per week. This was more likely to be in larger hospitals ($P=0.02$).

When asked how caregivers of varying disciplines made decisions and how the responsibility was divided, almost all 92% (n=54) of respondents stated that they always (or frequently) worked according to protocols in which duties and responsibilities were explicit. However (as protocols tend to be institution-specific) when questioned regarding the likelihood that protocols were up-to-date and were systematically selected and reviewed, respondents agreement dropped to 78% (n=46) and 79% (n=47) respectively.

Discussion

In this first assessment of hospital-based midwifery in the Netherlands we found that there is a national inequity of service provision by clinical-midwives across the country. According to data from the national perinatal database⁶ 70% (n=121391) of births annually occur in a hospital setting within the context of increased perinatal risk. However, in our study 29% (n=17) of the hospitals did not provide clinical-midwifery care twenty-four hours per day, seven days per week. Previous large-scale studies¹⁵ have shown that the provision of midwifery care can lead to an improvement in selected outcome measures. In addition, within the context of the Dutch model of care, employment of midwives in the hospital setting has led to less intervention.¹⁴ As a result, where there are no clinical-midwives in the hospital setting, or where they are not available 24 hours a day, 7 days a week, this does not best serve the needs of the pregnant woman.

According to the data gathered during the survey period, the reality of practice was that the majority of (hospital) births (77%), were in fact conducted by clinical-midwives and that almost half (40%) were managed solely from start to finish by clinical-midwives (see also table 2). Given the type of exempt study being conducted and confidentiality concerns, we could not ask specific details

regarding the level of care that laboring women actually required. However, reasons for transfer from primary-care midwifery in the community to a hospital facility, as obtained from the national perinatal statistics,⁶ shows the most common causes to be meconium staining of the amniotic fluid (28%), failure to progress in second-stage of labor (23%) and maternal request for analgesia (15%). This then, gives some insight to the type and risk profile of the women cared for by clinical-midwives in the hospital.

Currently, national statistics in the Netherlands only assess provider contribution to perinatal outcomes by these specific categories of providers; primary-care midwife, obstetrician or general practitioner, and by location of birth (home/hospital). No category exists in the national perinatal database for the hospital-based clinical-midwife as responsible caregiver at birth and therefore no assessment can be made about the effectiveness of care or contribution of the Dutch clinical-midwife to perinatal outcomes. Our findings related to caregiver at birth make a compelling argument for creating a classification in the national perinatal database of 'clinical-midwife' as responsible caregiver during birth.

We found a wide diversity in the scope of practice of clinical-midwives. In addition, little conformity in working patterns seemed to exist. There was little correlation between the number of clinical-midwives and the number of births or working patterns. To our knowledge, no nationally agreed staffing formula for clinical-midwives exists. However, substantive work regarding the number of midwives required to provide quality of care, such as the UK derived Birthrate Plus^{®17} is available. Further research into staffing requirements, from the perspective of the Dutch midwifery model, could assist service providers in the Netherlands when considering service specifications.

In the Netherlands, a 2008 report¹⁸ considered the issues surrounding birth. One of the conclusions¹³ is that some change to current policy with regard to on-site obstetrician presence out of office hours is needed. Respondents in our survey commented that there was a perception of additional responsibility being more likely out of office hours (where there was no on-site obstetrician). Comments such as "only at night" and "mainly in the evening, weekend and at night" were made in relation to clinical-midwives having additional responsibility.

In addition, our survey showed that clinical-midwives were substantially more likely to consult with an obstetrician if the obstetrician was in-house. Although we had no data regarding the specific level of care required in consult

situations, nevertheless one hypothesis is that clinical-midwives show some reluctance to call an obstetrician at home. Delay in instituting appropriate care has been shown to increase risk¹⁹ while there is also evidence from a Dutch²⁰ and international perspective²¹ of an increase in adverse outcomes in the evening, weekend and at night. Our survey augments existing knowledge regarding the presence of obstetricians in hospital and adds weight to the current discussion for change.

Currently, there is no national clearinghouse for guidelines or protocols for in-hospital midwifery care. The nationally agreed midwifery standards that do exist relate, on the whole, to care given by primary-care midwives in the community. Protocols (or local agreements) that contain clear guidance on matters such as how/when to summon help have the potential to minimize this risk and are therefore desirable.²²

Another theory for reducing risk and conflict within the labor ward (and indeed across the healthcare sector as a whole), which has steadily gained credence over the last few years is that of collaborative working.²³⁻²⁵ The basic premise of collaborative working is good communication. The underlying philosophy is that there should be no hierarchy within the team and that the team is entirely co-reliant. Downe et al²³ suggest that introducing strategies for collaborative working in the maternity care setting is key to improving outcomes in care. Based on the diversity of practice arrangements demonstrated in our findings, we suggest further research in the Dutch ward-ward setting in order to assess the potential impact of collaborative working strategies in the Netherlands.

Published evidence all but overlooks any potential contribution of Dutch clinical-midwives to contemporary practice. Clearly, our research demonstrates that the role of the clinical-midwife in the Netherlands is complex. Our survey shows that clinical-midwives are required, by the nature of their employment conditions to have advanced diagnostic, interpretive, managerial and teaching skills. However, the additional dynamic of these skills as they are related to care for women with a perceived higher risk highlights the desirability of national standards relating minimum experience, scope of practice and additional training.

The Netherlands accepts the International Confederation of Midwives definition of a midwife²⁶ as a legal statement of meaning. Yet contemporary clinical-midwives' practice in the Netherlands is not in line with the existing legislation relating to Dutch midwives' scope of practice, which is largely related to primary care midwifery in the community.¹⁰ We found that hospital-

based clinical-midwives displayed a high level of autonomy and that they were frequently required by nature of their employment conditions to assess, plan, implement and treat laboring women at increased risk in a stand-alone capacity. Nonetheless, we found that one third of hospitals surveyed employed at least one inexperienced clinical-midwife while two thirds had no requirement that clinical-midwives undergo additional training. Therefore, the hospital-based clinical-midwife is neither protected by law²⁷ nor by agreement regarding the scope of her practice (we note that a job profile has been suggested by the Dutch society of obstetricians, but this is not binding).²⁸ The resultant dichotomy between practice and mandate as a result of the current legal scope of midwifery practice is of concern.

Although the higher education systems of the United States and the United Kingdom are not directly comparable to that of the Netherlands, midwifery education in the Netherlands is nevertheless not yet at university-level.²⁹ Although student midwives have compulsory modules covering abnormality, arguably this does not prepare them adequately for current conditions of practice in the hospital setting. Various options for additional education exist. Masters programmes^{30,31} as well as diploma-level, non-accreditable courses³² are available but they are not [yet] mandatory. In addition, although dialogue over academisation is ongoing from within the midwifery profession³³ there is no absolute timeframe for it's' establishment. The current situation creates potential for confusion among clinical-midwives over what/how professional development should best be addressed.

In addition to debates about the level of additional education required for hospital-based practice, discussion from within the profession regarding recognition of the clinical-midwives' actual sphere of practice is also the subject of ongoing debate.³⁴ Various international studies have examined the potential contribution of some elements of practice, such as midwife ventouse practitioners (midwives trained in the use of the vacuum), midwife ultrasonographers and midwives' prescribing authority.³⁵⁻³⁷ These studies could perhaps be used to inform Dutch national policy.

Lastly, our survey also highlights the need for debate regarding the issue of midwife prescribing. Where midwives are regularly called on to dispense medications that they are not authorized to prescribe, this can be problematic, not only for the client but also in potentially exposing clinical-midwives (or their employers) to disciplinary or even punitive action. While current Dutch legislation¹⁰ allows for limited local devolution to midwives of certain practices regarding prescription privileges, in our view this is a sub-optimal use of the

Health Practitioner's Law. International comparison provides a potentially better way forward, such as including pharmacologic management within the midwives education curriculum and/or simplifying what requires prescription.^{38, 39} Should such amendments be made, prescriptive privileges could then conceivably be broadened in the clinical-midwives' scope of practice.

Limitations

The response rate of this study may limit its generalizability. The rationale for using web-based methodology was that it can better contain cost and is hypothesized to improve traditionally low response rates.⁴⁰ With initial contact and one reminder, our survey achieved a national response rate of 60%. However, small studies have an acknowledged limited ability to provide statistically significant outcomes.⁴¹ In addition, self reporting of data has been shown to increase bias in surveys.⁴² Thus, the reliability and validity of small surveys is sometimes questioned. However, our data analysis showed that small, medium and large hospitals were proportionally represented in our results and that responses were received from all provinces in the Netherlands. From the pattern of received responses and further consideration of incomplete responses we are confident that our survey is representative.

Conclusion

The primary aim of this study was to describe the current situation with regard to the spread and working practices of the Dutch clinical-midwife. Our survey is unique in that it presents the first national assessment of service provision of clinical-midwives in the Netherlands. This paper adds to the body of evidence regarding the clinical-midwives' autonomous practice in caring for pregnant women in the presence of increased risk.

Currently there is no universal or continuous presence of clinical-midwives in the hospital setting in the Netherlands. Where there are clinical-midwives, they appear to manage the majority of births. However, there are no nationally agreed standards for practice and no agreement exists over minimum requirements relating to additional education. The current situation is not in the best interests of pregnant women desiring a hospital birth.

In order to begin qualify the efficacy of clinical-midwives and to inform the ongoing debate regarding clinical-midwives' sphere of practice a new category of 'clinical-midwife' as responsible caregiver in the Dutch national perinatal database is desirable.

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3

Making Evidence Available for Hospital-Based Midwives: A Systematic Examination of the Content and Methodological Quality of Three Protocols Used in Maternity Hospitals in the Netherlands

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International Journal of Childbirth 2014, 4 (4): 208-218.

Abstract

Introduction: In recent years the Dutch have begun to question the safety and efficacy of their maternity care system. Particular concerns have been raised about the quality of care in hospital settings. One way to address concerns regarding quality and efficacy of care is by the introduction and use of evidence-based protocols for practice. The primary aims of this study are to 1) describe the availability and diffusion of protocols in Dutch maternity hospitals, 2) to systematically assess the methodological quality of these protocols, and 3) to consider the content of the protocols in relation to the best evidence for practice.

Methods: A mailed and Internet questionnaire to all hospitals with maternity facilities in the Netherlands inquiring about the availability, content, and methodological quality of protocols for three situations: hypertensive conditions of pregnancy, fetal surveillance, and post-partum haemorrhage. All protocols were systematically assessed twice. We first assessed the methodological quality of the protocol using the AGREE framework and we then evaluated protocol content using a framework we developed for this purpose. Protocols were scored using a Likert-type scale.

Results: Fifty-three percent (n=48) of all maternity hospitals in the Netherlands responded. The methodological quality of protocols we evaluated was poor. Using the AGREE framework, seventy percent of fetal surveillance protocols could not be recommended. Only one protocol from one hospital scored "strongly recommend". Confusion regarding the definition of a protocol and what it should contain were common problems. There was a general paucity of evidence in the protocols assessed.

Discussion: Protocols may not be widely available in Dutch maternity hospitals. Where they are available, the quality is poor. There is no national strategy for coordination, implementation, and dissemination of evidence-based protocols. Because centralization, uniformity, and interprofessional collaboration are known to improve adherence, it would be prudent for maternity care professions to develop and disseminate protocols based on best evidence.

Keywords: Midwife, hospital-midwife, protocol, survey, evidence-based medicine, EBM, evidence-based practice, teaching hospital, non-teaching hospital, Dutch maternity care, Netherlands.

Introduction

The maternity care system of the Netherlands has become the subject of national debate. The rates of perinatal death, as well as sub-standard care as a factor in maternal death, are particular concerns (Euro-Peristat 2008, Schutte 2010). While much of the debate concerns place of birth (de Jonge et al. 2009, Amelink-Verburg 2011) discussion is increasingly focusing on hospital births (Smeenk & ten Have 2006, Weigers 2009, Kooy et al. 2011). Studies have been critical of the level of cooperation and collaboration in the hospital maternity setting (Schutte et al. 2008, Visser & Steegers 2008, Evers et al. 2010) particularly after reports of an increase in adverse incidents in the evening, at weekends and at night (de Graaf et al. 2010, Kramer et al. 2010, IGZ 2011).

A recently published government-backed strategic review of maternity care in the Netherlands suggested that stakeholders in maternity-service provision should place a higher priority on the coordination, production, and use of evidence-based, inter-professional guidelines (van der Velden 2010). Evidence suggests that the use of standardized, evidence-based care plans in the form of guidelines or protocols can substantially improve health outcomes (AHCPR 1990, Enkin et al. 2000, Sackett et al. 2000, AGREE 2001, Grimshaw et al. 2002). Conversely, there is evidence to suggest that where professionals rely on poor protocols, there is a significant risk of harm from inappropriate care (Woolf et al. 1999, Grol 2001) with the attendant effect on costs (Hogg 2005).

Widespread gold-standard collaboration in protocol development – as in the UK with the National Institute for Clinical Effectiveness (NICE) or the United States National Guideline Clearing House (ARHQ) – is not common in the Netherlands (v Loon 2012). Although there is a stronger tradition of protocol use in midwifery in the primary care sector (KNOV 2003, KNMP 2012) the current system of guideline development rarely leads to national, interprofessional agreements in hospital care (NVOG 2010, NVOG 2012).

While a comprehensive description of the Dutch maternity healthcare system is outside the scope of this article, it is important to note that midwives are the predominant professional group caring for pregnant women in the current system. Dutch women with low-risk pregnancies are cared for in the primary care sector; those with medium risk in the secondary care sector and those with high-risk pregnancies are managed in tertiary referral centers. Risk selection forms the basis for allocation of women to a particular care level (Cronie et al. 2012).

Sixty-three percent of midwives in the Netherlands work in primary care, caring for women with low-risk pregnancies. They tend to be self-employed and work

individually or in group practices. The remaining twenty-seven percent of midwives work in a secondary or tertiary hospital setting (Hingstman & Kenens 2011).

In secondary care, there are two types of hospitals: non-teaching and teaching. Furthermore, there are eight university teaching hospitals spread throughout the Netherlands, which function as tertiary referral centers for high-risk pregnant women. Midwives commonly work autonomously in all three types of hospitals, caring for women with an increased risk profile. In the evening, on weekends and at night there is a significant chance that there will be only one midwife on duty and no in-house obstetrician. While in addition it was recently shown that up to forty percent of all hospital births, previously assumed to be managed by obstetricians, were solely managed by hospital midwives (Cronie et al. 2012).

In relation to midwifery education, the national curriculum for the four-year midwifery-training course in the Netherlands focuses on the normal physiology of childbirth, with an emphasis on home birth. There is currently no statutory requirement for additional training targeting midwife care in hospitals for women with higher-risk pregnancies.

Consequently, little is known regarding protocol use and how this affects midwives' ability to deliver evidence-based care in Dutch maternity hospitals. We divided our basic research question – “Do hospital-based midwives deliver evidence-based care?” – into three sub questions: 1. To what extent are protocols available in Dutch maternity hospitals?; 2. What is the methodological quality of the protocols that are being used?; 3. Is the content of the protocols based on the best evidence for practice? In addition, we explored the correlation between scores for methodological quality and the content scores of the protocols.

To our knowledge, this is the first assessment of the methodological quality and/or content of guidelines in use by midwives in Dutch maternity hospitals.

Methods

Our data set was obtained from an on-going examination by the Dutch Healthcare Inspectorate (IGZ) of the current levels of efficacy in care associated with pregnancy and birth (IGZ 2011). As a part of this project all Dutch maternity hospitals (n=91) were asked in 2010 to provide documentation (protocols) relating to the following three aspects of clinical midwifery care: hypertensive conditions of pregnancy, post-partum haemorrhage and fetal surveillance. Hypertensive conditions of pregnancy and haemorrhage are the

top two causes of maternal mortality, while unexplained stillbirth is the leading cause of fetal demise (Khan et al. 2006).

Initial contact was by letter from the IGZ to the hospital-management secretarial department. The project aims were stated and contact (e-mail) details were requested for the senior consultant in each obstetric department. A dedicated website was developed for the purpose of data collection. Login codes were e-mailed to all consultants, allowing them access to the website. A timeline of six weeks was set for completing data registration; two e-mail reminders were sent to the individual consultants who had not responded. One week before the closing date a letter was sent to the hospital-management secretarial departments of the hospital's from whom no response had yet been received, requesting compliance with the initial request to send the relevant protocols. It was estimated that there could be a maximum of three protocols from each of the ninety-one hospitals providing maternity services in the Netherlands (n=273 protocols).

The data were received digitally and sorted by organization and subject headings: hypertensive conditions of pregnancy, post-partum haemorrhage (pph) and fetal surveillance. Data were analyzed using the SPSS 17 software package. After calculating descriptive statistics, we examined differences between the types of hospitals – non-teaching, teaching and academic tertiary – using Chi-square tests, Fisher's exact tests and analyses of means. Because we received only one response from an academic tertiary hospital, we dichotomized "type of hospital" grouping the academic hospital with teaching hospitals. We considered a P value of 0.05 to be statistically significant.

We began our research with a Pub Med literature search for articles available in English in full text using the search terms 'Guidelines and appraisal and instrument' to identify guideline appraisal instruments. The majority (n=6) of the full-text articles reviewed (n=11) identified the internationally validated AGREE framework (AGREE 2001) as a reliable tool for guideline assessment. Accordingly, the protocols in our study were first subjected to an analysis of methodological quality, i.e., the quality of methods used to determine the protocol, using the AGREE instrument for the appraisal of guidelines for research and evaluation.

The AGREE appraisal criteria consist of twenty-three items in the following six domains:

Scope and purpose (3 items)

Stakeholder involvement (4 items)

Rigor of development (7 items)

Clarity of presentation (4 items)

Applicability (3 items)

Editorial independence (2 items)

Each of the items is rated on a 4-point, Likert scale in which 4 is 'strongly agree' and 1 'strongly disagree'.

After the methodological assessment we analyzed protocol content. Given our focus on protocols that are primarily related to intra-partum practices, we wanted to evaluate the documents in light of best practice in the management of the three conditions. Because we could not find a validated appraisal framework that assessed content from this perspective, we developed a tool for measuring the degree to which a protocol was based on the best available evidence.

Four steps were involved in the development of this tool. First, in order to create a benchmark for the Dutch protocols, we searched for protocols based on high-quality evidence. We used the US National guidelines clearing house database (AHRQ 2012) {HYPERLINK

"<http://www.guideline.gov>"www.guideline.gov} to find protocols containing high-quality evidence relating to the three subject areas studied. Second, we evaluated the evidence used in the protocols found in the NGC according to the National Institute for Health and Clinical Excellence's hierarchy of evidence table (NICE 2005) {Figure 1}. Level 1 is the highest and level 4 is the lowest level of evidence. For our study, we considered evidence at level 2 or higher to be high quality. In this step we located five protocols that used high quality evidence (RCOG 2001, NICE 2007, WHO 2007, NICE 2010). From the five protocols we found nine recommendations with high quality evidence matching our criteria – three in each of the subject areas.

For protocols relating to hypertensive conditions of pregnancy the three recommendations based on high-quality evidence were:

Induction of labor with gestational hypertension or mild pre-eclampsia from 37 completed weeks of pregnancy onwards; evidence level 1+

Labetalol (antihypertensive) for the treatment of moderate hypertension; evidence level 1-

Magnesium sulphate for treatment of severe hypertension or severe pre-eclampsia; evidence level 1++

In the case of post-partum haemorrhage, the three recommendations with high-quality evidence were:

Risk assessment of antenatal factors, with care plan covering third-stage management; evidence level 2

Uterotonics for all women after delivery of baby; evidence level 1-

Active management of the third stage of labor for all women; evidence level 1+ (uterotonics + cord clamping after cessation of pulsing + controlled cord traction)

In the case of fetal surveillance, the three recommendations with high-quality evidence were:

Continuous fetal monitoring in increased-risk pregnancies; evidence level 1+

Fetal blood sampling in the presence of pathological cardiotocograph (CTG); evidence level 2

Where fetal hypoxia is suspected, umbilical artery acid-base status should be assessed; evidence level 2

Third, we used a scoring system to assess systematically the Dutch protocols we had received. Based on whether or not best evidence was included, we assigned a clinical practice content score to each (yes=2/ unclear=1/no=0). The maximum possible score for each protocol was 6 – assigned to a protocol that contained all three recommendations for that subject area.

Fourth, we used these scores for a simplified assessment of efficacy as suggested by the AGREE framework (AGREE 2001) {strongly recommend/recommend with provisos/would not recommend}we adopted a threshold for "strongly recommend" of > 4 (66-100%), The threshold for "recommend with provisos" was a score of 3-4 (33-65%), and the threshold for "would not recommend" was a score of < 3 (0-32%).

Studies using data of this type are not subject to ethics committee approval in the Netherlands (CCMO 2012). <http://www.ccmo-online.nl/main.asp/English/FAQ/WMO>.

Results

Table 1 shows the response rate by type of hospital. Forty-eight of the 91 Dutch maternity hospitals replied (response rate: 53%). All thirteen provinces and all

of the four largest cities in the Netherlands were represented. Academic teaching hospitals were under-represented (n=1 of 8).

Many different forms of documentation were received. For the purpose of this study, we classified and analyzed all the documents received as protocols. All the responding hospitals had protocols for the management of hypertensive conditions of pregnancy (n=48). One hospital (a teaching hospital) had no post-partum haemorrhage protocol. Twenty-five percent (n=12) of hospitals supplied no fetal surveillance protocol. Non-teaching hospitals were significantly less likely to have a fetal surveillance protocol ($p \leq 0.05$).

Methodological quality

Table 2 shows the methodological quality of the protocols, according to the AGREE criteria. The possible maximum total score for the methodological analysis for each of the protocols was 92. The maximum scores achieved were: 52 for protocols relating to hypertensive conditions of pregnancy (1 of the 48 received), 46 for protocols relating to fetal surveillance (1 of 37 received), and 44 for protocols relating to post-partum haemorrhage (1 of 47 received).

Although the protocols for all three conditions at teaching hospitals generally scored higher than non-teaching hospitals, these differences were not significant.

Content analysis

The results of our content analysis are shown in Table 3. Only one of 48 hospitals scored a 6 – the maximum score – for its protocol relating to hypertensive conditions of pregnancy; two of 36 hospitals scored a 6 for their protocols relating to fetal surveillance; and the highest score for protocols relating to post-partum haemorrhage, achieved by five of 47 hospitals, was a 5.

Only one hospital had a combined content score of 17 out of 18 possible points. Six (13%) of the protocols relating to hypertensive conditions of pregnancy scored a 0, as did seven (19%) of the protocols relating to fetal surveillance.

The protocols for post-partum haemorrhage protocols scored better than the protocols for the other two conditions. The mean scores for protocols relating to post-partum haemorrhage and fetal surveillance were 30% of the maximum score. Teaching hospitals scored higher than non-teaching hospitals for the protocols relating to all three conditions, although the difference was not significant.

Protocols commonly used vague language in relation to content when describing actions or noting who had responsibility. In all three types of protocols it was often difficult to ascertain the authorship of the protocol or the organization responsible and, even when this was stated, the date of origin was commonly more than three years ago.

Table 4 shows the level of recommendation by type of protocol according to both the methodological assessment and content assessment. During methodological analysis very few protocols could be classified in the "strongly recommend" category (n=1). While protocols for fetal surveillance showed the lowest level of recommendation during both analyses. On occasion however, conflicting scores were noted: a few protocols with a low score for methodological quality scored higher for content analysis. However, we found no distinct pattern here. We noted that this was most likely to be a feature of protocols dealing with post-partum haemorrhage. However, the small numbers involved precluded finding significant differences in the relationships. In addition, we found that teaching hospitals scored consistently better than non-teaching hospitals in both analyses. However, once again, the difference was not large enough to be significant.

Discussion

To our knowledge, this study is the first national comparison of the protocols in use in Dutch maternity hospitals. We divided our research question into three sub-questions. The first of these is: are protocols sufficiently available in Dutch maternity hospitals? Our survey suggests that this may not be the case. Although the overall response rate of 53% was lower than expected, this is still considered to be an acceptable response rate (Salvucci et al. 1997). However, previous studies have demonstrated a positive association between the organization conducting the study (and therefore soliciting a response) and the response rate itself. The importance of the requesting body as perceived by the recipient is likely to influence the response rate (Jacoby 1990, Edwards et al. 2002). In view of the fact that the questionnaire was sent via the Dutch Healthcare Inspectorate, a governmental organization with authority over healthcare institutions, the relatively low response rate leads us to conclude that the development and use of protocols in Dutch maternity hospitals is not a high priority. In addition, academic tertiary hospitals were under-represented in our study. We are therefore unable to comment on, or draw conclusions about, protocol use in tertiary referral hospitals in the Netherlands.

Turning to the second sub-question: what is the methodological quality of the protocols used in Dutch maternity hospitals? The answer is moderate to low.

We found few examples of good practice from the sample of protocols in use in Dutch maternity hospitals. This was most notable during analysis of methodological quality where ninety-eight percent of protocols in the "management of hypertension" category could not be rated "strongly recommend" while none of the fetal surveillance or management of post partum haemorrhage protocols were rated "strongly recommend".

A lack of standardization, and apparent confusion as to what constitutes a protocol (as well as to what it should contain), are troublesome. A variety of documents described as protocols was received. Included were: protocols, guidelines, policy documents, work agreements and procedures. This difficulty is acknowledged internationally (Kramer et al. 2010, IOM 2011, AHRQ 2012). Adopting a standard definition of a protocol in the Netherlands may reduce confusion and improve care.

It is particularly noteworthy that, in the AGREE analysis of methodological quality, some domains scored lower than others, most notably stakeholder involvement, applicability and editorial independence. No single protocol we analyzed included confirmation that patients' views were obtained during protocol development. Similarly, turning to the domain of applicability, none of the protocols gave sufficient detail with respect to the potential cost implications of implementing the protocol. Editorial independence scored equally low. None of the protocols analyzed gave any information to suggest that the guideline was editorially independent from the funding body. This suggests a systematic failure in Dutch maternity hospitals with regard to these three areas of protocol development and suggests a priority area to be addressed by stakeholders.

Poor protocols are not unique to the Netherlands (Sudlow & Thompson 1997, Graham et al. 2001, Grilli et al. 2001, Goergen et al. 2010, Leach & Segal 2010, McNair & Hegarty 2010). Nor is the AGREE instrument exempt from criticism (Vlayen et al. 2005) since it does not allow for an assessment of protocol content. This led us to the third sub-question: does the content of protocols used in Dutch maternity hospitals match best evidence for practice?

The answer to this question is also "no". Although more protocols scored "strongly recommend" after content analysis than after methodological analysis, overall the scores for content were poor. For example, seventy per cent of all fetal surveillance protocols rated "would not recommend" while 21% of them scored zero for content analysis because they did not include any of the three high quality evidence recommendations for practice.

In general, we found a paucity of evidence-based protocols in use in Dutch maternity hospitals. Protocols were often old (in one case, the date of the last review was more than twelve years previously). We found guidance that was frequently confusing or vague, a recurrent theme being the use of terms such as “as necessary” and “when needed”. In addition, we found potentially harmful advice such as the recommendation of the use of ergometrine as first-line management in the event of post-partum haemorrhage. One study suggests that this is also a widespread issue, finding that 20-25% of care provided is not needed or potentially harmful (Grol & Grimshaw 2003).

A barrier that prevents individual hospitals from producing high-quality, evidence-based protocols is the lack of resources required to produce, update and disseminate them (Yamill et al. 2003, Grimshaw et al. 2004). Removing the burden from individual hospitals by centralizing protocol production in a centrally funded body (NICE 2007) would be a good step forward in this respect. Both the KNOV (Royal Dutch Organization of Midwives) and the NVOG (Dutch Association of Obstetricians and Gynaecologists) agree that more attention to cooperative working practices (in the form of national protocols) is desirable (NVOG 2011, KNOV 2012). However, this way of working has not yet been formalized.

There are some national examples of good practice in the Netherlands, such as the CBO (National institute for healthcare quality) guideline for pain management options in labor (CBO 2008) {the only guideline from this organization which could be identified at the time of writing} or the NVOG Guideline for fetal monitoring (NVOG 2003). However, few hospitals stated that they used them.

Despite this, we suggest that adopting an inclusive, inter-professional strategy for protocol development using a standardised format on the lines of the SIGN guideline developer’s handbook (SIGN 2008) "<http://www.sign.ac.uk>" with dissemination through a central, accredited body such as those in place in other developed nations is the approach most likely to improve the quality of protocols available and to assist midwives in Dutch maternity hospitals to make judgments based on the best available evidence. However, in so suggesting, we are mindful of the comment by Oxman et al. “that there are no magic bullets” in terms of implementation strategies and protocol adherence (Oxman et al. 1995, p1431).

Limitations

While we are confident that our analysis represents an accurate picture of the hospitals surveyed nevertheless, the relatively low response rate of 53% may

mean that our results are not generalizable to all maternity hospitals in the Country. However, the fact that our survey contains results from maternity hospitals in all provinces (n=13) and from the four major cities of the Netherlands suggests a consistent pattern throughout the Country. Because of financial constraints only one researcher analyzed the protocols. Although this is a limitation, the format for assessment was clear and specific, therefore is less likely to generate errors in coding.

Conclusion

Our survey demonstrates that protocols may not be widely available in Dutch maternity hospitals and that the methodological quality of the available protocols is poor. In addition, examination of the content of protocols used revealed inconsistency and minimal use of quality evidence. This leads us to conclude that in current practice conditions, using the protocols analyzed it is likely that hospital midwives in the Netherlands will be hampered rather than assisted in their quest to deliver evidence-based care.

Hospital midwives are the backbone of maternity service provision in the Netherlands. They manage almost half of all the births occurring in hospitals, often work alone and care for women with higher-risk pregnancies (Cronie et al. 2012). Not having access to high quality, up-to-date, evidence-based protocols further complicates the work of hospital midwives and could have a potentially detrimental effect on the health of women in their care.

FIGURES AND TABLES

Figure 1: Grading for levels of evidence³²

Evidence Level	Source of evidence
1++	High quality meta-analyses, systematic reviews of randomized controlled trials (RCTs) or RCTs with a very low risk of bias
1+	Well conducted meta-analyses, systematic reviews of RCTs or RCTs with a low risk of bias
1-	Meta-analyses, systematic reviews or RCTs or RCTs with a high risk of bias
2++	High-quality systematic reviews of case-control or cohort studies; high-quality case-control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2+	Well conducted case-control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2-	Case-control or cohort studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal

3	Non-analytical studies (e.g. case reports, case series)
4	Expert opinion, formal consensus

Hierarchy of evidence table, NICE.

Table 1: Number of protocols per type of hospital in the Netherlands (n=48)

Type of protocols	Teaching hospitals n (%)	non-teaching n (%)	Tertiary academic hospitals n (%)	Number of hospitals with protocols for this situation n (%)
Hypertensive conditions of pregnancy protocols	18 (38)	29 (60)	1 (2)	48 (100)
Post-partum haemorrhage protocols	17 (35)	29 (60)	1 (2)	47 (97)
Fetal surveillance protocols	15 (31)	21 (44)	1 (2)	37 (77)

Table 2: AGREE¹⁹ scores^s for methodological quality of protocols

Domain (possible max score)*	type of protocol	Modal score {mean} (standard deviation)	Range of actual scores	% of hospitals with actual maximum score	% of hospitals with minimum score
Scope and purpose (12)	Hypertensive conditions	5 {6.94}(2.85)	3-12	10%	10%
	Post-partum haemorrhage	3 {4.98}(1.97)	3-9	6%	27%
	Fetal surveillance	3 {3.13}(2.32)	3-6	4%	44%
Stakeholder Involvement (16)	Hypertensive conditions	4 {4.63}(0.94)	4-7	2%	67%
	Post-partum haemorrhage	4 {4.65}(1.26)	4-7	6%	65%
	Fetal surveillance	4 {3.63}(2.16)	4-7	2%	46%
Rigor of development (28)	Hypertensive conditions	8 {9.48}(2.41)	7-19	2%	15%
	Post-partum haemorrhage	7 {8.35}(2.07)	7-13	4%	33%
	Fetal surveillance	7 {6.33}(3.94)	7-16	2%	35%
Clarity of presentation (16)	Hypertensive conditions	8 {7.81}(2.46)	4-12	8%	13%
	Post-partum haemorrhage	5 {7.10}(2.86)	4-13	4%	15%
	Fetal surveillance	4 {4.15}(2.77)	4-10	4%	38%
Applicability (12)	Hypertensive conditions	3 {3.08}(0.40)	3-5	4%	96%
	Post-partum	3 {2.98}(0.48)	3-4	4%	94%

	haemorrhage Fetal surveillance	3 {2.42} (1.36)	3-4	10%	67%
Editorial Independence (8)	Hypertensive conditions	2 {2.00}(0)	0-2	**	100%
	Post-partum haemorrhage	2 {2.00}(0)	0-2	**	100%
	Fetal surveillance	2 {2.00}(0)	0-2	**	100%
Total score (92)	Hypertensive conditions	30 {5.00}(2.53)	24-52	2%	6%
	Post-partum haemorrhage	24 {4.00} (1.78)	23-44	2%	2%
		23 {3.8}(1.72)	23-46	2%	25%
	Fetal surveillance				

§ The AGREE appraisal criteria consist of twenty-three key items in the following six domains.

Scope and purpose (3 items), Stakeholder involvement (4 items), Rigor of development (7 items), Clarity of presentation (4 items), Applicability (3 items), Editorial independence (2 items)

Each of the items is then scored on a 4-point, Likert-like scale in which 4 is "strongly agree" and 1 "strongly disagree".

*possible maximum total score: 92 **no difference: 100% of respondents scored 2

Table 3: Scores for content analysis

Element of evidence assessed (possible max score)	Type of protocol	Modal score {mean}(standard deviation)	Range	% of hospitals with maximum score	% of hospitals with minimum score
Induction of labor (IOL) advised from 37 complete weeks of pregnancy onwards (2)	Hypertensive conditions of pregnancy	0 {0.69}(.83)	0-2	23%	54%
Labetalol 1st drug of choice for treatment of moderate hypertension (2)	Hypertensive conditions of pregnancy	1 {0.90}(.66)	0-2	17%	27%
Magnesium sulphate drug of choice for treatment of severe hypertension/pre- eclampsia (2)	Hypertensive conditions of pregnancy	2 {1.35}(.73)	0-2	50%	15%
Risk assessment of	Post-partum	1 {0.51}(.50)	0-2	0%	51%

antenatal factors with care plan covering third stage management	haemorrhage				
Uterotonics for all women after delivery of baby	Post-partum haemorrhage	2{1.87}(. 40)	0-2	89%	51%
Active management of the third stage for all women	Post-partum haemorrhage	0{0.60}(. 88)	0-2	26%	66%
Continuous fetal monitoring during labor for increased-risk pregnancies	Fetal surveillance	2{1.24}(. 88)	0-2	54%	19%
Fetal blood sampling advised in the presence of pathological cardiotocograph	Fetal surveillance	0{0.74}(. 98)	0-2	38%	62%
Where fetal hypoxia is suspected umbilical artery acid-base status should be assessed post-partum	Fetal surveillance	0{0.16}(. 55)	0-2	8%	92%
Total score per protocol (6)	Hypertensive conditions of pregnancy	4{2.96}1.72)	0-6	2%	13%
	Post-partum haemorrhage	2{2.94}1.24)	0-6	11%	4%
	Fetal surveillance	0{1.69}1.74)	0-6	5%	19%
Total scores for all three protocols (18)		5{7.56}2.88)	0-16	2%	4%

Table 4 Level of recommendation* by type of protocol according to the methodological assessment and content assessment – N (percent)

Type of protocol	Method of assessment	Strongly recommend	Recommend with provisos	Would not recommend
Hypertensive conditions	methodological 48	1 (2)	36 (75)	11 (23)

of pregnancy	(100%) content 48 (100%)	11 (23)	19 (39)	18 (38)
Post-partum haemorrhage	methodological 47 (100%) content 47 (100%)	0 7 (15)	18 (38) 19 (40)	29 (62) 21 (46)
Fetal surveillance	methodological 37 (100%) content 37 (100%)	0 3 (8)	12 (32) 8 (22)	25 (68) 26 (70)

* Using a simplified assessment of efficacy as suggested by the AGREE framework¹⁹ (strongly recommend/recommend with provisos/would not recommend), we assigned a level of recommendation to each protocol.

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4

Are midwives in the Netherlands satisfied with their jobs?

A systematic examination of satisfaction levels among hospital and primary-care midwives in the Netherlands.

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Accepted: BMC Health Services Research, May 2019.

Abstract.

Background: Job satisfaction is generally considered to be an important element of work quality and workplace relations. Little is known about levels of job satisfaction among hospital and primary-care midwives in the Netherlands. Proposed changes to the maternity care system in the Netherlands should consider how the working conditions of midwives affect their job satisfaction.

Aim: We aimed to measure and compare job satisfaction among hospital and primary-care midwives in the Netherlands.

Methods: Online survey of all practising midwives in the Netherlands using a validated measure of job satisfaction (the Leiden Quality of Work Questionnaire) to analyze the attitudes of hospital and primary-care midwives about their work. Descriptive and inferential statistics were used to assess differences between the two groups.

Results: Approximately one in six of all practising midwives in the Netherlands responded to our survey (hospital midwives $n = 103$, primary-care midwives $n = 405$). All midwives in our survey were satisfied with their work ($n = 508$). However, significant differences emerged between hospital and primary-care midwives in terms of what was most important to them in relation to their job satisfaction. For hospital midwives, the most significant domains were: working hours per week, workplace agreements, and total years of experience. For primary-care midwives, social support at work, work demands, job autonomy, and the influence of work on their private life were most significant.

Conclusion: Although midwives were generally satisfied, differences emerged in the key predictors of job satisfaction between hospital and primary-care midwives. These differences could be of importance when planning workforce needs and should be taken into consideration by policymakers in the Netherlands and elsewhere when planning new models of care.

Key words: Job satisfaction, Survey, Hospital Midwife, Primary-care Midwife, Integrated-care.

Background.

In the Netherlands, maternity care has been traditionally organized around primary-care (where midwives are the lead-professional). The role, remit and autonomy of primary-care midwives to provide low-risk pregnancy-related care is protected by law¹. Approximately 28 % of all midwives in the Netherlands are registered to practise as hospital midwives of which, 100% are employed. The remaining 72% of midwives are registered as primary-care midwives. Of these, 45 % are self employed practice owners (practices are further divided into 16% solo practice, 24% duo practice and 60% are part of a group practice). Of the group practices, 40% have 3 or 4 primary-care midwives and 60% consist of group practices with 5 or more primary-care midwives. Of the remaining primary-care midwives, 17% are self-employed agency midwives working only in primary-care, 6% are employed by a midwifery practice (but are not practice owners) and 3% are employed by health or birth centres².

Being in employment as part of a large (hospital) organisation means that hospital midwives are part of a different organisational structure and are subject to a different organisational culture than midwives in primary-care. This can be seen throughout the Dutch midwifery model of care, perhaps most obviously relating to the position of the midwife within the multi-disciplinary team; primary-care midwives are autonomous practitioners, recognised as the lead-carer for women with low-risk, physiological pregnancies. Their status is confirmed within the multi-disciplinary team, whereas, for the hospital midwife this is often not the case. Hospital midwives are frequently the only obstetric professional (in the context of the Dutch maternity care system, the phrase 'obstetric-professional' is understood to be limited to: an obstetrician, an obstetrician in training or a hospital midwife) at any one time on shift and commonly look after more than one woman in labour at a time. Women birthing in hospitals usually have an increased risk, or known pathology. Hospital midwives usually work fixed periods, typically 8 or 12 hour shifts with minimal or no on-call. Whereas primary-care midwives (particularly those in solo, or duo practices routinely work longer hours with greater on-call commitments (24 or even 48 hours on-call during weekends are not uncommon). Primary-care midwives, who are paid a per-client fee by insurance companies, will have a caseload of upwards of 100 women per midwife, per year (the recommended maximum norm is 105 women, per midwife, per year³). For a fuller explanation of the Dutch maternity care system see: Amelink-Verburg & Buitendijk⁴.

In recent years, there has been an increase in the number of midwives working in secondary (hospital) care².

Under the present system of care pregnant women who are healthy, as defined by a list of indications⁵, are cared for by midwives in the primary care sector. If during pregnancy, a woman develops a condition considered to be “medium or high risk”, she will be transferred to hospital-based care under the care of an obstetrician; in practice however, maternity care in the hospital setting is commonly provided by a hospital-based midwife⁶. This means that care by the primary-care midwife stops at the point of referral to secondary care. This delineation of care has traditionally meant that low risk pregnancy is managed by primary-care midwives and those with increased risk are managed by secondary (hospital) care. Although back and forth referral between primary and secondary care does occur, formal agreements relating to integrated care – where this strict delineation between the primary and secondary care sectors is blurred – are rare. In practice, there is little-to-no continuity of care when a woman is referred from primary to secondary care.

Following the publication of a report detailing perinatal mortality statistics across European nations, where it appeared that perinatal mortality in the Netherlands was higher than that of comparable countries, a strategic review of maternity services was commissioned⁷. The review panel was of the opinion that strict delineation of care may affect collaboration between maternity service providers. As a direct result, changes to the midwifery service provision in the Netherlands are being considered, with the emphasis shifting toward a so-called model of integrated care⁸ where the separation between primary and secondary care will become less rigid.

New integrated models of care are likely to result in changes in the working patterns of midwives and may affect their job satisfaction. It is important, therefore, to benchmark current levels of job satisfaction and to more fully explore the drivers of job satisfaction among midwives prior to changes in the system of care.

The concept of job satisfaction is generally accepted to consist of many aspects such as: job autonomy, potential for development and financial reward, working relationships, work demands, social support at work, workplace agreements, organization, and the influence of work on private life⁹.

Furthermore, job satisfaction is also seen as an important element of work quality and workplace relations¹⁰. Studies show a correlation between job

satisfaction and efficiency¹¹, productivity¹², wellbeing¹³, as well as the working atmosphere¹⁴. In the nursing, midwifery and medical professions, ways of working which lead to increased job satisfaction have been shown to improve patient safety, reduce costs, and increase the quality of patient/client experience^{15,16,17,18}.

Existing, small-scale (qualitative) studies considering the views of midwives show that direct client contact, continuity of care, positive support, teamwork, and the ability to work independently and autonomously lead to higher levels of satisfaction^{19, 20}. In this study, we have measured Dutch midwives' job satisfaction. Furthermore, we compare satisfaction levels between hospital and primary-care midwives and examine the factors associated with job satisfaction. Our study of job satisfaction offers a comprehensive view of the opinion of midwives under the current system of care and identifies the drivers of job satisfaction, important knowledge for policymakers, in the Netherlands and elsewhere, who are considering changes in the provision of maternity care.

Methods.

Design: This is a quantitative study using a cross sectional, self-administered, online questionnaire.

Sample: The study population is all practising midwives in the Netherlands (N = 3150). Our sample includes 103 hospital midwives and 405 primary-care midwives.

Data collection: Invitations were sent by email to 452 (out of a total of 532²) midwifery practices that included an e-mail address on their website. During the first week of March 2015, these practices received a personal email containing information about the study and a link to the survey. In this email, we asked that a link to the survey was forwarded to all midwives in the practice inviting their participation in the study. The survey was open to all and accessible via Survey Monkey from February 2015 until April 2015.

An email was also sent to the head-of-department in all hospitals in the Netherlands with maternity-care facilities (n = 91) asking them to forward the email invitation to participate to all colleagues (including hospital midwives).

In addition to this direct approach, we also used snowball sampling. The Royal Dutch Organization of Midwives (KNOV) placed a notification on their website, asking all members to participate in this study. Each midwife was

asked to distribute the recruiting email among other colleagues after completion of the survey. A first reminder email was sent to all hospitals and midwifery practices after four weeks and further reminders were placed on the KNOV website and forums, such as the hospital midwives' group within the KNOV. Following this, no further reminders were sent.

There was no restriction on the number of participants per hospital or practice. Data were stored electronically in an encrypted database.

Measures: The Leiden quality of work questionnaire⁹ (LQWLQ), was used to measure job satisfaction. The formulation of the questions was adjusted for maternity-care professionals in consultation with the author of the questionnaire (see additional files 1 and 2 for Dutch and English versions of questionnaire). In total, the questionnaire consists of ten domains, each containing several factor-statements. Nine of the domains explore various elements related to job satisfaction and one domain is specifically focused on job satisfaction. This 'job satisfaction scale' ($\alpha = 0.805$) consists of the following six factor-statements: "If I had to choose, I'd choose this job again"/"I would like to change my job"/"I'm satisfied with my job"/"I would recommend this job to a friend"/"When I applied, this was the job that I wanted"/"I often have to do work that I'd rather not do".

Respondents were asked to answer each statement using a four-point scale (ranging from 1: totally disagree to 4: totally agree). The domain "job satisfaction" was defined as the mean of the six statements. A higher mean score indicated a higher level of job satisfaction. Negatively formulated questions were reversed for analysis.

In addition, we collected information about respondents' demographic characteristics such as gender, age, years of experience in profession and current organisation, as well as employment status and average working hours per week.

We defined two categories of midwife in the Netherlands. They were: 'hospital midwife' (midwife was employed in a hospital in the secondary or tertiary-care sector) or 'primary-care midwife' (midwife was self-employed or employed by a primary care midwifery practice). In addition, respondents were offered the option of 'other' if their occupation did not fit these categories.

The questionnaire was piloted prior to the survey by five midwives from the primary and secondary care sectors. This resulted in the simplification of

two questions and the deletion of one that had been included twice in the draft questionnaire.

Statistical methods: We compared hospital midwives with primary-care midwives. A mean score for each of the domains for each group was calculated. We used t-tests and linear regression to assess the differences in job satisfaction between the two groups. We then used a bivariate analysis (Pearson's correlation coefficient) to examine the strength of the within-group relationship between each of the domains and mean job satisfaction. Lastly, we used multiple linear regression to examine the effect of several independent variables (personnel and organisation, work demands and tasks, social support at work, working relationships, workplace agreements and referrals, autonomy, potential for development, financial reward, and the influence of work on private life) on job satisfaction. A p-value of 0.05 or lower was considered statistically significant.

IBM SPSS version 22.0 (SPSS, Inc., Chicago, IL, USA) was used for data analysis. Descriptive statistics, chi-square, bivariate and multi-variable regression analyses were performed and normality of the outcome measures was examined. In calculating means, we excluded those with more than one missing item on that scale.

Ethical considerations: This study forms part of larger study²¹ that was submitted to the medical ethics committee of VU University Medical Center (reference number 2014/030). As the research did not involve patient contact, the committee found the study to be exempt from ethical approval under existing Dutch legislation²². The authors have no conflicts of interest.

Results.

Given the method of recruitment (i.e. invitations to midwifery practices and hospital departmental heads and via the KNOV notification on their noticeboards), we are unable to determine the precise response rate. However, given that there are 3150 practising midwives in the Netherlands at the time of the study and that we had 508 midwife respondents, we estimate that our sample includes almost 17% of all practicing midwives in the country.

Fifty-eight of the 566 questionnaires we received were excluded because they were incomplete. Analysis of the incomplete responses showed that these data were missing completely at random (MCAR). No further analysis was performed on these MCAR data. Data were found to be sufficiently normally distributed to allow parametric testing. None of the midwife

respondents used 'other' to describe their practice area. Hospital midwives make up 28% of all midwives in the Netherlands; our sample included 11% of hospital midwives and 18% of primary-care midwives.

The majority of respondents were female (>98%). In addition, although the numbers were small, men were over represented in the hospital-midwife category: the national average is <2% and in our survey it was 4%.

The distribution of postcodes showed that all twelve provinces in the Netherlands were represented. We received responses from 97% of all maternity-hospitals (n=89) in the Netherlands.

Table 1. Demographic characteristics of our sample

	Hospital Midwives* n (%)	Primary- care Midwives** n (%)	P value
total	103 (100)	405 (100)	
Gender: Male	4 (4)	4 (1)	0.05
Female	99 (96)	401 (99)	
Mean Age (±SD)	42 (9.8)	38 (10.5)	0.001
Employed	103 (100)	77 (19)	0.001
Self employed	0 (0)	313 (77)	0.001
Total years of work experience Mean (SD)	16 (9.0)	13 (8.9)	0.002
Years of experience at current	9.3 (7.0)	9.7 (7.9)	0.59

work place Mean (SD)			
Working hours per week (SD)	29 (5.6)	44 (14.9)	0.001

* Total number of hospital midwives registered in the Netherlands: N = 919

** Total number of primary care midwives registered in the Netherlands: N = 2231

Table 1 shows the demographics of our sample population. The mean age of all respondents was 40 years. Hospital midwives were slightly older than primary-care midwives (42 yrs. vs. 38 yrs., $p < 0.001$). Hospital midwives were significantly more likely to work fewer hours ($n = 29$, 95% CI 27-30, $p < 0.001$) compared to primary-care midwives ($n = 44$, 95% Confidence Interval [CI] 42-45, $p < 0.001$). In addition, the range of working hours per week was significantly smaller for hospital midwives than primary-care midwives (28 vs. 142 respectively, $p < 0.001$). Hospital midwives had slightly more experience compared to primary-care midwives (16 yrs., 95% CI 14.2-17.8 vs. 13 yrs., 95% CI 11.9-13.74 respectively, $p < 0.002$). All hospital midwives were salaried employees (100%). The majority (77%) of primary-care midwives were self-employed.

Table 2. Mean scores[^] [standard deviation] for hospital and primary-care midwives for questions in 'job satisfaction' domain

Individual factor statements for 'job-satisfaction' domain	Overall mean for both professional groups. mean [SD]	Hospital Midwives* mean [SD]	Primary Care Midwives** mean [SD]	P value
If I had to choose again, I'd choose this job	3.12 [0.68]	3.15 [0.64]	3.02 [0.74]	0.54
I would like to change jobs	3.18 [0.71]	3.02 [0.72]	3.03 [0.76]	0.28
I'm satisfied	3.21 [0.59]	3.06 [0.59]	3.13 [0.63]	0.31

with my job				
I would recommend a friend to take this job	2.87 [0.67]	2.90 [0.64]	2.62 [0.72]	0.001
When I applied this is the job that I wanted	3.36 [0.55]	3.25 [0.52]	3.27 [0.59]	0.70
I often have to do work that I would rather not do	3.03 [0.57]	3.04 [0.53]	2.86 [0.64]	0.11
Domain score per profession (mean) SD	3.13 [0.47]	3.07 [0.48]	3.02 [0.48]	0.45

^ Each question had a maximum possible score of 4

*n =103 **n = 405

Table 2 shows the difference in means between hospital and primary-care midwives on the individual statements from the domain of 'job satisfaction'. Overall, both groups of midwives were either satisfied or very satisfied with their jobs (mean satisfaction level was: satisfied for combined groups: 3.13, 95% CI 2.9-3.16).

Mean job satisfaction between the two groups of midwives did not differ significantly. Hospital midwives showed a mean satisfaction of 3.07 (95% CI 2.97-3.17) compared to 3.02 (95% CI 2.98-3.08) for primary-care midwives.

When the mean scores for the factor-statements of the domain 'job satisfaction' were analyzed individually, no differences emerged with the exception of hospital midwives, who were significantly more likely to recommend their job to a friend ($p = 0.001$).

Table 3. Mean scores [standard deviations] for hospital and primary-care midwives for other domains

Domain	Overall mean	Mean score hospital	Mean score primary-care	P value
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	both groups (SD)	midwives* (SD)	midwives** (SD)	
Personnel & organization	3.17 [0.37]	3.00 [0.30]	3.21 [0.38]	0.001
Work demands & tasks	2.60 [0.25]	2.49 [0.24]	2.63 [0.25]	0.001
Social support at work	3.03 [0.30]	2.93 [0.22]	3.06 [0.31]	0.001
Working relationships	2.74 [0.28]	2.78 [0.23]	2.74 [0.29]	0.190
Workplace agreements & referrals	2.19 [0.31]	2.20 [0.30]	2.19 [0.32]	0.759
Autonomy	2.70 [0.33]	2.52 [0.28]	2.74 [0.33]	0.001
Potential for development	2.98 [0.39]	2.91 [0.40]	2.99 [0.39]	0.080
Financial reward	2.58 [0.60]	2.70 [0.56]	2.55 [0.61]	0.024
Influence of work on private life	2.60 [0.63]	2.13 [0.47]	2.72 [0.60]	0.001

*n =103 **n = 405

Table 3 shows the mean scores for hospital and primary-care midwives for all other domains. For both groups of midwives, the three domains with the highest overall scores were 'personnel and organization', 'social support at work' and 'potential for development'. There were differences between groups in these scores with primary-care midwives generally scoring higher. These differences were statistically significant for the following domains: 'personnel and organization' ($p = 0.001$), 'social support at work' ($p = 0.001$),

'work demands and tasks' (p=0.001), 'autonomy' (p=0.001) and 'influence of work on private life' (p=0.001).

Table 4. Within-group correlation (P_r) between job satisfaction and each of the other domains for hospital and primary-care midwives

Domain	Correlation coefficient hospital-care midwives* (p value)	Correlation coefficient primary-care midwives** (p value)
Personnel & organisation	0.404 (0.001)	0.297 (0.001)
Work demands & tasks	0.314 (0.002)	0.380 (0.001)
Social support at work	0.526 (0.001)	0.410 (0.001)
Working relationships	0.356 (0.001)	0.264 (0.001)
Workplace agreements & referrals	0.448 (0.001)	0.251 (0.001)
Autonomy	0.522 (0.001)	0.370 (0.001)
Potential for development	0.514 (0.001)	0.499 (0.001)
Financial reward	0.316 (0.002)	0.271 (0.001)
Influence of work on private life	-0.025 (0.811)	0.256 (0.001)

*n= 93 **n = 382

Table 4 shows the differences between hospital and primary-care midwives in the within-group correlation of the means of all the other domains to the mean of 'job satisfaction' using Pearson's correlation coefficient.

Overall, the correlations for each of the domains with job satisfaction were higher for hospital midwives. For hospital midwives, strong correlations were observed in three domains: 'social support at work' ($r = 0.526$), 'autonomy' ($r = 0.522$), and 'potential for development' ($r = 0.514$). For primary-care midwives, the strongest correlations were in the domains: 'potential for development' ($r = 0.514$), 'social support at work' ($r = 0.410$), and 'work demands and tasks' ($r = 0.380$).

For each group, we looked more closely at the factor-statements within each domain that contributed most strongly to the relation between that domain and job satisfaction. For hospital midwives, the domain with the strongest correlation was 'social support at work'. This domain has eight factor-statements. Of these, the factor-statement "I experience the other partners in the care-chain more like colleagues than competitors" (data not shown) revealed the strongest correlation to job satisfaction. For primary-care midwives the strongest correlation to job satisfaction was 'potential for development'. This domain has five factor-statements. The factor-statement with the strongest correlation to job satisfaction was "In my work, I can develop sufficiently".

Table 5. Regression model predicting job satisfaction for hospital and primary-care midwives

	Hospital midwives*		Primary-care midwives**	
<u>Model</u> variable s	Beta	95%C.I.lower/up per	Bet a	95%C.I.lower/ upper
Age	- 0.089	-0.017/0.008	0.0 31	-0.006/0.009
Total years of experie nce in professi	- 0.259	-0.026/-0.001	- 0.1 57	-0.019/0.002

on				
Total years of experience in current job	0.146	0.003/0.022	0.050	-0.005/0.12
Working Hours per week	0.170	0.002/0.027	0.016	-0.002/0.003
Personnel & Organization	0.042	-0.227/0.361	0.068	-0.029/0.203
Work demands & tasks	0.171	--0.020/0.627	0.186	0.116/0.376
Social support at work	0.185	-0.028/0.851	0.199	0.168/0.451
Work relationships	0.001	-0.359/0.364	0.034	-0.094/0.208
Workplace agreements & referrals	0.220	0.077/0.543	-0.004	-0.130/0.119
Autonomy	0.066	-0.188/0.418	0.108	0.024/0.299
Potential for		0.112/0.516	0.3	0.278/0.511

development			15	
Financial reward	0.094	-0.056/0.216	0.063	-0.023/0.123
Influence of work on private life	-0.143	-0.485/0.12	0.91	0.005/0.236
R ² Model	R ² = 0.567		R ² = 0.412	

Model multiple regression analysis: outcome = mean job satisfaction. Predictor(s) demographic characteristics = age / total years of experience in profession / total years in current job/hours per week worked plus work-related elements of job satisfaction = personnel & organization/ work demands and tasks/, social support at work/ working relationships/ workplace agreements & referrals/autonomy/potential for development/financial reward/influence of work on private life.

*n =103 **n = 405

Table 5 shows the results of a linear regression analysis that used demographic characteristics (age, years of work experience, years at current workplace and working hours-per week) plus the nine domains associated with job satisfaction (personnel and organization, work demands and tasks, social support at work, working relationships, workplace agreements and referrals, autonomy, potential for development, financial reward and the influence of work on private life) to predict job satisfaction for each group.

Our model shows that for hospital midwives, the domains 'working hours per week' (p=0.022), 'potential for development' (p=0.003) 'workplace agreements and referrals' (p=0.010) and 'total years in the profession' (p=0.034) were all significant predictors for job satisfaction.

For primary-care midwives, the domains 'potential for development' (p=0.001), 'social support at work' (p=0.001), 'work demands and tasks'

($p=0.001$), 'autonomy' ($p=0.022$) and 'influence of work on private life' ($p=0.041$) were all found to be significant predictors for job satisfaction.

The R^2 for hospital midwives was .57 and for primary care midwives it was .41.

Discussion.

Our study is the first national study to compare job satisfaction between hospital and primary-care midwives. Based on the total number of midwives practising in the Netherlands ($n=3150$) our survey has a collective response rate of 17% of all midwives. Our study showed that all midwives in our survey were satisfied with their jobs and that there was no significant difference between hospital midwives and primary-care midwives in terms of overall satisfaction. While this is broadly in line with other, smaller-scale studies on the subject^{17,18} there are some important differences.

We found that the strongest predictor for job satisfaction for both groups of midwives was the domain 'potential for development'. This suggests that the facilitation of ways in which midwives can develop should be of primary concern to policy-makers. This is especially important in the context of midwifery service provision and changing models of care both in the Netherlands and internationally.

Midwives' professional organizations are becoming increasingly aware of the importance of the components of job satisfaction. Within the Netherlands the KNOV has campaigned for the reduction in the caseloads of primary-care midwives and for an increase in the potential for development of the midwives' scope of practice. In the UK, in response to a Government white paper on healthcare reform, the Royal College of Midwives (RCM) stated that almost half of all midwives surveyed wanted further training and development²³.

Other healthcare professionals have also commented on the importance of the potential for development within their role. For example, Bjorka et al²⁴ found that the introduction of career ladders significantly improved job satisfaction in Norwegian nurses. Clearly, an understanding of the importance of the potential for development to midwives can be advantageous when considering the strategic planning of maternity services.

Potential for development can also be seen in terms of the ongoing need to develop professionally, such as a commitment to life-long learning.

Professional development will of course, have cost implications for employers and midwives themselves²⁵. For Dutch midwives, who have different terms of remuneration according to the type and place of their practice (which, in turn, may be affected by new models of care), this is a particularly important fact for policymakers to consider^{8, 26}.

Insufficient opportunity for development was also associated with higher rates of burnout among Australian hospital midwives²⁷. In addition, Yoshida and Sandall²⁸ found that rates of occupational burnout are not only higher among midwives than those in comparable professions, but also that the incidence of 'midwife burnout' is on the rise. Like 'potential for development', burnout is linked to other aspects of job satisfaction²⁹.

The domain 'workplace agreements' (which contains factor-statements relating to workplace protocols) was also a significant predictor for job satisfaction for hospital midwives. Over the last twenty years, as evidence-based practice has become more common, widespread reliance on protocols has become the norm³⁰. However, it is important to note that these protocols need to be of sufficient quality and up-to-date in order to ensure that they are fit-for-purpose. A recent national survey of the proliferation of labour-ward protocols in the Netherlands found that those protocols were of variable quality and often out of date³¹. Over reliance on poor protocols may lead to a false sense of security and may harm patient care³².

For hospital midwives in our survey, the domain 'working hours-per-week' was also a significant predictor of job satisfaction. Work/life balance is an oft-cited issue in the promotion of job satisfaction^{33,34}. Internationally, the introduction of flexible work schedules has been suggested as a way to mitigate work constraints³⁵. Among midwives in the Netherlands it has been hypothesized that having more regular hours may be the reason for the shift to hospital practice³⁶. Two out of three Dutch midwives work part-time and most new graduates indicate a desire to work part-time by the time they reach the age of thirty³⁷.

There is evidence that shows that older workers contribute more value in the workplace than their younger counterparts³⁸. Studies of nurses indicate that keeping staff in-post, especially those with more experience is also linked to job satisfaction³⁹. Our survey certainly demonstrates that for hospital midwives in the Netherlands, having more experience led to higher levels of satisfaction.

The domain 'work demands and tasks' was a significant predictor of job satisfaction for primary-care midwives in our survey. For midwives and other healthcare providers, the pressure of work is cited as one of the main contributing factors leading to reduced motivation, increased levels of sickness, and ultimately, to leaving the profession^{40,41,42,43}. This situation is mirrored in the Netherlands where Dutch primary-care midwives receive payment according to how many clients they care for during pregnancy and birth. This payment schedule is set nationally and means that Dutch primary-care midwives must accept a high caseload in order to meet the nationally agreed salary for full-time employment. Although in recent years the norm of the number of clients in the average primary-care midwife's caseload has been reduced (from 112 to 105 per year³), there are calls to reduce it even further⁴⁴. Our survey suggests that this is a matter of importance for primary-care midwives in terms of their job satisfaction.

The domain 'social support at work' is also identified as a significant predictor of job satisfaction for primary-care midwives. This is important in the context of continuity-of-care models (COCM) characteristic of midwifery service provision in the Netherlands. While some studies report lower rates of burnout for primary-care midwives⁴⁵, others report higher levels of occupational stress and burnout among primary-care midwives⁴⁶. Nevertheless, in the Netherlands where the caseload norm of primary-care midwives are high (105 per year) the pressure of work can lead to a sense of isolation, stress and burnout among midwives⁴³. Research has confirmed the need to 'care for the carer', with reports of organizational or systematic stress, and even post-traumatic stress disorder, in healthcare professionals who feel isolated and lack good support networks at work⁴⁷. The recent initiative by the UK RCM⁴⁸: 'Caring for You Charter' is a good example of midwives' professional organizations encouraging key stakeholders to commit to improving support networks in the workplace. A system of formal mentoring and support among Dutch midwives (particularly in the context of new models of care) is likely to contribute to increased satisfaction levels. Formal arrangements for mentoring in midwifery settings have been shown to have merit⁴⁹.

Studies consistently confirm that elements which allow for a 'sense of control' are important to job satisfaction^{50,51,52}. We also found this to be true in our study. The ability to work autonomously and the influence of work on private life (being able to "leave work at work") were significant predictors of job satisfaction for primary-care midwives in our study. This has been reported in other studies of midwives^{53,54}, general practitioners⁵⁵,

and nurses⁵⁶. Primary-care midwives in the Netherlands are autonomous practitioners and they see this as an important facet of their work. Any changes to working practices of midwives should protect or improve their level of autonomy.

Primary-care midwives indicated that their level of job satisfaction was higher when their work least impinged on their private life. This is however, made difficult by the fact that primary-care midwives in the Netherlands often work long periods on-call. The European Working Time-Directive⁵⁷ dictates maximum working hours and minimal rest periods, but exempts self-employed persons. The Dutch Healthcare Inspectorate has said that self-employed primary-care midwives fall under the guidance issued for doctors⁵⁸, which states that there should be “a maximum of five on-call shifts per week”. Because 24 or even 48 hour shifts are not unknown in the Netherlands⁶, there is a clear need to establish what constitutes a safe maximum working period for primary-care midwives and to balance this with service needs.

Strengths and limitations.

Our survey has explored the views of Dutch midwives related to their job satisfaction. It provides a deeper understanding of the underlying differences in the factors that contribute to the job satisfaction of Dutch midwives and how those factors relate to their working practices.

Our respondents came from most areas of the Netherlands and they mirror the population of Dutch midwives. We used a validated questionnaire and piloted our survey with hospital and primary-care midwives.

Our study is limited by the fact that our sample was self-selected and was dependent on willingness to share our survey on the part of the person responsible for the email in the practice setting (primary-care or hospital). We attempted to compensate for this by placing notices encouraging all midwives to complete the survey on the midwives' professional organization' website. However, more primary-care midwives than hospital midwives are members of the midwives' professional organization (94% vs 52%²), a factor that may have contributed to the lower proportion of hospital midwives accessing the questionnaire via the KNOV route. Nevertheless, since we received replies from 97% of all hospitals in the Netherlands, we are confident that the number and geographic distribution of responders was high enough to provide valid insights.

Relevance

Midwifery in the Netherlands is changing; nationally, there is a trend toward hospital employment for midwives² and new models of care are being introduced. These changes have the potential to alter the way midwives work. A deeper understanding of what midwives themselves see as important contributors to their job satisfaction, before the introduction of substantial change, is necessary and prudent.

Our study offers a better understanding of what midwives say is important to them; its message is also relevant internationally, where it has been stated that the midwifery profession has the opportunity to learn from changes to practice in the Netherlands⁵⁹.

Conclusion.

Overall, Dutch midwives are satisfied with their jobs. Significant differences in predictors for job satisfaction between hospital and primary-care midwives in the Netherlands exist. Given job satisfaction affects the quality of care (and satisfaction with that care), these differences are important to consider when planning workforce needs and should be used by policymakers in the Netherlands and elsewhere when planning new models of care.

List of abbreviations.

KNOV: Koninklijke Nederlandse Organisatie van Verloskundigen (Royal Dutch Organisation of Midwives)

NVOG: Nederlandse Vereniging van Obstetrie en Gynaecologie (Dutch Society of Obstetricians and Gynaecologists)

LQWLQ: The Leiden Quality of Work Life Questionnaire

MCAR: Missing Completely at Random

RCM: The Royal College of Midwives of the UK

COCM: Continuity of Care Model

Declarations.

Ethics and consent to participate.

This study is part of a larger study²¹ that was submitted to the medical ethics committee of VU University Medical Centre (reference number 2014/030). The study was approved. Ethical approval was not considered necessary according to Dutch legislation²².

Consent. Not Applicable

Availability of data and materials.

Data were stored electronically in an encrypted database. Copies of datasets used for this study may be available from the corresponding author on reasonable request.

Competing interests.

The authors declare no competing interests.

Funding.

No funding was obtained for this study.

Authors 'contributions.

DC, HP, CV & MR designed the study DC, HP, MH & MR undertook the analysis, DC wrote the article with substantial assistance and contributions from HP, CV, SJ, MH RdV & MR. All authors have read and approved the manuscript

Acknowledgements.

The authors would like to thank Dr. v.d. Doef for the permission to adapt and use the Leiden Quality of Work Questionnaire.

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5

Experienced job autonomy among maternity care professionals in the Netherlands.

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Birth 2015, 42 (2): 156-64.

Abstract

Objective: High levels of experienced job autonomy are found to be beneficial for healthcare professionals and for the relationship with their patients. The aim of this study was to assess how maternity care professionals in the Netherlands perceive their job autonomy in the Dutch maternity care system and whether they expect a new system of integrated maternity care to affect their experienced job autonomy.

Design: A cross-sectional survey. The Leiden Quality of Work Life Questionnaire was used to assess experienced job autonomy among maternity care professionals.

Setting: Data were collected in the Netherlands in 2015.

Participants: 799 professionals participated of whom 362 were primary care midwives, 240 obstetricians, 93 clinical midwives and 104 obstetric nurses.

Findings: The mean score for experienced job autonomy was highest for primary care midwives, followed by obstetricians, clinical midwives and obstetric nurses. Primary care midwives scored highest in expecting to lose their job autonomy in an integrated care system.

Key conclusions: There are significant differences in experienced job autonomy between maternity care professionals.

Implications for practice: When changing the maternity care system it will be a challenge to maintain a high level of experienced job autonomy for professionals. A decrease in job autonomy could lead to a reduction in job related wellbeing and in satisfaction with care among pregnant women.

Introduction

Job related wellbeing and satisfaction is of importance both for maternity care professionals and for the women they take care of. Job autonomy, defined as the degree of control a worker has over his or her own immediate scheduling and tasks (Liu et al., 2005), is one of the conditions that influence job related wellbeing and satisfaction (Katerndahl et al., 2009). In various professional groups a linear relationship was found between experienced job autonomy and job satisfaction (Busis et al., 2017; Jerkovic-Cosic et al., 2012; Katerndahl et al., 2009; Scheurer et al., 2009). Job autonomy is of high importance as it protects healthcare professionals against somatic complaints, psychological distress in their work, and burnout (de Jonge, 1998).

Besides the positive effects for the maternity care professional, a high level of job autonomy is shown to have a positive effect on the empowerment of women and has a positive influence on the professional-patient relationship (Walsh and Devane, 2012). This can be clarified by the correlation between job-autonomy, job related stress and satisfaction of professionals, with patient satisfaction and quality of care (Forster et al., 2016).

Maternity care services are shifting the focus of care from the professional and organisational interests to the interests of women and their family (Watkins et al., 2017). Organisational changes and job uncertainty can influence job conditions such as job autonomy (Hodnett et al., 2013). As the Netherlands is in the process of changing the maternity care system, this may influence the level of experienced job autonomy of professionals. Shifting towards a system of integrated care provided by professionals from multiple disciplines, will result in professionals working together in taking care of women. This might possibly influence autonomous decision making of both midwives and obstetricians in the Netherlands.

Similar to midwifery care in countries such as Canada (Canadian Association of Midwives, 2010) and New Zealand (Grigg and Tracy, 2013), the current maternity care system in the Netherlands is characterised by risk-selection. However, in contrast to these countries, in the Netherlands different professionals provide segmented perinatal maternity care. Primary care midwives in the Netherlands are independent practitioners with a legally defined sphere of practice and work in a community setting (Amelink-Verburg and Buitendijk, 2010). Primary care midwives are responsible for risk selection and autonomously provide care to women at low risk for complications during pregnancy, labour and in the post-partum period. Women at low risk for complications can choose to give birth either at home, in a hospital or in a birth

centre. At the onset of antenatal care 86% of all women in the Netherlands receive midwife-led care (College Perinatale Zorg, 2016; Utrecht: Perined, 2016). During pregnancy and labour, women at increased risk or with a complication are referred to secondary, obstetrician-led care in a hospital setting. In this setting women are assisted by obstetricians, residents, clinical midwives (midwives who work in a hospital setting) and obstetric nurses. At the onset of labour 51% of all women are in midwife-led care and approximately 29% of all births eventually take place in primary midwife-led care (Utrecht: Perined, 2016).

Due to supposed relatively high perinatal mortality rates in the Netherlands (Mohangoo et al., 2008) the Dutch maternity care system has become the subject of debate. It has been suggested that closer collaboration between primary and secondary care would lead to better quality of care and fewer perinatal deaths (Advies Stuurgroep zwangerschap en geboorte, 2009). Some argued that reorganising maternity care and combining primary and secondary care into one system might result in better outcomes (Evers et al., 2010; Posthumus et al., 2013). Others have pleaded for experimenting with different types of organisation of care and evaluating these experiments before changing the system (Prins et al., 2014). However, although professional organisations of both obstetricians and midwives are positive regarding the integration of maternity care, and a guideline for integrated care has been published (College Perinatale Zorg, 2016), opinions differ with regard to the optimal organisational structure (Perdok et al., 2016b). A complicating factor is that historically there have been tensions between midwives and obstetricians in the Netherlands due to a power imbalance, which still plays a role now. According to van der Lee et al., the establishment of professional boundaries has undermined effective teamwork and inter-professional collaboration (van der Lee et al., 2014). This has led, in some cases to midwives and obstetricians not perceiving themselves as equals within the team (Lee, 2014).

Integrated care is expected to lead to a shift in professionals' tasks and responsibilities and more professionals taking care of women, which could affect experienced job autonomy (Posthumus et al., 2013). For a successful implementation of integrated maternity care, it is of importance that the autonomy of different professionals within the team is maintained (Perdok et al., 2016a). To evaluate the effect of new models in the maternity care system it is vital to measure experienced job autonomy in the current system. The findings are also relevant to other countries that are in the process of changing their maternity care system.

The aims of this study were to assess how maternity care professionals in the Netherlands perceive their job autonomy and whether professionals expect to lose job autonomy in a system of integrated maternity care.

Methods

Data were used from a broad survey among professionals in maternity care including midwives, obstetricians, obstetric nurses, maternity care assistants and paediatricians.

For this study we used data from obstetricians, midwives and obstetric nurses in the Netherlands. We focused on these groups because we expect a shift in these professionals' tasks and responsibilities.

Data were collected using a self-administered online questionnaire (Survey Monkey, Palo, Alto, CA, USA), from February 2015 till May 2015.

The questionnaire contained 126 questions on multiple aspects of maternity care. For the present study only the questions on demographic characteristics and perceived job autonomy were used.

In the Netherlands a total of 3150 midwives (Netherlands Institute for Health Services Research (NIVEL), 2016), 959 obstetricians and 2835 nurses are active in maternity care (Intelligence group, 2017). The majority of midwives, 2231 (71%), work in primary care and 919 (29%), work as clinical midwives (Netherlands Institute for Health Services Research (NIVEL), 2016). The majority of Dutch obstetricians provide obstetric care but 298 are member of the Dutch Society for Obstetrics and Gynaecology (NVOG) working group perinatology and maternal diseases and presumably have obstetrics as their main field of practice.

In order to reach an appropriate sample of primary care midwives for this study, invitations were sent by e-mail (where the e-mail address could be obtained from their website) to 452 midwifery practices from a total of 532 practices (Netherlands Institute for Health Services Research (NIVEL), 2016) in the Netherlands in 2015.

To reach obstetricians, clinical midwives and obstetric nurses an e-mail was sent to a contact person of all 91 Dutch hospitals with an obstetric department. The e-mail contained information on the study and a link to the survey. Addressees in midwifery practices and obstetric departments were asked to distribute the invitation e-mail among colleagues.

In addition to this, the Royal Dutch Organisation of Midwives (KNOV) of whom 84% of all midwives are a member, placed a notification on their website asking midwives to participate in this study. There was no restriction on the number of participants per hospital or practice.

All midwifery practices and obstetric departments received a reminder by e-mail in March 2015. Only non-identifiable information was available for the researchers who analysed the data.

Measures

Job conditions were assessed with the Leiden Quality of Work Life Questionnaire for Nurses (LQWLQ-N) developed by van der Doef (van der Doef and Maes, 1999). This questionnaire is a validated instrument to examine job satisfaction, of which "decision authority" is a characteristic, among nurses. The formulations of the questions were adjusted for maternity care professionals in consultation with the author of the instrument.

Job conditions were measured on a 4-point Likert-like scale ranging from 1 (totally disagree) to 4 (totally agree). Higher scores correlate with better job conditions. For the purpose of this study the domain "decision authority" was used to measure experienced job autonomy, which was defined as the mean of the five questions in this domain. This domain has five statements:

I continuously have to perform tasks I am ordered to do

In my work I am allowed to make decisions myself

I have a say in decisions related to work

I am free to choose when to do client related and non-client related tasks

I am free to perform my tasks according to my own insight.

Regarding the demographic characteristics information was collected on age, number of years of work experience and the number of working hours per week.

A steering group with representatives from obstetricians, midwives, obstetric nurses, paediatricians, clients and researchers was consulted and advised on all steps during the research process.

Ethical considerations

The study was submitted to the medical ethics committee of VU University Medical Centre (reference number 2014/030). Ethical approval was not considered necessary according to Dutch legislation (METc-VUmc, 2015).

Data analysis

The data were analysed using SPSS version 24.0 (SPSS, Inc., Chicago, IL, USA).

Descriptive statistics were computed and normality of the distribution of the outcome measure was examined. The scores were calculated as the mean of the items in the domain's subscale. Participants with more than one missing value within a subscale were excluded (van der Doef and Maes, 1999).

Independent ANOVA was used to examine the level of job autonomy of the professionals and their future perspective of job autonomy. A p-value of 0.05 or lower was considered statistically significant.

Multivariable linear regression analyses were performed to adjust for age, years of work experience and number of working hours per week, which might be associated with experienced job autonomy.

Findings

A total of 1896 professionals responded to the questionnaire, of whom 799 completed at least four questions of the domain "decision authority". Of the 91 obstetric hospital departments who were approached, respondents came from 88 departments. The number of midwifery practices from whom midwives participated was 242 (54% of the invited practices) and all provinces were represented in our sample. Analysis of incomplete responses in SPSS showed that data were missing completely at random (MCAR).

Table 1. Characteristics of participating maternity care professionals

	Total population n = 799 (100%)	Primary care midwives n = 362 (45.3%)	Obstetricians n = 240 (30.0%)	Clinical Midwives n = 93 (11.6%)	Obstetric nurses n = 104 (13.1%)
Age in years Mean (SD)	41.5 (10.68)	38.2 (10.65)	44.1 (10.01)	42.1 (9.66)	46.5 (9.63)
Years of work experience Mean (SD)	14.7 (9.60)	13.1 (8.96)	14.0 (9.96)	16.3 (8.91)	20.7 (9.02)

Working hours/week (SD)	40.6 (14.00)	43.4 (14.84)	47.2 (9.85)	28.8 (5.53)	26.3 (5.66)
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In total 799 participants were included of whom 362 were primary care midwives, 93 clinical midwives, 240 obstetricians and 104 obstetric nurses.

The mean age of obstetric nurses was the highest with 46.5 years and the primary care midwives had the lowest mean age of 38.2 years. In line with this, the obstetric nurses had the longest work experience with nearly 20.7 compared to 13.1 years for primary care midwives. The obstetricians scored highest in the mean number of working hours with 47.2 hours of work per week.

In Table 2 the experienced job autonomy scores are presented for the different maternity care professionals. Adjustment for age, number of years of work experience and number of working hours per week showed minor changes in the regression coefficients compared to the bivariate analysis. Primary care midwives had a significantly higher score (mean 2.94 on a 4-point scale) for experienced job autonomy compared to obstetricians (mean 2.73), clinical midwives (mean 2.70) and obstetric nurses (2.61).

Table 2. Experienced job autonomy scores by professional group (means ($\pm$ SD) and adjusted means with 95% Confidence Interval (CI))

	Experienced autonomy Mean (SD)	Experienced autonomy Adjusted mean* (95% CI)
Primary care midwives (n=362)	3.07 (0.40)	2.94 (2.77-3.11)
Obstetricians (n= 240)	2.88 (0.37)	2.73 (2.53-2.92)
Clinical midwives (n= 93)	2.82 (0.39)	2.70 (2.53-2.88)
Obstetric nurses (n=104)	2.73 (0.38)	2.61 (2.44-2.79)

Mean score (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree)

* Adjusted for age, work experience, working hours per week

Table 3 shows the item (statement) means and total subscale score of experienced job autonomy for the different professional groups. The lowest score given by all professionals was for the statement “I am free to choose when to do client related and non-client related tasks”.

Table 3. Item means and total subscale score of experienced job autonomy (means and SD)

	Primary care midwives n=362	Obstetricians n=240	Clinical midwives n= 93	Obstetric nurses n=104
I continuously have to perform tasks that I am ordered to do*	3.10 (0.56)	3.15 (0.50)	3.00 (0.44)	2.84 (0.58)
In my work I am allowed to make decisions myself	3.20 (0.53)	3.27 (0.49)	3.11 (0.50)	2.96 (0.42)
I have a say in decisions related to work	3.16 (0.56)	3.22 (0.46)	2.97 (0.60)	2.86 (0.53)
I am free to choose when to do client related and non-client related tasks	2.85 (0.67)	2.11 (0.69)	2.25 (0.64)	2.22 (0.61)
I am free to perform my tasks according to my own insight.	3.04 (0.53)	2.65 (0.62)	2.78 (0.57)	2.74 (0.48)
Total scale score	3.07 (0.40)	2.88 (0.37)	2.82 (0.39)	2.73 (0.38)

Mean score (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree)

* For analysis the score for this negatively formulated question was reversed.

In Table 4 the scores for the statement “In the future I expect to lose autonomy” are presented. Primary care midwives scored highest (mean 2.43), followed by obstetric nurses (mean 2.06), obstetricians (mean 1.99) and clinical midwives (mean 1.92).

Table 4. Scores on questionnaire item “Future perspective: I expect to lose autonomy in an integrated care system” by professional group (means ($\pm$ SD) and adjusted means with 95% Confidence Interval (CI))

	Mean (SD)	Adjusted mean* (95% CI)
Primary care midwives (n=362)	2.61 (0.78)	2.43 (2.13-2.73)
Obstetricians (n=240)	2.19 (0.64)	1.99(1.65-2.34)
Clinical midwives (n= 93)	2.11 (0.64)	1.92 (1.61-2.22)
Obstetric nurses (n=104)	2.30 (0.50)	2.06 (1.76-2.38)

Mean score (1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree)

* Adjusted for age, work experience, working hours per week

Discussion

In our study, which relates to the current model of midwifery care in the Netherlands, primary care midwives had a significantly higher score for job autonomy compared to obstetricians, clinical midwives and obstetric nurses. Primary care midwives also scored highest with regards to their future perspective of losing job autonomy, in a system of integrated maternity care.

Literature suggests that working outside a hospital setting is related to higher job satisfaction, primarily due to higher experienced job autonomy (McCourt et al., 2014a, 2014b; Pron, 2013). This is in line with our study, which shows that self-employed primary care midwives, who work outside the hospital, experienced the highest level of job autonomy. This corresponds with obstetricians in the Netherlands who are self-employed (mostly in peripheral hospitals) experiencing a higher level of job-autonomy compared to obstetricians employed by hospitals (mostly in academic hospitals) (Hugen, 2016). Our study shows that primary care midwives score highest in expecting to lose job autonomy in a new, integrated maternity care system. This is in contrast to clinical midwives who have a lower expectation to lose their job

autonomy. An explanation for this could be that, since clinical midwives already work under the supervision of an obstetrician in the current system, they do not expect much change in job autonomy. Surprisingly, the obstetric nurses who also work under supervision, score second highest in the expectation to lose their job autonomy. This could be caused by the fact that nurses seem to be highly satisfied with their job, and they generally attributed this satisfaction to the autonomy they were granted through delegation of tasks (meaning an intentional transfer of clinical tasks from one professional to another healthcare professional). (Riisgaard et al., 2016). Possibly, their expectation to lose job autonomy is caused by their expectation of a change in task delegation.

The obstetricians, clinical midwives and nurses in our study scored lower on experienced job autonomy compared to the primary care midwife. This could be caused by the widespread use of protocols and a more prescriptive form of maternity care in hospitals leading to a more regulated form of practice (Coyle et al., 2001).

Even though there were differences in experienced job autonomy between the professionals, in our study all professionals scored at least 2.7 on a scale of 4. A sense of job autonomy is of importance for professionals themselves as it can protect them from burnout (de Jonge, 1998). As well as this, a higher sense of job autonomy among midwives in midwife-led care settings is shown to have a positive effect on the empowerment of women and has a positive influence on the professional-patient relationship (Walsh and Devane, 2012).

Therefore, care must be taken to maintain a high level of job autonomy amongst all professionals when moving to a system of integrated maternity care.

Successful implementation of new staffing models requires fulfilment of certain preconditions. One of these conditions is that staff must be empowered and supported to establish their own ways of working which can increase professional autonomy (NHS National maternity review report, 2016). One example of a successful, alternative model is a self-directed nursing service “Buurtzorg” (neighbourhood care) in the Netherlands, which provides patient-centred home care. Under this model the organisation values professional autonomy and delivers care through small, local, self-managing nursing teams. Buurtzorg clients appreciate the consistent, compassionate and autonomous care. This is reflected in high levels of satisfaction in national surveys (Kreitzer et al., 2015). A recent study among nursing staff confirms that a higher degree of self-direction (self-perceived autonomy over patient care) leads to higher

satisfaction levels (Maurits et al., 2017). Another example is caseload midwifery, as a model of care whereby childbearing women receive their antenatal-, intrapartum- and postnatal care from one midwife, which leads to higher levels of experienced autonomy and increased job satisfaction among professionals (Edmondson and Walker, 2014). As well as this caseload midwifery increases women's satisfaction with antenatal, intrapartum and postpartum care (Forster et al., 2016).

Although it has been shown that job autonomy is of importance in different maternity care systems (Forster et al., 2016; Lavender and Chapple, 2004), there seems to be tension between job autonomy and collaboration between professionals (van der Lee et al., 2016). Literature shows that good collaboration of maternity care professionals, improves the quality of care (Hunter et al., 2008). Therefore, the challenge lies in finding the balance between maintaining a high level of job autonomy among professionals and good collaboration between professionals based on the needs of women. Lack of a clear definition, consensus and coordination between practitioners, researchers and policy leaders in relation to the concept of collaboration (Perdok et al., 2014, 2016a) adds to the challenge of finding this balance.

Strengths and limitations

A strength of this study is that different maternity care professionals were included whereas most studies focus on only one professional group (Pron, 2013). In addition, we received responses from the majority of primary care midwifery practices and hospitals with an obstetric department in the Netherlands, therefore giving a reliable picture of the views of professionals.

A limitation of this study is that the exact response rate of the participants cannot be established due to the method of (snowball) sampling. Midwifery practices and obstetric departments were invited by e-mail. Individuals did not receive a personalised link to the survey and therefore no information could be traced back to the respondents. In addition with the anonymity of the respondents, no information is available on the non-respondents and possible selection bias. Due to snowball-sampling the distribution of the recruitment e-mail depended on the willingness of the person who was responsible for the practices' e-mail. However, this was mitigated by the invitations on the professional groups' websites to participate.

The general idea that people are naturally reluctant to change must be taken into account when interpreting the results of this study.

Furthermore, the LQWLQ was validated to measure overall job-satisfaction among nurses whereas we focused our research on the domain of job autonomy and included obstetric nurses, midwives and obstetricians. As the LQWLQ does include the characteristic decision-authority, which was used to measure experienced job autonomy, we consider this a reliable instrument for our study.

Future research considering individual elements of job satisfaction may examine a separate validation of each the domains within the questionnaire.

More research is needed to explore how to optimise collaboration between professionals in order to improve the quality of maternity care and maintain the high level of job satisfaction.

Conclusions

This study shows that there is a significant difference in experienced job autonomy between maternity care professionals. Primary care midwives working in the community experienced the highest level of job autonomy and scored highest in expecting to lose their job autonomy in an integrated maternity care system.

Since a decrease in job autonomy could have a negative impact on job related wellbeing and satisfaction among professionals and the women for whom they care, the challenge is to maintain a high level of experienced job autonomy when changing the maternity care system. Further research is needed to evaluate experienced job autonomy in a system of integrated maternity care and its effect on the wellbeing of professionals involved as well as on patient care.

Ethical approval

The study was submitted to the medical ethics committee of VU University Medical Centre (reference number 2014/030). Ethical approval was not considered necessary according to Dutch legislation (METc-VUmc 2015).

Acknowledgements

We gratefully thank van der Doef for her advice in this study and the professionals who participated in this study.

Funding Sources

HP was supported by a grant of the Royal Dutch Organization of Midwives. The sponsor did not play a role in the collection, analysis or interpretation of the data, or in the writing of the manuscript.

Conflict of interest

The authors declare that they have no competing interests.

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6

How good is collaboration between maternity service providers in the Netherlands?

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Journal of Multidisciplinary Healthcare 2019, 12: 21-30.

Abstract

Aims: To examine the experiences with inter-professional collaboration of maternity-service providers in the Netherlands and to identify potential enhancing and inhibiting factors for inter-professional collaboration within maternity care in the Netherlands.

Background: Good collaboration between health care professionals is a key element of safe, effective care, but creating a collaborative culture can be challenging. Good collaboration requires, among other things, negotiating different professional orientations and the organizational constraints of hierarchies and scheduling.

Good collaboration is especially important in maternity care. In the Netherlands, sub-optimal collaboration has been cited as a significant factor in maternal deaths and in adverse incidents occurring in hospitals during evenings, nights, and weekends. In spite of its importance for effective maternity care, little is known about the nature and quality of collaboration between maternity care professionals. In order to fill this gap, we examined the inter-professional collaboration within multi-disciplinary teams providing maternity-services in the Netherlands.

Methods: Online survey of multi-disciplinary teams (consisting of hospital and primary-care midwives, doctors and carers) involved in the provision of maternity services in the Netherlands. We used a validated measure of collaboration (the Leiden Quality of Work Questionnaire) to analyse the attitudes of those involved in the provision of maternity services about multi-disciplinary collaboration in their work. We used descriptive and inferential statistics to assess differences between the groups.

Results: 40% of all respondents were not satisfied with collaboration within their multi-disciplinary team. Overall, mean collaboration scores were low. We found significant differences in mean collaboration scores between professional groups. Midwives – community and hospital based – were pessimistic about collaboration in future models of maternity care.

Discussion: In the Netherlands, collaboration in maternity care is less than optimal. Poor collaboration is associated with negative consequences for patient safety and quality of care. Strategies to address sub-optimal collaboration exist; however, no one-size-fits-all approach is identified in the literature.

Conclusion: Sub-optimal collaboration exists within the midwifery model of care in the Netherlands and the relationship between care providers is under pressure. This could affect patient safety and quality of care, according to the literature.

Key words: interprofessional communication, communication, multi-disciplinary team, interprofessional teamwork, interprofessional collaboration survey, questionnaire hospital midwife, primary-care midwife, midwifery, carer, doctor, nurse, maternity-care assistant, Integrated-care.

Background.

Optimal collaboration between professionals involved in the provision of healthcare is known to be a critical element of safe, effective care¹⁻³ and an essential feature of effective cost-management.^{4,5} Collaboration among the diverse professionals involved in the delivery of maternity care can be especially difficult: the challenges involved in creating a collaborative maternity care culture transcend countries and health systems.^{6,7}

In the Netherlands, in spite of the fact that the current Dutch midwifery model is well-regarded internationally,^{8,9} there are significant challenges to optimum collaboration. Maternity services in the Netherlands are organised into primary (community) and secondary (hospital) care, making collaboration and communication especially important.¹⁰

Midwives are the cornerstone of maternity-service provision in the Netherlands, managing more than 60% of all births.¹¹ While the majority of Dutch midwives work in primary care¹² where the emphasis is on normal physiology of birth, almost one-third of all midwives now practise in a hospital setting, where the emphasis is more towards pathology and births no longer defined as “physiological” (the Dutch term for a healthy birth).

Both groups of midwives commonly work in isolation from each other. Midwives working in primary care have developed good working relationships with other healthcare providers within the primary care setting.¹³ However, we know very little about the collaboration between hospital midwives and other members of the multi-disciplinary maternity care team.

In the Netherlands, a midwife may be the only obstetric professional in attendance at a birth – be that birth at home or in the hospital. More than 40% of all births to women with a higher risk profile, birthing in hospital, are managed solely by a hospital midwives.¹¹

Referral of birthing women from primary to secondary care often occurs during labour.¹⁴ This frequently involves the exchange of complex information in face-to-face communication between professionals who may or may not know each other, often by means of electronic patient-data systems that may not interface with each other. These factors present a serious challenge to the necessary collaboration between maternity service professionals.

In the Netherlands, sub-optimal collaboration has been cited as a significant factor in maternal deaths and in adverse incidents occurring in Dutch hospitals during evenings, nights and weekends.^{15, 16} One response to these adverse

outcomes has been the introduction of integrated models of care.¹⁷ It has been suggested that these models will improve communication and result in better perinatal outcomes.¹⁸ However, there is currently no evidence to support this suggestion and there is no consensus on the best way forward.¹⁹ In fact, we know very little about the nature of, and attitudes about collaboration between maternity care professionals, making it difficult to predict the effects of new models of care.

Existing studies on the subject of collaboration in maternity care have focused, for the most part, on whether perceptions between those involved are aligned²⁰ and what constitutes 'good' collaboration. In their international literature review, Downe and colleagues⁶ proposed a 'toolkit' for (establishment of) effective collaboration in maternity care. Van Helmond and colleagues²¹ searched the existing literature for examples of 'positive' collaboration and communication and found that there were several factors associated with good communication and collaboration. In addition, they found that parent's views were underrepresented in the literature. vd Lee et al²² evaluated collaboration between hospital obstetricians and primary-care midwives in the Netherlands as a result of inter-professional education based on a model developed for that purpose in Canada. Among other things, they found that the potential for improved collaboration with secondary care providers, such as obstetricians and paediatricians was emphasised, and a need was expressed for better, respectful communication. These studies have been useful, but they tell us little about what collaboration looks like in everyday practice or how partners-in-care feel about their collaborations. Principle aim: To examine the experiences with inter-professional collaboration within multi-disciplinary teams involved in the provision of maternity-services in the Netherlands.

A secondary objective of our study was to shed light on the current situation of inter-professional collaboration within maternity services in the Netherlands, and has a wider relevance for providers of maternity services elsewhere.

Methods.

Design: We carried out a cross-sectional survey using a self-administered, online questionnaire.²³

Sample: The study population consisted of all practising midwives (n = 3,150), obstetricians, paediatricians and residents (n = 959), nurses (n = 2,835) and maternity-care assistants (n = 9,966) in the Netherlands.

For the purposes of this study we identified four categories of maternity care providers, starting with two types of midwives. A 'hospital midwife' (HM) is employed in a hospital in the secondary or tertiary-care sector; a 'primary-care midwife' (PCM) is self-employed or employed by a primary-care midwifery practice. In the third category 'carer', we included obstetric-nurses (registered-nurses with an additional obstetric and gynaecology training course), general nurses (registered nurse) and maternity-care assistants (MCA). In the Netherlands, MCAs are a distinct profession, they can be employed or self-employed, and work in different settings across primary and secondary care.²⁴ They provide support to midwives in either setting, helping at births and providing assistance to women with basic needs following the birth.

The last category was 'doctor', consisting of obstetricians, paediatricians and residents-in-training (most commonly to be an obstetrician, general practitioner or specialist in tropical medicine). In addition, we offered respondents the option of 'other' if their occupation did not fit any of these categories.

We defined 'multi-disciplinary team' as the collaborating professionals involved in the chain of maternity service provision in the healthcare region where the respondent worked.

Data collection and analysis:

During the first week of March 2015, invitations were sent by email to 452 of the 532 midwifery practices in the Netherlands that included an email address on their website.¹² Practices received an email containing information about the study and a link to the survey. The survey was only available in Survey Monkey (via the link) from February 2015 until April 2015. Questions were numbered consecutively and the order of completion was fixed. However, respondents could move forward and backwards and change answers while completing the questionnaire. No incentives financial or otherwise were offered and participation was entirely voluntary. Participation and return of the questionnaire was deemed to be informed consent.

An email was also sent to the head of departments in all hospitals in the Netherlands with maternity-care facilities (n = 91) and to the national representative organisation of maternity care-assistants (knowledge centre for maternity care assistants, KCK) asking them to distribute the questionnaire among all maternity-service professionals in their institutions.

In addition to this direct approach, we used snowball sampling. The Royal Dutch Organization of Midwives (KNOV) and the KCK placed a notification on their websites, asking all members to participate in this study. Members were asked to distribute the recruitment email among other colleagues after completion of the survey. After four weeks, a reminder email was sent to all hospitals and midwifery practices and further reminders were placed on the website and forums frequented by maternity care professionals.

There was no restriction on the number of participants per hospital, practice, or birth centre. No specific measures were used to prevent multiple entries. Data were stored electronically in an encrypted database.

Collaboration was assessed using the Leiden Quality of Work Life Questionnaire for Nurses (LQWLQ-N). This questionnaire is a validated instrument used to examine job satisfaction among nurses.²² The questionnaire consists of ten domains (of which workplace collaboration is one). The formulation of the questions was adjusted for maternity care professionals in consultation with the author of the questionnaire. Respondents' answers were measured on a 4-point Likert scale ranging from 1 (totally disagree) to 4 (totally agree). Negatively worded questions were reverse coded for analysis.

For the purpose of this study we only used the domain 'workplace collaboration'. This domain consists of seventeen factor statements, eight related to within-organisation collaboration and eight related to within multi-disciplinary team (MDT) collaboration. The remaining factor-statement from this domain relates to future collaboration within new models of care. In our study, we used the factor-statements relating to within MDT collaboration as well as the factor-statement related to future collaboration within new models of care (see figure 1).

In addition, information was collected on respondent's gender, age, profession, employment status (employed or self-employed), work environment (hospital, birth-centre or community-based), total years of experience (since qualification), total years of experience in current job, and the number of working hours per week.

The questionnaire was piloted in a group of (ten) participants drawn from all professions represented in the sample. This resulted in the simplification of two questions and the deletion of one that had been included twice in the draft questionnaire.

Statistical methods:

IBM SPSS version 22.0 (SPSS, Inc., Chicago, IL, USA) was used for data analysis. Using the Kolmogorov-Smirnov test, data were judged sufficiently normally distributed to allow parametric testing.

We compared four groups: hospital midwives, primary-care midwives, carers, and doctors. We used multiple-imputation techniques to analyse missing data. In addition, we used descriptive statistics, chi-square, bivariate and multi-variable regression. We calculated a mean score for within-MDT collaboration for each group. We combined respondents' answers to each of the eight factor statements to make a mean collaboration score for within-MDT collaboration. We then compared these scores across professions using anova pair-wise comparison of means. Higher scores correlate with better collaboration.

We dichotomized answers on the Likert items, using the categories 'disagree' and 'agree'. We used t-tests, cross-tabulation and linear regression to assess the differences in relation to collaboration between all groups. Fisher's exact test was used when more than 20% of the cells of the table had an expected count less than 5. We calculated Pearson's r correlation for each factor statement within the domain against the mean collaboration score per professional group. Lastly, we used multiple linear regression to look at the effect of several independent variables on collaboration. A p-value of 0.05 or lower was considered statistically significant.

Ethical considerations:

This study is part of a larger study²⁵ that was submitted to the medical ethics committee of VU University Medical Centre (reference number 2014/030). The study was approved. Ethical approval was not considered necessary according to Dutch legislation.²⁶ The authors declare no conflicts of interest.

Results.

We received a total of 4,073 responses for the MDT collaboration questionnaire. Of these 151 were excluded because the professional group of the respondent was not stated. The 'other' category was chosen by 64 respondents. Examination of the explanation of the respondents who chose 'other' to describe their profession allowed us to add most of these responses (n=44) to the category 'carer'. When we could not establish occupational group, responses were excluded (n =20).

The remaining 3,902 responses were included for analysis. Of these 80% contained some missing values. However, in total no more than 12% of values were missing. Missing data were found to be missing completely at random (MCAR).

When imputed data for missing cases/values were compared with complete cases the results did not significantly differ. Missing values resulted in slight fluctuations in total numbers of respondents per professional group per question. Totals are given in each table. Response rates per profession are shown in table 1. Most of the respondents were female (except in the category 'doctor', where 30% were male) and were not self-employed (table 1). Notable exceptions were PCM (of whom 80% were self-employed) and doctors (of whom 36% were self-employed). Significant differences were noted in the mean ages between the professional groups with PCM being the youngest (mean 38 yrs., sd 9.8) and carers being the oldest (mean 47yrs., sd 10.5). Significant differences were also seen in the mean total years of experience and mean years of experience in current job: PCM having the least total experience (mean 13 yrs., sd 8.9) and carers having the most (mean 16 yrs., sd 10.5). Doctors reported the least number of years of experience in their current job (mean 9 yrs., sd 8.1) and carers the most (mean 11 yrs., sd 9.4). Lastly, there was a significant difference in the mean hours per week worked between the groups: carers having the lowest (mean 23 hours per week, sd 9.1) and doctors the highest (mean 47 hours per week, sd 9.9) number of working hours.

Overall, mean collaboration scores were low (table 2). The mean collaboration score (MCS) for all groups was 2.99 (sd = .34). PCM scored lowest with a MCS of 2.79 (sd = .37). MCS for HM (2.89 sd = .28) and doctors were also low (2.89 sd = .33). Carers had the highest MCS (3.03 sd = .32).

When MCS were dichotomized – (3-4) = satisfied, (1-2.99) = not satisfied – 40% of all respondents were not satisfied with the collaboration within the MDT. . Levels of satisfaction varied between professional groups (31-68%). Maternity care assistants were the most satisfied (68%), followed by doctors (47%) and hospital midwives (44%). Primary care midwives were the least satisfied with their collaboration (31%).

In a pairwise comparison (independent samples t-test), the between group difference of the MCS for HM and PCM was significant ($p=0.02$) and highly significant for the differences between HM and carers, PCM and doctors, PCM and carers and doctors and carers ($p<0.001$).

We found significant differences between professions on statements in the domain “within-MDT collaboration” (table 3). More than half of the PCM (compared with less than 25% of carers) disagreed with the statement, ‘within my multi-disciplinary team, colleagues give me emotional support in times of difficulty’ (52% PCM, 23% carers, $p = 0.001$).

One in four PCM and HM and one in five doctors (compared with one in ten of the carers) disagreed with the statement ‘within my multi-disciplinary team, colleagues offer a helping hand if necessary’ (26% PCM 25% HM, 19% doctors, 10% carers, $p = 0.001$). While, more than 30% of PCM (as opposed to 6% of carers) agreed with the statement ‘within my multi-disciplinary team, colleagues criticise each other in an ‘annoying manner’ (32% PCM, Doctors 18%, HM 15%, 6% carers, $p = 0.001$).

Using a bivariate comparison of correlations (Pearson’s r) we compared each individual factor statement within the MDT domain to the mean collaboration score for each of the professional groups. For HM, the strongest correlation was the factor statement “Within my multi-disciplinary team colleagues give me emotional support in times of difficulty” ($r = 0.687$, $p = 0.001$). For PCM and carers, the strongest correlation was “Within my multi-disciplinary team I feel valued by my colleagues” PCM ($r = 0.721$, $p = 0.001$) and carers ($r = 0.754$, $p = 0.001$). For doctors, the strongest correlation in the domain was “Within my multi-disciplinary team I trust the abilities of my colleagues” ($r = 0.704$, $p = 0.001$).

When all four groups were compared with each other, both groups of midwives were less confident (than doctors and carers) about future collaboration within new models of maternity service provision. For primary care midwives this difference was significant ($p < 0.001$). While for hospital midwives the difference just failed to reach the level of significance ($p = 0.06$). Carers, on the other hand were significantly more positive than the other three groups ($p < 0.001$) regarding collaboration within new models of care.

The best-fit regression models for each professional group differed slightly (table 4), although three factor-statements were significant in each model for all professional groups. These were: ‘Within my multi-disciplinary team I experience other professionals more as colleagues than competitors’, ‘Within my multi-disciplinary team colleagues criticize each other in an annoying way’, ‘Within my multi-disciplinary team colleagues give me emotional support in times of difficulty’.

Discussion.

We found that overall 40% of all respondents were not satisfied with collaboration within their multi-disciplinary team. In addition, both groups of midwives surveyed were pessimistic over collaboration within future models of maternity service provision.

With the increased use of multi-disciplinary teams, especially in maternity care, optimum-collaboration is a safety issue and one of the greatest challenges of modern-day healthcare. If collaboration is suboptimal this can lead to medical errors. Failure to communicate effectively has been cited by the American Joint Commission for Accreditation as the third most common cause of death in US hospitals.²⁷

Other studies report findings similar to ours.^{28,29} Based on these findings our results can be broadly grouped into four headings related to collaboration: the presence of competition, trust in the abilities of colleagues, the need to feel valued (including sensitivity to criticism), and the importance of a “helping-hand” (including presence of emotional support).

Competition in healthcare has been found to be helpful and harmful to patient outcomes.³⁰ Under the current system of remuneration for maternity-related care in the Netherlands, hospitals, primary-care midwives, and home-based maternity-care assistants are reimbursed separately for their services. However, the recently published national standard for integrated care (which has been introduced with the expectation of improved quality of care)¹⁷ suggests that one element within integrated care is that caregivers will be paid from an integrated tariff, i.e. a lump-sum; a policy, that may lead to each party receiving less money.

In our data we see that one-in-four of the primary-care midwives agree that they see others in the MDT more as competitors than colleagues indicating that competition for resources is a sensitive issue. This is a potential source of mistrust between caregivers that can lead to harmful ‘competition’ for pregnant women.³¹

The ability to trust colleagues was also an important issue for respondents. Trust is a fundamental component of effective collaboration.^{32,20} Where trust is lacking, teams are likely to be less effective, as illustrated in observational studies of obstetric emergencies.^{33,34}

Trust is an especially important component of the Dutch model of maternity-care, where birthing women are often referred during labour.³⁵ In our findings,

trust in the ability of colleagues within the MDT was strongly correlated with a higher MCS. When obstacles to trust, such as competition or role ambiguity, exist, they are likely to stand in the way of optimising collaboration. A recent review of the role of American advanced nurse-practitioners (ANP) in relation to others within the MDT concluded better outcomes are achieved when ANP's have a defined role inclusive of "competencies, leadership, engagement, collaboration and advocacy".³⁶ Under the current model of service provision in the Netherlands similar arrangements for hospital midwives may assist in reducing barriers in MDT collaboration.

The need to feel valued was significant for the carers and doctors' groups in our study. Meeting this need is seen as an essential feature for effective teamwork, as widely reported among maternity service professionals in differing settings as well as in nursing teams and in teamwork situations in general.^{37,38} Effective teamwork – and thus effective collaboration – requires (among others) that each member of the team values the contribution of others and that criticism is undertaken from a positive perspective. Inter-professional education, structured communication (such as using Situation Background Assessment Recommendation [SBAR] technique) and the use of no-blame incident analysis are all known to remove barriers to effective teamwork.^{17,39,40}

Our study shows that there is room for improvement in the dynamics of multi-disciplinary maternity care teams in the Netherlands. Inter-professional education is in its infancy but is promising in its scope.⁴¹ In addition, it has been shown that collaboration within health and social care can be improved by the introduction of national guidance and advice,⁴² such as the UK National Institute for Clinical Effectiveness (NICE). In the Netherlands, the recently formed College of Perinatal Care has just launched a national care-standard for integrated maternity care.¹⁷ While discussion is ongoing as to how this standard can be implemented, it will nevertheless be interesting to see whether this leads to improved collaboration in the future.

Lastly, the importance of 'availability of help when necessary' and 'emotional support in times of difficulty', was common to all professional groups in our survey. In each of our analyses there was a significant correlation between (the presence of) help/support and the reported score of the collaboration.

Availability of help is particularly relevant to the Dutch model of maternity care. Midwives, both in primary-care and hospital settings, tend to work in isolation, large maternity units/hospitals are not common, and frequently there will be only one obstetric-professional in attendance (supported by a carer) at a birth. Robust protocols exist for the provision of assistance in a homebirth

setting however, the availability of similar arrangements in hospital settings is unclear.⁴³ In spite of encouragement by the Dutch Healthcare Inspectorate (IGZ) to do so, most maternity units do not have protocols to deal with peak-pressure.¹⁰

Our findings suggest that where practitioners report that they receive help and support from colleagues, that they are likely to score higher on optimal collaboration. Conversely, members of the MDT were less likely to report higher collaboration scores where there was a feeling that colleagues were seen more as competitors or that they had less trust in the abilities of their colleagues. Combined, these factors can lead to sub-optimal collaboration and ineffective communication, which has been shown to compromise patient safety.^{44,45}

Strategies to improve collaboration should be an integral feature of service provision and audit. On a positive note, more inclusive solutions are beginning to emerge. Models of shared-care,⁴⁶ the introduction of perinatal audit and the formation of midwifery consortia⁴⁷ may further help to improve collaboration.

Our survey is the first of its kind to report Country-wide findings relating to collaboration within multi-disciplinary teams involved in the provision of maternity services. We used a validated tool to report the views of professionals involved.

Our survey adds to the body of knowledge regarding collaboration within maternity services and offers insight as what is important to Dutch practitioners. Our findings mirror those described in other studies underscoring their wider international relevance.

By highlighting barriers to optimal collaboration, knowledge gained from our study may be of particular value to commissioners and planners of future service provision. Our findings suggest the following key areas of concerns for practitioners: (the presence of) competition, (lack of) trust, the need to feel valued and that the ability to help each other when necessary.

Ensuring that collaboration is optimized is a priority for practitioners and commissioners of maternity-services alike. In order to fully succeed, future models of care must reflect the concerns of service providers.

Limitations.

Due to the 'snowball' method used for sampling, the way in which participants in the study were recruited was different across professional-groups. This fact

could have introduced a selection bias. However, we are confident that any potential for bias was mitigated by our broad general appeal for participants which appeared in the Professional Journal's and was circulated on the websites of The Professional Organisations representing our target groups.

Most of our responses contained some missing data. Although we are confident that the missing data are randomly distributed (and therefore do not adversely affect our analyses), were we to repeat the survey we would consider redesign of the survey instrument in an attempt to minimize the chances of missing data.

In consultation with the author of the Leiden Quality of Work Questionnaire we modified the survey-instrument so that we could also include midwives and doctors. Since this did not change the tone or substance of the instrument. The modified questionnaire was not revalidated and we are confident that the (simple) modification did not affect the validity of the questionnaire.

Lastly, despite our survey instrument having the facility for respondents to add additional comment for their choice of answers, very few did so. We were therefore, unable to explore respondent's answers in-depth. A deeper understanding of the reasons for respondent's choices may improve our understanding of the challenges to optimal collaboration. We recommend further (qualitative) research into the subject.

Conclusion.

Sub-optimal collaboration exists within the midwifery model of care in the Netherlands and the relationship between care providers is under pressure. This could affect patient safety and quality of care, according to the literature.

Strategies to address sub-optimal collaboration exist. However, no one-size-fits-all approach is apparent from the literature. Prior to the introduction of new models of care, policymakers and commissioners of maternity services should investigate which strategy is the most appropriate for each multidisciplinary team in order to ensure that collaboration between care providers is optimised.

Disclosure statement: The authors have no conflicts of interest.

Copyright statement: Copyright permission to adapt and reproduce the Eight factor-statements relating to within-multi disciplinary team collaboration (Figure 1) which was used in this study, may be obtained by contacting the corresponding author.

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Figures and Tables.

Figure 1. Eight factor-statements relating to measure within-multi disciplinary domain collaboration *

Mutual collaboration within my multi-disciplinary team (MDT) is good
Within my MDT I experience other professionals more as colleagues than as competitors
Within my MDT communication is good
Within my MDT I trust the abilities of my colleagues
Within my MDT I feel valued by my colleagues
Within my MDT colleagues criticize each other in an annoying way
Within my MDT colleagues offer a helping hand if necessary
Within my MDT colleagues give me emotional support in times of difficulty
I trust in good cooperation within the future midwifery organisation.

* Adapted from working-relationships domain in The Leiden Quality of Work Questionnaire (vd Doef & Maes, 1999) multi-disciplinary team' was defined as: all professionals involved in maternity-service provision within the healthcare region where you work.

Table 1. basic characteristics of the study population.

	Total n (%)	Hospital midwife n(%) [SD]	Primary care midwife n(%) [SD]	Doctor n(%) [SD]	Other carers n(%) [SD]	P value *	
Gender							
Male	139(4)	4 (4)	4 (1)	119 (30)	12 (0.4)		
Female	3,514(96)	93 (96)	386 (99)	271 (70)	2764(99)		
Mean age		42 [9.8]	38 [10.5]	45 [9.9]	47 [10.5]	a, b,c,d,e,f	
Employment status							
Employed	2,979(82)	97(100)	77 (20)	248 (64)	2557(92)		
Self employed	674 (18)	0 (0)	313 (80)	142 (36)	219 (8)		
Experience profession							
Mean years		16 [9.0]	13 [8.9]	15 [9.8]	16 [10.5]	a,d,e,f	
Experience current job							
Mean years		9 [7.1]	10 [7.9]	9 [8.1]	11 [9.4]	c,e,f	
Working hours							
Mean per week		29 [5.59]	44 [14.87]	47 [9.91]	23 [9.14]	a,b,c,d,f	

*p value for means = each group was compared individually to all other groups giving six possible p values for each comparison. Only the P values for comparisons which reach the level of significance are shown. The p values are lettered as follows: a = P value for difference between HM and PCM, b = P value for difference between HM and Drs, c = P value for difference between HM and MCA, d = P value for difference between PCM and Drs, e = P value for difference between PCM and MCA, f = P value for difference between Drs and MCA.

Table 2. Mean collaboration scores within MDT.

Professional group	Mean within-MDT collaboration (sd)	P value *	Not satisfied** n(%)	Satisfied n(%)
Hospital midwives	2.89 (.28)	a,c,	53 (56)	41 (44)
Primary care midwives	2.79 (.37)	d,,e	253 (69)	115 (31)
Doctors	2.89 (.33)	d,f	175 (53)	155(47)
Carers	3.03 (.32)	c,e,f	785 (32)	1631 (68)
All groups	2.99 (.34)		1266 (40)	1942 (60)

*each group was compared individually to all other groups giving six possible p values for each comparison. Only the P values for comparisons which reach the level of significance are shown. The p values are lettered as follows: a = P value for difference between HM and PCM, b = P value for difference between HM and Drs, c = P value for difference between HM and MCA, d = P value for difference between PCM and Drs, e = P value for difference between PCM and MCA, f = P value for difference between Drs and MCA.

**respondents mean collaboration scores were dichotomized (>3 =satisfied, <3 not satisfied)

Table 3. Between-group differences to individual factor statements from within MDT collaboration domain.

	Total n (%)	Hospital Midwives n (%)	Primary Care Midwives n (%)	Doctors n (%)	Other care providers ^d n (%)	p value*
Mutual collaboration within my multi-disciplinary team is good						
Agree	3,138(93)	88 (91)	335 (89)	306(88)	2,409 (94)	e,f
Disagree	235 (7)	9 (9)	41 (11)	43 (12)	142 (6)	
Within my multi-disciplinary team I experience other professionals more as colleagues than competitors						
Agree	2,964(86)	92 (95)	288 (77)	311(89)	2,273 (89)	a,d,e
Disagree	409 (14)	5 (5)	88 (23)	38 (11)	278 (11)	
Within my multi-disciplinary team mutual communication is good						
Agree	2890(86)	77 (79)	281 (75)	281(82)	2,251 (89)	c,e,f
Disagree	447 (13)	20 (21)	92 (25)	61 (18)	274 (11)	
Within my multi-disciplinary team I trust the abilities of my colleagues						
Agree	3,146(93)	87 (90)	342 (92)	290(85)	2,427 (96)	c,d,e,f
Disagree	191 (6)	10 (10)	31 (8)	52 (15)	98 (4)	
Within my multi-disciplinary team I feel valued by my colleagues						
Agree	3,024(90)	86 (89)	282 (76)	312(92)	2,344 (94)	a,c,d,e,f
Disagree	281 (9)	11 (11)	89 (24)	27 (8)	154 (6)	
Within my multi-disciplinary team colleagues criticize each other in an annoying way						
Agree	338(10)	15 (15)	119 (32)	61 (18)	143 (6)	a,c,d,e,f
Disagree	2,967(88)	82 (85)	252 (68)	278(82)	2,355 (94)	

Within my multi-disciplinary team colleagues offer a helping hand if necessary						
Agree	2,838(84)	71 (75)	271 (74)	267(81)	2,229 (90)	c,e,f,d
Disagree	423 (13)	23 (25)	97 (26)	63 (19)	240 (10)	

Within my multi-disciplinary team colleagues give me emotional support in times of difficulty						
Agree	2,308(68)	45 (48)	176 (48)	198(60)	1,889 (77)	b,c,d,e,f
Disagree	943 (28)	49 (52)	192 (52)	132(40)	570 (23)	

*each group was compared individually to all other groups giving six possible p values for each factor statement. However, only the P values for comparisons which reach the level of significance are shown. The p values are lettered as follows: a = P value for difference between HM and PCM, b = P value for difference between HM and Drs, c = P value for difference between HM and MCA, d = P value for difference between PCM and Drs, e = P value for difference between PCM and MCA, f = P value for difference between Drs and MCA.

Table 4: linear regression model factor-statements that contribute to optimal multidisciplinary collaboration per profession.

significant factor statement	Hospital midwife ^a	Primary care midwife ^b	Doctor ^c	Other carer ^d	P value*
	Beta	Beta	Beta	Beta	
	(95% CI)	(95% CI)	(95% CI)	(95% CI)	
Within my multi-disciplinary team I experience other professionals more as colleagues than competitors	.305 (.178, .433)	.080 (.030, .130)	.185 (.111, .259)	.168 (.141, .195)	a = <.001 b = <0.02 c = <.001 d = <.001
Within my multi-disciplinary team I trust the abilities of my colleagues	.010 (-.144, .164)	.238 (.168, .309)	.060 (-.029, .149)	.221 (.183, .258)	a = .895 b = <.001 c = .183 d = <.001
Within my multi-disciplinary team I feel valued by my colleagues	.034 (-.123, .191)	.042 (-.021, .105)	.169 (.063, .275)	.130 (.092, .168)	a = .671 b = .187 c = .002 d = <.001
Within my multi-disciplinary team colleagues criticize each other in an annoying way	.163 (.027, .298)	.123 (.073, .174)	.189 (.123, .254)	.318 (.292, .344)	a = .019 b = <.001 c = <.001 d = <.001
Within my multi-disciplinary team colleagues offer a helping hand if necessary	.155 (.025, .286)	.048 (-.010, .107)	.003 (-.084, .091)	.035 (.000, .071)	a = 0.20 b = .107 c = .943 d = .052
Within my multi-disciplinary team colleagues give me emotional support in times of difficulty	.129 (.071, .306)	.115 (.065, .166)	.152 (.087, .218)	.113 (.086, .140)	a = .002 b = <.001 c = <.001 d = <.001

*P value for difference per profession compared to all others

7

General Discussion

Hospital midwives: an examination of the role, diversity, and practice conditions of Dutch hospital midwives.

Aims of this thesis:

In this thesis we explore the scope of practice and the experience of hospital midwives in the Netherlands in order to better understand the factors that influence their contribution to the Dutch maternity care system. We accomplished this by investigating what hospital midwives are doing, the protocols that guide their work, and how they experience their role within the larger system of maternity care.

Five topics were of particular interest to us. We began by surveying the existing diversity in the practices of hospital midwives in the Netherlands (chapter 2), which led us to look more closely at the content and quality of hospital protocols governing the work of hospital midwives (chapter 3). We then turned our attention to the differences between hospital midwives and primary care midwives with regard to their job satisfaction and their attitudes towards their work (chapter 4). Recognizing that a significant element of job satisfaction is autonomy at work, we investigated how maternity care professionals in the Netherlands perceive their job autonomy, and we explored how they thought their autonomy might be affected by the introduction of integrated maternity care (chapter 5). Lastly, given the role of hospital midwives within multidisciplinary maternity care teams, we looked how collaboration was experienced across professional boundaries by maternity service providers – primary care and hospital midwives, obstetricians, nurses, and maternity care assistants – working in those multi-disciplinary teams (chapter 6).

In this chapter we reflect on our main findings, consider the strengths and limitations of our research, and describe the implications of our findings for contemporary maternity care provision in the Netherlands. We conclude by making recommendations for future research based on our findings.

Discussion of main findings

Practice conditions

Not all midwives in the Netherlands are independent (primary care) practitioners. When our study began, one in four midwives registered to practice in the Netherlands was employed in the hospital setting. It is now one in three¹. In order to understand the role of the hospital midwife, it is important to have a clear picture of the distribution of births in the

Netherlands. Seventeen percent of all births take place at home or birth centres, nearly all of which are attended by primary care midwives (general practitioners attend a few of these births). An additional thirteen percent of all births occur in the hospital under the care of a primary care midwife – these are referred to as “polyclinic births” – sometimes called “home births in the hospital”². The remaining births – 70% of all births in the Netherlands – happen in the hospital in “obstetrician-led care”³. These are births where expectant mothers are under the care of an obstetrician because of the presence of pathology or the need for pain relief. It is this group of women who are the potential clients of hospital midwives.

In Chapter 2 we describe the findings of our survey of the roles and practice conditions of Dutch hospital midwives. Our data show that the availability of hospital midwives and their levels of education are not uniform. Despite this, we found that hospital midwives attended the majority – 77 percent – of hospital births classified as “obstetrician-led”. Interestingly, we found that 40 percent of all hospital births assigned to obstetrician-led care that occurred during the study period were managed solely by a hospital midwife. In principle, this is a positive development, as previous, large-scale studies⁴⁻⁶ have shown that the provision of midwifery care can lead to an improvement in selected outcome measures. Other studies confirm that the presence of midwives in hospitals reduces the level of interventions, even in populations defined as high risk⁷⁻⁹.

Role diversity

As noted above, we found great diversity in the role, scope of practice, educational level, and working conditions of hospital midwives in the Netherlands. In response to this lack of uniformity, the professional organisations of both midwives and obstetricians have suggested amending the current Health Practitioners Law¹⁰ to add a new registrant category (specialist register) for hospital midwives. It is thought that this would facilitate greater homogeneity in the practices of hospital midwives^{11,12}. But not all midwives agree, creating uncertainty about the best way forward¹³. Furthermore, the establishment of such an amendment within the scope of the current Health Practitioners Law is proving to be complex^{14,15}.

In order to clarify the proper place and responsibility of hospital midwives in the Dutch system, key stakeholders – including the Royal Dutch Organisation of Midwives (KNOV), the Dutch Society for Obstetricians (NVOG), the Dutch Healthcare Inspectorate (IGZ), and the Care Institute (CVZ) – must find a mutually acceptable way of using the skills of hospital midwives. Our findings

provide important information that can be used to facilitate conversations about the future of hospital midwifery and to inform the creation of policy governing the practice of hospital midwives.

Quality of protocols

The survey described above included questions about how hospital midwives made decisions and about the nature of their responsibilities within the maternity care team. Nearly all midwives responded that they “always” or “frequently” worked according to protocols specifying their duties and responsibilities. However, when asked about the scientific background of those protocols, one-third of the respondents reported that the protocols were not up to date and that the background information, used to support the protocols, was not systematically selected and reviewed.

Our second study, described in chapter 3, looks more deeply at the protocols that are used by hospital midwives. This study was motivated by three factors: 1) the uncertainty regarding the quality of protocols we found in our earlier study, 2) the diversity in the practices of hospital midwives in the Netherlands and 3) emerging questions about the safety of Dutch hospitals during the evening hours and on the weekends¹⁶.

We found the methodological quality of protocols to be poor. Often, the content of the protocols was not based on the best, up to date, evidence. We also found a great deal of confusion regarding the definition of what a protocol was and what it should contain.

The lack of evidence to support protocols is not a new problem nor is it unique to the Netherlands¹⁷. But this does not diminish the need to improve the quality of protocols. We know that the use of standardized, evidence-based protocols can substantially improve health outcomes, and conversely, we know that reliance on poor protocols is associated with a significant risk of harm¹⁸.

Our survey showed that protocols may not be widely available in Dutch maternity units, which suggests that the development and use of protocols is not a high priority for providers of hospital maternity care. A consequence of this – confirmed in our survey – is the use of mono-disciplinary protocols that do not always correspond with national guidelines. One reason for the use of mono-disciplinary guidelines may be the problem of “who decides who does what?” – a historical and ongoing issue in the Netherlands relating to hierarchy among professionals involved in the provision of care. While there is a strong

tradition of autonomous midwifery in the Netherlands, there is nevertheless an historical imbalance of power between obstetricians and midwives¹⁹, a situation that has led to mistrust between the parties involved.

As we mentioned above, conflicting guidelines and protocols have the potential to do harm²⁰ making it an urgent matter that requires resolution. This issue is acknowledged in a government report²¹, a conclusion of which is the encouragement to develop multidisciplinary guidelines and protocols.

Since the publication of our study, the College of Perinatal Care (CPZ) has been established in the Netherlands²². This organisation has been given responsibility to develop a cohesive strategy for the implementation of integrated care within maternity services in the Netherlands²³, and true to that mission, the CPZ has produced the first integrated “care standard” in perinatal care²². However, ongoing disagreement about what integrated care should look like²⁴ has delayed its implementation. Future research is needed to assess whether the introduction of this care standard will bring about more standardized, evidence-based maternity care in the Netherlands²⁵.

Perceived job satisfaction and autonomy

Despite the lack of clarity surrounding the content and process of integrated care, new integrated models of care are being introduced in the Netherlands²². These models will undoubtedly result in changes in the working patterns of midwives, changes that will affect the job satisfaction and perceived job autonomy of midwives – both primary care and hospital based – and will likely alter the nature of collaboration within the multi-disciplinary team. This significant change in the organisation of maternity care gave us the opportunity to benchmark current levels of job satisfaction and to more fully explore the attitudes of midwives and other maternity care providers regarding their work prior to changes in the system of care. Our findings are described in chapters 4, 5 and 6.

Chapter 4 describes our study of Dutch midwives’ job satisfaction. We found that midwives – both hospital and primary care – were generally satisfied with their jobs. This high level of job satisfaction was related to, among other things, the potential for development within their respective roles, a phenomenon not unique to the Netherlands. Support for professional development – for example, in the form of mentorship – is known to be particularly important for new nursing and midwifery graduates^{26,27}. This has also been found to be true for midwifery graduates in the Netherlands^{28,29}, but ironically, no formal programme of mentorship is mandated by the Dutch registration authority for midwives.

Evidence also suggests that health care providers find their professional development – as measured by career progression – to be intrinsically valuable³⁰. While we do not know if (or to what degree) this is important for Dutch midwives, we do know that professional development – including career progression – is a regular issue in the annual negotiation of the working conditions of Dutch midwives³¹. This strongly suggests that ‘potential for development’ is important to Dutch midwives.

The Netherlands, like many other countries, does require evidence of ongoing professional experience for the maintenance of professional registration^{32,33}. However, professional experience is not the same as professional development, which is increasingly seen as essential in the careers of health service personnel³⁴ and which we found to be important for Dutch midwives. One option to remedy this would be for the Dutch registration authority for healthcare professionals (CIGB) to include the demands of the quality-register³⁵ in the process of re-registration for all midwives. At present, the quality register – a voluntary record of certain competences, maintained by the KNOV – is more relevant to primary care midwives as all insurance companies require this as a prerequisite for remuneration of care. Because they are paid by their employers, and not directly reimbursed by insurance, hospital midwives, are not currently obliged to join the quality register. Extending this requirement to all midwives would allow both primary care and hospital midwives to record evidence of professional development.

While the potential for professional development was an important aspect of job satisfaction for both hospital and primary care midwives, we found significant differences in the predictors of job satisfaction for each group. For hospital midwives, structural factors relating to employment conditions such as, (fewer) working hours per week, workplace agreements, and total years of experience were strong predictors of job satisfaction.

All hospital midwives in the Netherlands are employees of organizations and the majority work part-time, with fixed hours or shifts and little-to-no on-call hours. This is in sharp contrast to most primary care midwives who are self-employed, work longer hours, and spend more hours on-call¹. It has been suggested that the desire for more regular hours may explain why more midwives want to work in hospitals³⁶.

Compared to hospital midwives, primary-care midwives have substantially different patterns of work. Not surprisingly, then, for them job satisfaction was related to social aspects of their work, including collaboration, work demands

and tasks, degree of autonomy, and the influence of work on their personal lives.

Importance of autonomy

Higher levels of job autonomy, defined as the degree of control a worker has over his or her immediate scheduling and tasks³⁷, are significantly important to healthcare professionals. Having control over one's work is not just a matter of freedom, it also protects against somatic complaints, psychological distress at work, and burnout³⁸⁻⁴⁰. High levels of job autonomy among midwives have been shown to have a positive effect on the empowerment of their clients and to have a positive influence on the professional-patient relationship⁴¹. Clearly it is desirable to promote autonomy among all midwives.

In Chapter 5 we present the results of our study of the perceived job autonomy of Dutch maternity care providers – including primary care and hospital midwives, obstetric nurses, and obstetricians. Compared to other maternity care providers, we found that primary care midwives had the highest perceived level of autonomy. In addition, primary care midwives also scored highest when asked to consider the extent to which they would lose autonomy with the introduction of an integrated model of service provision.

Self-employed persons are known to have higher levels of autonomy (and job satisfaction) than salaried employees⁴², a phenomenon that has also been shown among primary care midwives⁴³. There are various theories explaining why this is so. Among others, concepts such as advocacy, respect, and professional recognition are thought to be important factors^{44,45}.

Hospital midwives had lower levels of perceived autonomy. The reasons for this remain unclear. It may be that as employees of a large organization, subject to organisational hierarchies⁴⁶, the autonomy of hospital midwives is diminished. Their perceived levels of autonomy may also be affected by uncertainty regarding the position of hospital midwives in the current model of maternity care¹¹. Further research, to better understand the reasons for the low levels of perceived autonomy among hospital midwives, is necessary.

Another important finding of our research, briefly mentioned above, is that primary care midwives expect to lose autonomy with the introduction of new (integrated) models of care. Lacking a clear strategy to safeguard their autonomy as independent practitioners, the introduction of new models of integrated care threatens the strong profession of primary care midwifery in the Netherlands. The autonomous position of Dutch midwives has long been a

critical and cherished feature of Dutch maternity care, admired around the world for its combination of good outcomes with minimal interventions⁴⁷.

Collaboration between maternity service providers

Given the increasing numbers of hospital midwives and the importance of teamwork in new, integrated models of care, we examined how collaboration was experienced within multi-disciplinary healthcare teams (MDT's) of midwifery care providers in the Netherlands (Chapter 6).

Good collaboration between health care professionals is known to be a key element of safe and effective care⁴⁸⁻⁵⁰. Suboptimal collaboration can compromise patient safety^{51,52}. Collaboration is especially important in maternity care in the Netherlands where less than ideal collaboration has been cited as a significant factor in maternal deaths and in adverse incidents occurring in hospitals during evenings, nights, and weekends^{53,54}.

We found that 40% of maternity service providers in our survey were not satisfied with collaboration within the current model of care. In addition, there were significant differences in reported satisfaction between the professional groups.

Most of the professional groups surveyed (hospital midwives, primary care midwives, and doctors) were pessimistic when asked about their view of collaboration within future models of care. When the groups were compared, midwives – hospital based and primary care – were significantly more pessimistic than doctors about collaboration within future models of maternity care. On the other hand, other caregivers – nurses and maternity-care assistants – were significantly more positive regarding collaboration in future models of care. This level of pessimism among midwives is in line with other research regarding the introduction of integrated care in the Netherlands⁵⁵. Our findings underscore the pressing need to find mutually acceptable ways of organizing integrated models of care.

Midwifery in the Netherlands is experiencing a sustained period of change. Substantial changes to the funding structure, manner of working, and employment dynamics are being rolled out across the country, and our survey shows that each of these is viewed as a potential threat to optimal collaboration. Collectively, they present a serious challenge to effective collaboration within the country's maternity care. Strategies to address suboptimal collaboration exist⁵⁶, however, no single, suitable approach has been identified.

Our findings are academically important, adding to our existing knowledge regarding collaboration, but they are also worrisome. The data point to the urgent need for stakeholders to reach consensus on how integrated care

should be implemented in the Netherlands. It is likely that more tailor-made strategies - i.e. strategies which are tailored to particular groups or settings - to improve collaboration are needed to ensure the success of new models of Dutch maternity care. Our research has the additional value of serving as a benchmark and a useful comparator for future research on (integrated) care in maternity services in the Netherlands.

Strengths and limitations

Data for the studies contained in this thesis were collected seven and four years ago respectively. In the intervening years, more midwives have chosen to work in hospitals¹. In addition, the introduction of the national job description for hospital midwives⁵⁷ along with the “care standard” for perinatal care²² and the guideline for the position of hospital midwives⁵⁸ have given additional dimensions to the debate over the future of midwifery in the Netherlands. However, given the absence of a clear and acceptable way forward regarding the position of hospital midwives within the Dutch maternity care model, together with the ongoing debate within the profession regarding possible amendments to the current Health Practitioners Law (creating a new registrant category for hospital midwives), it is clear that the issues raised by our findings remain relevant to contemporary midwifery practice in the Netherlands.

Prior to our study, little was known regarding the role, diversity, or practice conditions of Dutch hospital midwives. A major strength of our research is that it calls attention to the profile of the hospital midwife and, for the first time, acknowledges her contribution to maternity care in the Netherlands. In order to gather data from a broad and representative sample of maternity care givers, we chose to use quantitative methodology. While this provided us with important data, further, qualitative examination of the issues raised will provide a more nuanced insight into the underlying views of hospital midwives.

Conclusion: implications for practice and education

From their beginning less than 50 years ago, hospital midwives have, in a relatively short period of time, brought a new dimension to Dutch midwifery practice. Our findings offer a better understanding of the dynamics of midwifery service provision in the Netherlands and, in particular, provide insight into the daily practice of hospital midwives.

Over the past few years there has been much discussion about the role of midwives in the Dutch maternity care system, and new maternity care policies have been introduced, often without good supporting evidence. Among the possible options for reform of the midwifery profession, two are commonly

suggested: the creation of a separate, 'specialist' register for hospital midwives and the introduction of an 'integrated midwife' (one who is equipped with the education and skills to work in hospitals and primary care). Neither option is supported by a majority of midwives⁵⁹, underscoring the urgent need for research to explore the views of all practicing midwives. The articulation of a clear and widely accepted vision of the future of Dutch midwifery will allow the profession to move forward together.

The introduction of integrated care and the need to better harmonize the scope of practice of hospital midwives offer the profession an opportunity to pause and reflect on the best way to promote the health and well-being of mothers, families, and midwives. This moment of unrest should be used to modernize the profession, drawing on strengths that already exist to build models of care best-suited to the future. However, it remains to be seen whether the leadership of the CPZ and collaboration with the Quality Institute⁶⁰ (Kwaliteits Instituut) will lead to better quality guidelines and protocols within maternity services in the Netherlands. Without consensus between the stakeholders, however, this appears unlikely.

Women's views – which, currently, are not reflected in the content of the protocols and guidelines used in the Netherlands – are crucial to the delivery of quality care⁶¹. The CPZ should listen to what women want – in addition to using the best evidence – when suggesting best practice. In addition, the CPZ should attempt to reduce mistrust between members of different professional groups by discouraging the use of mono-disciplinary protocols and by moving the discussion from a simplistic 'who decides who does what' to one focusing on best evidence for practice.

Despite the varied practice conditions of hospital midwives, they are, in general, satisfied with their jobs. But as we noted above, differing elements of job satisfaction appear to be more (or less) important for hospital midwives than their primary care colleagues. This finding has implications for employers, who should consider (the need for) more part-time employment, structured working conditions, and incentives that encourage longer term employment.

Midwives – both hospital and primary care – fear losing autonomy and, compared to their maternity care colleagues, see less potential for collaboration within proposed, new models of care. Successful implementation of new models will require more than mere encouragement to comply. The success of any new model will likely require finding ways to empower staff and to provide support for establishing their own ways of working in order to

increase professional autonomy⁶² – an important contributor to job satisfaction.

Finally, strategies such as inter-professional education, structured communication, and the use of no-blame incident analysis have been shown to be effective in promoting greater collaboration^{63,64}. Further exploration and use of such techniques should be systematically encouraged and funded.

Recommendations for future research

The move towards integrated care presents a unique opportunity for midwives to take the lead in deciding their future. Following on from our research it is clear that we need to better understand why so many midwives are choosing to work in hospitals, and we need to examine how hospital midwives see their role(s) developing. For example, with regard to the latter, future research should explore the reasons why hospital midwives experience lower levels of autonomy (and how this can be improved). Learning more about the drivers of job (dis)satisfaction will likely help to create policies to reduce expressed levels of pessimism regarding future models of service provision.

In order to create - and demonstrate the safety and efficacy of – new models of hospital midwifery care, we need further research on the scope and sphere of practice of hospital midwives. In addition, we need to conduct in-depth, qualitative studies of the differing predictors of job satisfaction between hospital and primary-care midwives – including the factors that promote their health and wellbeing. Lacking such research, it will be impossible to establish a clear vision for the future of midwifery in the Netherlands.

Lastly, future research must uncover the reasons why so many maternity care providers are not satisfied with collaboration within maternity care and ascertain what they need in order to feel more confident regarding collaboration in new models of care. Without this, the shared goals of integrated care – to promote seamless, effective, and satisfying care – will not be realized.

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8

Summary/Nederlandse Samenvatting

Summary of this thesis

Chapter 1

The first chapter describes the background, rationale, and aims of this thesis.

The primary care midwife has long been the cornerstone of Dutch maternity care; the hospital midwife is a relatively new and increasingly important caregiver for pregnant and birthing women in the Netherlands. Twenty-five years ago, fewer than ten percent of midwives in the Netherlands were identified as hospital midwives (known as 'clinical midwives' in Dutch). Today, according to the latest available numbers, one in three midwives are employed in hospitals, making this the fastest growing segment of the profession. In spite of their growing numbers, and in spite of the fact that they are frequently called upon to care for women with complex care needs – often without direct supervision by an obstetrician – we know very little about the practice and working environment of hospital midwives.

The aim of our research was to map and critically review the practice of hospital midwives and to explore their contribution to the quality of maternity care within the context of Dutch maternity service provision (MSP). We looked at what they do and how they experience this because their experiences are (or can be seen as) another determinant for quality of care.

The objectives of our research were:

1. To describe the existing diversity in the scope and practice of hospital midwives in the Netherlands (chapter 2).
2. To examine the content and quality of the protocols for hospital midwives used in maternity hospitals in the Netherlands (chapter 3).
3. To compare hospital midwives and primary care midwives with regard to job satisfaction and attitudes towards their work (chapter 4).
4. To examine how maternity care professionals in the Netherlands perceive their job autonomy and whether their expectations about job autonomy will change in a system of integrated maternity care (chapter 5).
5. To examine the quality of collaboration between multi-disciplinary teams of maternity service providers in the Netherlands (chapter 6).

Chapter 2

We know that the number of hospital midwives is growing. However, very little is known about what hospital midwives in the Netherlands actually do. We do know that there are no nationally agreed-upon multidisciplinary standards for midwifery practice in the hospital setting and that not all hospital midwives have additional training. We addressed this lacuna by describing the diversity in the scope and practice of hospital midwives. Our data come from an online survey of all hospitals in the Netherlands that gathered information about the hospital organisation, demographic information relating to hospital midwives, their experience and additional qualifications (if any), and the position of hospital midwives – in terms of duties, responsibilities and collaboration – within the multidisciplinary clinical team.

We received responses from 59 of the 98 hospitals that provide maternity care in the Netherlands. One in four midwives registered to practice is employed in the hospital setting, the site of 70% of all births in the Netherlands. In theory, all those hospital births are to women transferred to secondary (hospital) care because they have an increased risk profile compared to that of women birthing in primary care (i.e., where care is provided by community midwives and general practitioners). Given that these births are no longer considered “low-risk”, it is remarkable that 77% of hospital births that occurred during the study period were attended by hospital midwives, and that 40% of all hospital births in that period were managed solely by a hospital midwife. We also discovered that not all hospitals employ midwives and among those that do, not all have midwives on duty twenty-four hours a day or seven days a week.

Our respondents reported a diverse collection of duties and responsibilities, which indicated that hospital midwives have a high level of autonomy (this topic is explored further in chapter 5). Midwives in the survey had varied educational backgrounds: some midwives had no additional training beyond their initial qualification, while others reported having a masters’ degree. Our study showed great differences between hospitals in the Netherlands regarding the scope of practice of hospital midwives.

Perhaps the most striking finding of our study is the degree of responsibility given to hospital midwives, who attend the majority of births referred to the hospital from primary care. This finding is important because it reveals a flaw in the records kept by Perined, the keeper of statistics regarding maternity care in the Netherlands. Because these midwife-attended hospital births occur under the supervision of an obstetrician, even when managed solely by hospital

midwives, they are officially recorded as births done by an obstetrician. The result is an inaccurate picture of the role of midwives in the delivery of maternity care in the Netherlands. For example, in 2012 the official records report that midwives attended 30% (n=51708) of births (see <https://www.perined.nl/publicaties1/publicaties/jaarboeken/>) while in fact, they were actually the main caregiver at 83% (n=143664) of the total births in the Netherlands (n=173099).

Chapter 3

This diversity in role and practice conditions led us to look more closely at the content and quality of protocols governing the work of hospital midwives. The rationale for our study, undertaken in conjunction with the Dutch Healthcare inspectorate (IGZ), was a desire to explore possible factors affecting safety in hospitals. We did this by examining the content and methodological quality of hospital protocols. Three protocols – for the management of hypertensive conditions of pregnancy, post-partum haemorrhage, and fetal surveillance – were selected by the Inspectorate for assessment. These protocols should routinely be available in Dutch maternity hospitals and should be based on best available evidence. The availability of evidence-based protocols is increasingly important as the Netherlands moves to new integrated models of care, where teams of providers will work together on maternity units. While these changes in the organization of care began after our research, our work nonetheless serves as an important benchmark of the guidance available to midwives working in hospital and may reflect the situation today.

A postal and internet questionnaire was sent to all hospitals with maternity facilities in the Netherlands, inquiring about the availability of these three protocols. Hospitals were asked to send copies of their protocols. All of the protocols received were systematically assessed for content and methodological quality. We measured their methodological rigour with the validated AGREE framework and we used a Likert-type scale to evaluate the level of evidence used.

We received responses from 48 of the 91 hospitals that provide maternity care in the Netherlands. The methodological quality of protocols we evaluated was poor. Using the AGREE framework, 70% of fetal surveillance protocols could not be recommended, and only one protocol from a single hospital scored "strongly recommend". There was a general paucity of evidence in the protocols assessed. An incidental finding of our research was a high degree of confusion regarding the definition of a protocol and what it should contain.

This study shows that, at the time of our research, up-to-date, evidence-based protocols were not widely available in Dutch maternity units, and where they did exist, they were often of poor quality.

Chapter 4

Given the lack of clarity surrounding the role, practice conditions, and quality of evidence available to hospital midwives, we then turned our attention to the differences between hospital midwives and primary care midwives with regard to their job satisfaction and attitudes towards their work. This is important to know because higher levels of job satisfaction and employee-wellbeing have been identified as improving quality of care.

This chapter presents a systematic examination of the job satisfaction levels among hospital and primary-care midwives in the Netherlands. We distributed an online survey to all practicing midwives in the Netherlands, which included a validated measure of job satisfaction (the Leiden Quality of Work Life Questionnaire) — allowing us to analyse the attitudes of hospital and primary-care midwives towards their work. The survey consisted of ten domains, each containing several “factor statements”. One domain is specifically focused on job satisfaction; the other nine domains explore various elements related to job satisfaction.

In total, 508 midwives responded to our survey. One hundred and three were hospital midwives, and 405 were primary care midwives. All midwives – both primary care and hospital based – said they were satisfied with their work. However, there were significant differences between hospital and primary care midwives in the factors related to their job satisfaction. For hospital midwives, the most significant drivers of satisfaction were: the number of hours worked per week, workplace agreements, and total years of experience. For primary-care midwives, social support at work, work demands, job autonomy, and the influence of work on private life were the most significant predictors of satisfaction.

Our data confirm that midwives in the Netherlands are satisfied with their jobs overall, but that the sources of that satisfaction vary according to where midwives work - in the community or in the hospital. Given that job satisfaction also affects the quality of care (and the expressed level of satisfaction with that care), these differences are important to consider when planning workforce needs and should be used by policymakers in the Netherlands and elsewhere when planning new models of care. The observed variation in satisfaction – depending on place and type of work – suggests that tailor-made strategies that respond to the different drivers of job satisfaction for community and

hospital midwives will improve the satisfaction midwives derive from their work.

Chapter 5

Recognising that a significant element of job satisfaction is autonomy at work, we investigated how maternity care professionals in the Netherlands perceive their job autonomy and we explored how they thought their autonomy might be affected by the introduction of integrated maternity care.

We used data from the survey described in chapter 4 to compare how maternity care professionals in the Netherlands – including not only midwives (both hospital and primary care), but also obstetricians, and obstetric nurses – perceive their job autonomy. These data also shed light on how a new system of integrated maternity care may affect the experienced autonomy of professionals.

A total of 799 maternity care professionals participated in the survey: 93 hospital midwives, 362 primary care midwives, 240 obstetricians, and 104 obstetric nurses. We combined respondents' answers to the factor statements from the domain 'decision authority' – contained within the Leiden Quality of Work Life Questionnaire – to calculate a mean score for experienced job autonomy. The mean score for experienced job autonomy was highest for primary care midwives, followed by obstetricians, hospital midwives, and obstetric nurses. Primary care midwives had the highest level of concern about losing their job autonomy in a system of integrated care.

Our study shows that there is a significant difference in experienced job autonomy between maternity care professionals. Job autonomy is known to be an important facet of job satisfaction. A high level of job autonomy has also been shown to have a positive effect on the professional-patient relationship.

Our data show that midwives in the Netherlands – particularly those working in primary care – were pessimistic regarding their autonomy in future models of care. Any decrease in experienced job autonomy could have a negative impact on job related wellbeing and satisfaction among professionals and the women for whom they care. The challenge when introducing new models of care is to maintain a high level of experienced job autonomy. To maintain and enhance professional autonomy, staff must be supported in establishing their own ways of working.

Chapter 6

Good collaboration between health care professionals is a key element of safe, effective care, but creating a collaborative culture can be challenging.

In chapter 6 we turn our attention to how the multi-disciplinary teams (MDTs) that provide maternity care in the Netherlands experience inter-professional collaboration. In spite of its importance for effective maternity care, little is known about the nature and quality of collaboration between maternity care professionals. To fill this gap, we used data from an online survey to identify potential enhancing and inhibiting factors for inter-professional collaboration within these MDT's. We combined respondents' answers to the factor statements from the domain 'workplace collaboration within multi-disciplinary team' – contained within the Leiden Quality of Work Life Questionnaire – to generate a mean collaboration score.

We had a relatively large sample for this study: 3653 professionals responded, including 97 hospital midwives, 390 obstetricians, 390 primary care midwives, and 2776 obstetric nurses and maternity care assistants. Forty percent of our respondents were not satisfied with collaboration within their MDT.

There were significant differences in mean collaboration scores between the professional groups. Midwives – hospital and primary care – were pessimistic about collaboration in future models of maternity care. Optimum collaboration is a safety issue and one of the greatest challenges of modern-day healthcare. Literature suggests that failing to address this issue could affect patient safety. Strategies to address sub-optimal collaboration are known to exist. However, there is no one-size-fits-all approach for addressing the issue.

As a result of this study, we know that within the current midwifery model of care, the perception of collaboration is sub-optimal. Those introducing models of integrated maternity care in the Netherlands must pay attention to the need for improved collaboration between professionals. Further research should investigate which strategy is the most appropriate for MDT's to ensure that collaboration is optimized.

Chapter 7 General discussion

Midwifery in the Netherlands is in the midst of a period of great change. Substantial alterations to the funding structure, manner of working, and employment dynamics are being introduced. In this chapter, we discuss our main findings against the background of changing models of care and in the context of the (international) literature on the practice of midwifery. We go on to examine the implications of our work for policy, future research, and maternity care practice.

We found a large diversity in the practice of hospital midwives in the Netherlands. In addition, when we did our research, up-to-date, high quality, evidence-based protocols were not widely available in Dutch maternity units. We also found that while all midwives were satisfied with their jobs, there were important differences in the predictors of job satisfaction between hospital and primary care midwives.

Turning to the future, and in particular the introduction of integrated models of care in the Netherlands, our findings show that all midwives feared losing autonomy and were pessimistic regarding the quality of collaboration in future models of care.

We suggest that in order to succeed, future models of care must consider the existing diversity of practice and must engage all professionals in a manner that guarantees their autonomy while, at the same time, promoting greater collaboration among those professionals. Comparison with other, similarly situated professional collaborations may point to ideas that could help shape future models of care.

It is known that midwives can provide safe, effective care – even with women who do not meet the criteria for primary care. This thesis demonstrates that hospital midwives have become an important – and distinct – component of the Dutch midwifery model of care.

Our findings offer insight into the daily practices of hospital midwives, providing a better understanding of the dynamics of midwifery service provision in the Netherlands. Further research is needed, however, to determine how to better regulate the still largely unregulated practice of hospital midwifery and to learn how midwifery services – in the community and in the hospital – can best meet the needs of women. Our research, the first careful look at hospital midwifery, opens the door to future studies. We need to learn more about the views of those who benefit from the care given by hospital midwives – women and their families – and we need to examine the experiences and perspectives of the midwives who are playing this important role in Dutch maternity care.

Nederlandse Samenvatting

Hoofdstuk 1

In Hoofdstuk 1 worden de achtergrond, de onderbouwing en de doelstellingen van dit proefschrift beschreven. De eerstelijns verloskundige is lange tijd de hoeksteen van de Nederlandse geboortezorg geweest. De klinisch verloskundige is een relatief nieuwe en een steeds belangrijker wordende zorgverlener voor zwangere en barende vrouwen in Nederland. Vijf en twintig jaar geleden was het aantal klinisch werkende verloskundigen minder dan tien procent. Volgens de meest recente cijfers, werkt momenteel één op de drie verloskundigen in het ziekenhuis en zijn zij daarmee de snelst groeiende groep binnen de verloskundige professie. Ondanks de toename in het aantal klinisch verloskundigen, en het feit dat klinisch verloskundigen met regelmaat de zorg voor zwangeren met complexe zorgvragen op zich nemen zonder directe supervisie van een gynaecoloog, weten we nog maar weinig over de inhoud en uitvoering van het werk in de praktijk of over de werkomstandigheden van deze klinisch verloskundigen.

Het doel van ons onderzoek was om de dagelijkse praktijk van het werk van klinische verloskundigen in kaart te brengen, dit kritisch te beoordelen en inzicht te krijgen in hun bijdrage aan de kwaliteit van zorg binnen de Nederlandse verloskunde. We hebben gekeken naar wat ze doen en hoe ze hun werk ervaren omdat de wijze waarop het werk ervaren wordt een determinant is (of kan worden gezien als) van kwaliteit van zorg.

De doelstellingen van het onderzoek waren als volgt:

1. Het beschrijven van de bestaande diversiteit in de reikwijdte en inhoud van het werk van klinisch verloskundigen in Nederland (hoofdstuk 2).
2. Het onderzoeken van de inhoudelijke en methodologische kwaliteit van ziekenhuisprotocollen die door klinisch verloskundigen gebruikt worden (hoofdstuk 3).
3. Het vergelijken van de arbeidssatisfactie en de werkhouding tussen klinisch en eerstelijns verloskundigen (hoofdstuk 4).
4. Te onderzoeken hoe verloskundige zorgverleners in Nederland hun professionele autonomie beoordelen en wat hun verwachtingen zijn ten aanzien van deze autonomie in een integraal zorgsysteem (hoofdstuk 5).
5. Te onderzoeken wat de kwaliteit van de samenwerking is binnen multidisciplinaire teams van verloskundige zorgverleners in Nederland (hoofdstuk 6).

Hoofdstuk 2

Hoewel bekend is dat het aantal klinisch werkende verloskundigen stijgt, is het nauwelijks bekend wat deze verloskundigen nu eigenlijk precies doen. We weten dat er landelijk overeengekomen multidisciplinaire richtlijnen bestaan voor de verloskundige praktijk in het ziekenhuis en dat niet alle klinisch werkende verloskundigen een extra opleiding of training hebben gevolgd. Om deze kennislacune over de inhoud en de reikwijdte van het werk van klinische verloskundigen te beantwoorden is een online vragenlijst uitgezet onder alle Nederlandse ziekenhuizen. Data zijn verzameld over de organisatie van zorg binnen het ziekenhuis, demografische gegevens van klinische verloskundigen, informatie over hun ervaringen, extra gevolgde trainingen en opleidingen (indien van toepassing), en de positie van klinisch verloskundigen met betrekking tot taken, verantwoordelijkheden en samenwerking binnen het multidisciplinaire klinische team.

Negen en vijftig van de 98 Nederlandse ziekenhuizen die verloskundige zorg verlenen retourneerden de vragenlijst. Eén op de vier BIG geregistreerde verloskundigen werkt in een ziekenhuis, de locatie waar 70% van alle bevallingen in Nederland plaatsvindt. Het betreft hier in principe de bevallingen van vrouwen die overgedragen zijn aan de tweede lijn vanwege een verhoogd risico op complicaties, vergeleken met zwangere vrouwen in de eerste lijn die zorg ontvangen van eerstelijns verloskundigen en huisartsen. Het is opmerkelijk dat, gezien het feit dat deze bevallingen niet langer beschouwt kunnen worden als 'laag risico', 77% van deze tweedelijns bevallingen (voor het merendeel) begeleid werden door klinische verloskundigen en dat 40% van deze ziekenhuis bevallingen begeleid werden door alleen een klinische verloskundige zonder enige bemoeienis van een gynaecoloog. Daarnaast laat het onderzoek ook zien dat niet alle ziekenhuizen klinisch verloskundigen in dienst hebben en dat de klinisch verloskundigen in de ziekenhuizen die dat wel doen, niet altijd 24 uur per dag en zeven dagen per week beschikbaar zijn.

De respondenten rapporteerden een grote verscheidenheid aan taken en verantwoordelijkheden van klinisch verloskundigen, waaruit een beeld naar voren komt van een hoge mate van autonomie (dit onderwerp wordt in hoofdstuk 5 uitvoerig besproken).

De verloskundigen in dit onderzoek lieten een diverse opleidingsachtergrond zien: Sommige verloskundigen hadden nooit een extra opleiding of training gevolgd naast hun initiële opleiding, terwijl anderen een masterstudie hadden gedaan. Onze studie liet een grote verscheidenheid zien tussen ziekenhuizen met betrekking tot de reikwijdte van het werk in de dagelijkse praktijk van

klinische verloskundigen. Wellicht de meest opvallende bevinding was de mate van verantwoordelijkheid gegeven aan klinische verloskundigen in de begeleiding van het merendeel van de bevallingen die verwezen zijn door de eerste lijn. Dit is een belangrijke bevinding omdat het een onvolkomenheid in de Perined gegevens laat zien; deze door verloskundigen begeleidde bevallingen vinden plaats onder supervisie van een gynaecoloog en worden als dusdanig geregistreerd, óók wanneer de bevalling vrijwel volledig, - plaatsvindt onder begeleiding van de klinische verloskundige, zonder enige bemoeienis van een gynaecoloog -. Hierdoor ontstaat een onvolledig beeld van de rol van verloskundigen in de Nederlandse geboortezorg. Zo laten officiële cijfers uit 2012 zien dat verloskundigen 30% (n=51.708) van alle bevallingen in Nederland hebben begeleid, terwijl zij in feite de belangrijkste aanwezige zorgverlener waren tijdens 83% (n=143.664) van het totaal aantal bevallingen van dat jaar in Nederland (n=173.099).

Hoofdstuk 3

Vanwege de diversiteit in de taken en verantwoordelijkheden van klinisch verloskundigen werd besloten de inhoud en kwaliteit van ziekenhuis protocollen, die leidend zijn in hun werk, te onderzoeken. Het doel van het onderzoek dat uitgevoerd werd op verzoek van de Inspectie Gezondheidszorg (IGZ), was de wens om mogelijke factoren te identificeren die van invloed zijn op de veiligheid van zorg in ziekenhuizen. Het onderzoek werd uitgevoerd doormiddel van het beoordelen van de inhoud en de methodologische kwaliteit van ziekenhuis protocollen. Op verzoek van de IGZ werden de protocollen voor het beleid bij hypertensieve aandoeningen tijdens de zwangerschap, fluxus postpartum en foetale bewaking, bij alle Nederlandse ziekenhuizen opgevraagd. Deze protocollen horen standaard in ieder ziekenhuis aanwezig te zijn en zijn in principe gebaseerd op het best beschikbare wetenschappelijke bewijs. De beschikbaarheid van wetenschappelijk onderbouwde protocollen wordt steeds belangrijker nu de zorg in Nederland verschuift naar een integraal model waarbij teams van zorgverleners samenwerken om betere geboorte zorg te kunnen leveren.

Hoewel er veranderingen in de zorg hebben plaats gevonden ná de uitvoering van dit onderzoek, zijn de uitkomsten van ons onderzoek een belangrijk benchmark wat betreft de beschikbare ondersteuning voor klinisch verloskundigen. Het is aannemelijk dat de uitkomsten van dit onderzoek nog steeds een realistische weergave van de huidige situatie zijn.

Met behulp van zowel een papieren als een digitale vragenlijst werden ziekenhuizen met een verloskundige afdeling gevraagd naar de

beschikbaarheid van deze drie protocollen en het verzoek of zij een kopie van deze protocollen wilden opsturen. Alle ontvangen protocollen werden systematisch beoordeeld op inhoud en methodologische kwaliteit met behulp van het gevalideerde AGREE raamwerk en een likert-schaal om de wetenschappelijke inhoud te evalueren.

Wij ontvingen antwoord van 48 van de 91 ziekenhuizen met een afdeling verloskunde. De methodologische kwaliteit van de geëvalueerde protocollen was beperkt. Op basis van het AGREE raamwerk kon 70% van de protocollen met betrekking tot foetale bewaking niet worden aanbevolen en scoorde slechts één ziekenhuis protocol "sterk aanbevolen". Over het algemeen ontbrak het in de protocollen aan wetenschappelijke onderbouwing.

Een toevallige bevinding van ons onderzoek was de bestaande verwarring over de definitie van wat een protocol is en inhoudt.

Dit onderzoek laat zien dat actuele en op wetenschappelijk bewijs gebaseerde protocollen tijdens de onderzoeksperiode niet of nauwelijks beschikbaar waren op de Nederlandse verloskundige afdelingen en dat, als ze al beschikbaar waren, ze van slechte kwaliteit waren.

Hoofdstuk 4

Vanwege de onduidelijkheden rondom taken en verantwoordelijkheden van klinisch verloskundigen en de beperkte kwaliteit van beschikbare protocollen die hun werk behoren te ondersteunen, is het verschil in arbeidssatisfactie en werkhouding tussen klinisch en eerstelijns verloskundigen onderzocht.

Aangezien arbeidssatisfactie en werknemerswelzijn gerelateerd zijn aan betere kwaliteit van zorg is het belangrijk om hier inzicht in te hebben. Dit hoofdstuk beschrijft een systematisch onderzoek naar arbeidssatisfactie van klinisch en eerstelijns verloskundigen in Nederland. Er werd een online vragenlijst uitgezet onder alle praktiserende verloskundigen in Nederland. De vragenlijst bestond uit een gevalideerde maat voor arbeidssatisfactie (de Leiden Kwaliteit van Werk Leven vragenlijst), waarmee de mening van deze verloskundigen ten opzichte van hun werk werd geanalyseerd.

De vragenlijst bevatte tien domeinen met een aantal "factor statements" per domein. Een van de domeinen betrof specifiek arbeidssatisfactie; de overige negen domeinen betroffen verschillende elementen gerelateerd aan arbeidssatisfactie.

In totaal beantwoordden 508 verloskundigen de vragenlijst, waarvan 103 klinisch en 405 eerstelijns verloskundigen. Alle verloskundigen, zowel klinisch als eerstelijns, gaven aan dat zij tevreden waren over hun werk. Er waren

echter significante verschillen tussen de twee groepen wat betreft de factoren die hun arbeidssatisfactie bepaalden. De belangrijkste factoren voor tevredenheid bij klinisch verloskundigen waren het aantal werkuren per week, werkafspraken (zoals protocollen) en het aantal jaren werkervaring. Sociale steun op het werk, werkbelasting, professionele autonomie en de invloed van werk op de privé sfeer, waren de belangrijkste factoren die bijdroegen aan de arbeidssatisfactie van eerstelijns verloskundigen. Onze data laten zien dat verloskundigen in het algemeen tevreden zijn over hun werk, maar dat de factoren die bijdragen aan arbeidssatisfactie verschillen op basis van waar zij werken: in de eerste lijn of in het ziekenhuis.

Aangezien arbeidssatisfactie van invloed is op de kwaliteit van de geleverde zorg en op de mate van tevredenheid over de verkregen zorg door cliënten, zijn deze verschillen belangrijk om mee te nemen bij het uitzetten van personeelsbeleid, en bij het bepalen van beleid met betrekking tot de introductie van nieuwe zorgmodellen.

De gevonden variatie in tevredenheid, afhankelijk van de plaats en het type werk, suggereert dat de arbeidssatisfactie van alle verloskundigen kan verbeteren als er meer wordt uitgegaan van op maat gemaakte strategieën die tegemoetkomen aan de verschillende factoren van arbeidssatisfactie onder eerstelijns en klinisch verloskundigen.

Hoofdstuk 5

Omdat professionele autonomie uit het onderzoek naar voren kwam als een significant onderdeel van arbeidssatisfactie, is ook onderzocht hoe verloskundige zorgverleners in Nederland hun professionele autonomie ervaren en welke effecten een integraal zorgsysteem volgens hen op deze autonomie zou kunnen hebben.

De data uit het onderzoek beschreven in hoofdstuk 4, zijn gebruikt om de ervaren professionele autonomie onder verschillende verloskundige zorgverleners, niet alleen verloskundigen maar ook gynaecologen en obstetrisch verpleegkundigen, te vergelijken. Deze data maken de mogelijke effecten van een nieuw systeem van integrale zorg op de professionele autonomie inzichtelijk.

In totaal namen 799 verloskundige zorgverleners deel aan (dit deel van) van de Leiden Kwaliteit van Werk Leven vragenlijst: 93 klinisch verloskundigen, 362 eerstelijns verloskundigen, 240 gynaecologen en 104 obstetrisch verpleegkundigen.

De antwoorden van de respondenten op de 'factor statements' uit het domein 'Beslissingsbevoegdheid', werden gecombineerd om een gemiddelde score voor professionele autonomie uit te rekenen. Deze score bleek het hoogst voor eerstelijns verloskundigen, gevolgd door gynaecologen, klinisch verloskundigen en het laagst voor obstetrisch verpleegkundigen.

Eerstelijns verloskundigen gaven aan het meest bezorgd te zijn over het verlies van hun professionele autonomie bij de introductie van een integraal verloskundig zorgsysteem.

Onze studie laat zien dat er een significant verschil is in professionele autonomie tussen de verschillende groepen verloskundige zorgverleners. Professionele autonomie is een belangrijk onderdeel van arbeidssatisfactie, en een hoog niveau van professionele autonomie heeft een positief effect op de professional-patiënt relatie.

Verloskundigen werkzaam in Nederland, vooral diegenen in de eerste lijn, zijn pessimistisch over het behoud van professionele autonomie bij de invoering van toekomstige zorgmodellen. Een afname van professionele autonomie zou dan ook een negatief effect kunnen hebben op werk-gerelateerd welzijn en tevredenheid bij professionals en op de ervaren zorg door vrouwen. Het behoud van een hoog niveau van ervaren professionele autonomie is een uitdaging bij de invoering van nieuwe zorgsystemen. Voor het behoud én het bevorderen van professionele autonomie, moeten zorgprofessionals worden ondersteund bij hun eigen manier van werken.

Hoofdstuk 6

Goede samenwerking tussen zorgprofessionals is een sleutelement in veilige en effectieve zorg. Echter het creëren van een goede samenwerkingscultuur kan een uitdaging zijn.

In hoofdstuk 6 besteden we aandacht aan hoe multidisciplinaire teams (MDT) die geboortezorg verlenen, interprofessionele samenwerking ervaren.

Ondanks het belang hiervan voor de geboortezorg, is nog maar weinig bekend over de wijze en de kwaliteit van samenwerking tussen de verschillende verloskundige zorgverleners in Nederland.

Om deze kennislacune op te vullen, hebben we de data van de eerder genoemde online vragenlijst (hoofdstuk 4) geanalyseerd om potentiële bevorderende factoren en barrières voor interprofessionele samenwerking binnen deze MDTs te identificeren.

Uit de antwoorden op de 'factor statements' uit het domein 'Werkpleksamenwerking binnen het MDT' uit de Leiden Kwaliteit van Werk vragenlijst is een gemiddelde samenwerkingscore berekend.

We ontvingen antwoorden van 3653 professionals, inclusief 97 klinisch verloskundigen, 390 gynaecologen, 390 eerstelijns verloskundigen en 2776 obstetrisch verpleegkundigen en kraamverzorgenden.

Veertig procent van de respondenten bleek niet tevreden over de samenwerking in het MDT.

Er waren significante verschillen in de gemiddelde samenwerkingsscores tussen de professionals. Verloskundigen, zowel klinisch als in de eerste lijn werkzaam, waren pessimistisch over de samenwerking in toekomstige modellen van verloskundige zorgverlening.

Optimale samenwerking is een veiligheidskwestie en een van de grootste uitdagingen in de huidige gezondheidszorg. De literatuur laat zien dat wanneer dit onderwerp niet wordt opgepakt, patiëntveiligheid in het geding kan komen. Er bestaan meerdere strategieën om suboptimale samenwerking te verbeteren, echter een one-size-fits-all strategie is niet voorhanden.

Onze studie laat zien dat de ervaren samenwerking niet optimaal is in de Nederlandse geboortezorg. Beleidsmakers die zich bezighouden met de introductie van integrale geboortezorg, doen er goed aan om voldoende aandacht te besteden aan de noodzaak om samenwerking tussen verloskundige zorgverleners te verbeteren.

Toekomstig onderzoek moet zich richten op welke strategieën het beste zijn om de samenwerking in MDTs te optimaliseren.

Hoofdstuk 7 Algemene discussie

De Nederlandse verloskunde ondergaat momenteel grote veranderingen. Substantiële aanpassingen in de financiering van de geboortezorg, de werkomstandigheden en de werkgelegenheidsdynamiek worden momenteel geïntroduceerd.

In dit hoofdstuk bespreken we de belangrijkste uitkomsten van dit proefschrift tegen de achtergrond van de bestaande literatuur en een geboortezorg systeem in transitie. Vervolgens bespreken we de mogelijke betekenis die de uitkomsten van ons onderzoek zou kunnen hebben op landelijk en / of regionaal beleid, toekomstig onderzoek en op de praktijk van de Geboortezorg.

Ons onderzoek liet zien dat klinisch verloskundigen bij het grootste deel van de tweedelijns bevallingen aanwezig waren en dat 40% van deze bevallingen zelfs volledig door de klinische verloskundige werden begeleid. Alhoewel dit een positieve bevinding is, omdat zorg door verloskundigen in verband wordt gebracht met minder onnodige interventies, vonden we ook een grote diversiteit in de taken, verantwoordelijkheden, werkomstandigheden en opleiding van klinisch verloskundigen in Nederland. Deze diversiteit laat de

noodzaak zien om de regulering aan te passen die invloed heeft op de praktijk en de taakuitoefening van klinisch verloskundigen.

Ten tijden van het onderzoek, bleken er geen actuele, op wetenschap gebaseerde protocollen van goede kwaliteit beschikbaar over drie belangrijke onderwerpen op Nederlandse verloskunde afdelingen. Sindsdien is het College Perinatale Zorg (CPZ) opgericht dat onder andere als taak heeft om een samenhangende strategie te ontwerpen voor de implementatie van integrale zorg. Een van de wijze waarop het CPZ dit heeft opgepakt, is met het publiceren en implementeren van de Zorgstandaard Integrale Geboortezorg (ZIG) in 2017. Alhoewel dit aan de oppervlakte een goed idee lijkt, is onderzoek hard nodig om vast te stellen of de ZIG ook daadwerkelijk zal leiden tot verbeteringen in de geboortezorg en of de ZIG ook betere onderbouwing en ondersteuning biedt bij het werk van klinische verloskundigen.

De verloskundigen die onze vragenlijst beantwoorden, waren over het algemeen tevreden over hun werk en alle respondenten waren het er over eens dat professionele ontwikkeling een belangrijk aspect is van hun werk. Er bleken echter wel belangrijke verschillen te zijn in factoren die bijdragen aan arbeidssatisfactie tussen klinisch en eerstelijns verloskundigen. Structurele elementen in hun werk, bleken belangrijk te zijn voor klinisch verloskundigen, terwijl de sociale aspecten belangrijker waren voor eerstelijns verloskundigen. Deze bevindingen zijn van belang voor zowel werkgevers als zorginkopers.

Een van de meer zorgwekkende bevindingen van ons onderzoek liet zien dat het merendeel van verloskundigen zich zorgen maakt over het behoud van hun professionele autonomie bij de introductie van integrale geboortezorg modellen. De reden dat dit zorgwekkend is, is omdat we weten dat een grote mate van autonomie belangrijk is voor de werktevredenheid en het welzijn van werknemers. Ook zorgwekkend is het gerapporteerde pessimisme over de samenwerking in multidisciplinaire geboortezorgteams. Goede samenwerking is van belang voor veilige en effectieve zorg. Bijna de helft van alle respondenten in onze vragenlijst, zowel verloskundigen als artsen, waren pessimistisch over de samenwerking in toekomstige zorgmodellen.

Onze aanbeveling is daarom dat indien toekomstige zorgmodellen een kans van slagen willen hebben, er specifiek aandacht wordt geschonken aan de huidige klinische diversiteit binnen de geboortezorg en dat verloskundige zorgverleners betrokken moeten worden op een wijze die recht doet aan hun professionele autonomie én die recht doet aan het verbeteren van de onderlinge samenwerking. Professionele samenwerking op andere gebieden in de gezondheidszorg kan daar bij tot een voorbeeld dienen.

Het is reeds bekend dat verloskundigen veilige en effectieve zorg verlenen, óók aan vrouwen die niet vallen onder criteria voor eerstelijns zorg. Dit proefschrift laat zien dat klinisch verloskundigen een belangrijk en onderscheidend onderdeel van de Nederlandse geboortezorg zijn geworden. De resultaten bieden inzicht in de dagelijkse praktijkuitoefening van klinisch werkende verloskundigen en daarmee inzicht in de dynamiek van het verloskundige aanbod binnen de Nederlandse geboortezorg.

Toekomstig onderzoek is echter nodig om te bepalen hoe de tot nu nauwelijks gereguleerde praktijk van klinisch verloskundigen verbeterd kan worden en hoe de geboortezorg, zowel in de wijk als in het ziekenhuis, het best tegemoet kan komen aan de wensen van (zwangere) vrouwen. Ons onderzoek, het eerste uitgebreide onderzoek naar de inhoud en omvang van het werk van klinische verloskundigen, is daartoe de eerste aanzet en opent de deur voor verder onderzoek. Het is daarbij belangrijk dat we meer te weten komen over de ervaring van zwangere vrouwen en hun partners, die begeleid worden door klinisch verloskundigen en meer kennis over de ervaring en perspectieven van klinisch verloskundigen zelf die tenslotte een belangrijke speler zijn geworden in de Nederlandse geboortezorg.

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Valorisation

The findings of our research have important implications, not only for midwives, but also for the mothers and babies in their care. By concentrating on a hitherto under studied group (hospital midwives) our research brings new knowledge to the profession and can be used to benchmark the contribution of hospital midwives and to guide the development of policies that protect women and guide their care throughout pregnancy and birth.

Relevance

Maternity care in the Netherlands is changing. The strict delineation characteristic of the traditional model – where midwives cared for women with normal pregnancies at home and obstetricians attended to women with complications – is increasingly less defined. Over the last twenty years, the number of midwives in the employ of hospitals has grown rapidly. Hospital midwives now represent one third of all practising midwives in the Netherlands, bridging the gap between primary and hospital care. Despite their increased presence in the hospital, there has been almost no examination of the contribution of hospital midwives to maternity care.

Given the apparent desire of the government to replace the traditional form of maternity care in the Netherlands with a new integrated-care model, it is imperative, prior to change, that the contribution of each professional in the maternity care team is visible, heard and measured.

Existing research has focused on the views of primary care midwives^{1,2}, obstetricians³ and pregnant women⁴. By describing the practice conditions, challenges, and opportunities faced by hospital midwives, this thesis makes a significant contribution to the body of knowledge regarding the professional groups that provide maternity care.

Our research serves as an important guide to developing policy for new models of maternity care. In these pages, we highlight the heretofore unacknowledged differences between hospital and primary care midwives and we provide evidence of what each group finds important about their work. These data offer a valuable benchmark for future studies of the profession and the maternity care system in the Netherlands.

Target groups

Our findings relate primarily to the diversity, practice conditions, and views of hospital midwives practising in the Netherlands. As such, our work will, first and foremost, be of interest to that group. Our studies of the job satisfaction of hospital midwives, their experienced autonomy, and their attitudes toward collaboration call attention to the differences between hospital and primary care midwifery. These data are critical for acknowledging the unique and important role of hospital midwives. Hospital midwives should take note of our findings, using them to help define their place within the maternity care framework and to ensure that their contribution is recognised.

However, because hospital midwives are only one piece of the larger puzzle of maternity care, our findings have significance for the other areas of maternity service provision, including primary care midwives, other members of the multi disciplinary maternity care team, insurers, regulators, and policymakers. By serving as an 'aide memoire' regarding the contribution of hospital midwives, our research can guide the work of policy makers and purchasers of maternity services in the Netherlands. And given the unique organization of maternity care in the Netherlands⁵, our research – highlighting the contribution of midwives generally and hospital midwives in particular – will be of interest to a wider international audience.

Our study of diversity in the practice of hospital midwives is especially useful in focusing attention to the practice conditions of hospital midwives and has already informed debate surrounding the introduction of a new category of 'clinical midwife' to the registrant categories of the Dutch Healthcare Practitioners Law. Furthermore, our study of the content, quality, and availability of protocols in maternity care in the Netherlands found that up-to-date, high quality evidence may not be readily available to hospital midwives in the Netherlands, an issue that is of critical importance for the health of mothers and babies.

Finally, by measuring the contribution of hospital midwives, our findings can be used to generate discussion regarding the introduction of practice and audit standards for hospital midwives. This would help to provide additional safety and protection to mothers and babies in our care.

Innovative character of the study

Most studies of midwives and midwifery in the Netherlands focus on the place of birth or primary care midwives. We chose to study hospital midwives a relatively new, fast-growing, and under-researched group within the maternity care model of the Netherlands. As little evidence regarding hospital midwives practice existed prior to our study, we began with a survey measuring the scope, breadth, and depth of the contribution of this group to maternity care in the Netherlands. This was the first such study of Dutch hospital midwives. By looking at hospital midwives as a group, we were able to establish that there is a high level of diversity in the scope and practice of hospital midwives and that the aspects of their work that hospital midwives find to be important are not the same as those that primary care midwives find important.

In the Netherlands, all hospital midwives are employees, whereas most primary care midwives are self-employed. This dynamic has generated significant differences in how hospital and primary care midwives view (elements of) their job satisfaction as well as in how they experience collaboration with other members of the care team and how they see their autonomy as professionals.

Throughout our study we used quantitative methods, comparing the two groups of midwives with each other and also with other members of the multi-disciplinary maternity care team. This offered a broad perspective from which we were able to make comparisons, test hypotheses, make assumptions, and draw conclusions regarding the contribution of hospital midwives. These measures have provided new knowledge regarding this group, contributing to the wider body of midwifery knowledge.

Activities

When we began our research, very little was known about the practice of hospital midwives in the Netherlands. As pioneers in this field, we have been able to disseminate our findings at a variety of local, national and international fora. We reached out to the community of hospital midwives through the clinical midwives group of Royal Dutch Organization of Midwives (KNOV), the Dutch midwives professional journal (TvV) and via conversation with students in the Master's level clinical midwife physician assistant course (KV, MPA). We also have been involved in teaching sessions for student midwives and have

interacted with obstetricians and other professionals involved with maternity service provision in the Netherlands.

All five of the studies included in the dissertation have been published in internationally renowned, peer-reviewed journals. Details of these and other publications are found in the Appendix of this thesis.

Following the publication of this thesis we will continue to disseminate the new and important insights gained through this study, thereby helping to raise the profile of hospital midwives in the Netherlands. In addition, we will look for new (financial) opportunities to further examine issues raised by our study. We expect our findings will contribute to the continuing discourse within the profession over the future of hospital midwives.

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Appendix

List of publications
and contributing
authors

Curriculum Vitae

Word of thanks

List of Publications:

Diversity in the Scope and Practice of Hospital-Based Midwives in the Netherlands

Doug Cronie, MA, RM, RN, Marlies Rijnders, PhD, RM, Simone Buitendijk, MD, PhD, MPH

Journal of Midwifery and Women's Health 1526-9523/09 doi:10.1111/j.1542-2011.2012.00164.x

Making Evidence Available for Hospital-Based Midwives: A Systematic Examination of the Content and Methodological Quality of Three Protocols Used in Maternity Hospitals in the Netherlands

Doug J. Cronie, Marlies Rijnders, Raymond de Vries, and Simone Buitendijk

INTERNATIONAL JOURNAL OF CHILDBIRTH Volume 4, Issue 4, 2014© 2014 Springer Publishing Company, LLC www.springerpub.com
<http://dx.doi.org/10.1891/2156-5287.4.4.208>

Are midwives in the Netherlands satisfied with their jobs? A systematic examination of satisfaction levels among hospital and primary-care midwives in the Netherlands.

Doug Cronie, MA, BSc, RM, RN, Hilde Perdok MSc RM, Corine J. Verhoeven PhD RM, Suze Jans PhD RM, Marieke Hermus MAA, RM, MSc, Prof. Dr. Raymond de Vries PhD, Dr Marlies Rijnders RM PhD

(Accepted by: BMC Health Service Research, May 2019)

How good is collaboration between maternity service providers in the Netherlands?

Doug Cronie, Marlies Rijnders, Suze Jans, Corine J Verhoeven, Raymond de Vries.

Journal of Multidisciplinary Healthcare 2019:12

Experienced job autonomy among maternity Professionals in the Netherlands.

Perdok H, Cronie D, van der Speld C, van Dillen J, De Jonge A, Rijnders M, De Graaf I, Schellevis F, Verhoeven C.

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Kramer J, Cronie D, Smit M, Schraagen J. Evaluation of Midwifery

Protocols in the Netherlands; an analysis of task and responsibility agreements among hospital maternity service providers [Verloskundige Protocol Evaluatie Nederland; een analyse van taak en verantwoordelijkheidsafspraken van tweedelijns zorgverleners]

TNO-report 031.20452;13 (in Dutch); October 2010.

Severe cardiorespiratory and neurologic symptoms in a neonate due to mepivacaine intoxication

de Groot-van der Mooren M, Quint S, Knobbe I, D. Cronie, van Weissenbruch M.

(Accepted by: Neonatology, June 2019)

Curriculum Vitae

Doug Cronie was born on the 9th of November 1965 in Johnstone, Scotland. The youngest of four boys, Doug went first to Bushes Primary School and later to Paisley Grammar School. Leaving school early and moving to England at fifteen, Doug was keen to make his way in the world and initially was not too focused on further education.

Following a motorbike accident and a prolonged stay in hospital, Doug found his path and trained to become a Registered General Nurse in 1984. This was to awaken in him a passion for learning. Subsequently Doug trained as a Midwife. Qualifying in 1990 Doug worked first as a hospital midwife in the North of England before moving to London in 1995 to work as a community midwife. While there, he began what has turned out to be an ongoing journey of continuing education. First came a Bachelor's degree, with honours in Midwifery from Thames Valley University.

In 1997 he was appointed Regional Officer for the Royal College of Midwives of the UK where he spent two years consolidating his knowledge of midwifery affairs.

Following his marriage in 1998 Doug and his husband moved to the Caribbean in 1999 where he was the first male midwife in the Bahamas and then in the Cayman Islands where he obtained a Masters degree with merit in Midwifery (also from Thames Valley University).

A further move in 2005 to the Netherlands brought the challenge of a new language and desire to learn all that he could regarding the Dutch model of midwifery care. Which, in turn led to this PhD.

In 2012 Doug was appointed Senior Midwife at Sint Lucas Andreas Ziekenhuis, a tertiary hospital in Amsterdam. Since 2016, Doug works as a clinical midwife at Onze Lieve Vrouw Gasthuis in Amsterdam. In addition, he serves as a midwife member of the Dutch Midwives Disciplinary Committee (Tucht College) and is active within the KNOV, the Dutch midwives Professional Organisation.

Doug is married to Daan Huijser (and together with Ayelle and Angie Martis) they have one daughter, Bowen (2017).

Thank you/Dankwoord

I'm finished! Many times I never thought I'd be able to say those words in the same sentence as my PhD! However, it is and I can.

Embarking on a PhD is a journey. A journey, which you don't make alone. Without the help and support of those you meet and bond with along the way, it is also one, which would be impossible to complete without their help. For that, I'm extremely grateful and I'd like to use this opportunity to thank some of them individually.

Firstly, my promotors Prof. Dr Raymond de Vries and Prof. Dr Simone Buitendijk and my Co-promotors Dr Marlies Rijnders and Dr Suze Jans.

Dear Ray, from the first time we met you've always been supportive and encouraging. Your feedback is always positive and designed to inspire confidence. Thank you for your wise words, helpful editing and for your unswerving trust and belief in me.

Dear Simone, all those years ago, you were the first to take me seriously, to listen to me and to lead me to believe that I could make something of my ideas. Despite your busy schedule, you've always made me feel that you have the time for me. Your guidance has been inspirational and your wisdom is profound.

Dear Marlies, of all those who've helped me, you've done the most! You've listened to me, encouraged me, challenged me and guided me, and all of it in the most supportive way. But more than any of that, you've become a friend. For that, I'll always be grateful. Thank you!

Dear Suze, you joined the party a little ways in but since then you've been supportive, constructive and kind. You've treated me as an equal and been positive and thoughtful in your critique.

To the members of the reading committee: Prof. Dr. Pim Teunissen, Prof. Dr. Judith de Jong, Prof. Dr. F. Stevens, Prof. Dr. Paul Lewis and Dr. Marrit Smit. Thank you for your scientific review of this thesis and for your time and willingness to take part in the public defence.

Although impossible to thank everyone else individually who's been supportive along the way, nevertheless some need particular mention.

Prof. Dr. Eileen Hutton, your guidance was particularly welcome at a time when I was wavering.

Dr. Evelien Spelten, your kindness and support meant more than you could have known.

Dr. Ank de Jonge, Thank you for our many discussions!

Dr. Corine Verhoeven and Dr. Hilde Perdok, thank you for your collaboration.

Mw Maureen Groven at Maastricht University, thank you for your procedural advice.

To all the midwives who took part in my research, you made it happen!

Thank you to my Cayman 'family', particularly Denise, Laura, Tully and Susie, Paul, Karen, Paul and Simone for providing me with the space and wise council needed to complete this work.

Special thanks to Jaimie Rogers for her help with the cover illustration (and for the privilege of allowing me to be your midwife!)

Dearest Heleen and Tineke, thank you for your enduring friendship and for being my paranimfen.

To my friends, family and colleagues, thank you for your ongoing interest and encouragement. Please know that each and every one of you (who are too many to mention) have all been instrumental in my completing this work.

Lastly, to my dearest husband, Daan. Thank you for being there through thick and thin, for your encouragement, your belief in me and for your never-ending support and also for giving me the time and space to complete this work. Without you, I wouldn't be the person I am today.

Doug.