Norwegian midwives' perceptions of empowerment

Abstract

Introduction: Midwives are educated to care for women during pregnancy, birth and the postnatal period. For midwives to be able to fulfill their professional role they need to be empowered to do so.

Aim of the study: To investigate Norwegian midwives' perception of empowerment in practice.

Method: A cross-sectional study. In September 2014, a random sample of 1500 midwives were sent a questionnaire, which included the Perception of Empowerment in Midwifery Practice Scale (PEMS). Of 1458 eligible midwives 595 (41%) completed the PEMS. Exploratory factor analyses and comparative analyses were done.

Results: Exploratory factor analyses identified three factors (subscales): *Supportive management*, *Autonomous professional role*, *Equipped for practice*. Midwives working in a hospital setting scored significantly lower on the factors S*upportive management* and *Autonomous professional role* compared to midwives not working in a hospital setting ($p<0.001$). Midwives with extra/special responsibilities scored higher than those without ($p<0.001$) on the same two factors. Midwives working at units with <2500 births scored significantly higher on all three factors compared to midwives working at units with ≥2500 births ($p<0.001$).

Conclusion: The PEMS showed that Norwegian midwives' perception of empowerment at work differed according to midwives´ education, role at work, duration of work experience, working situation and environment. This study supports the psychometric qualities of the PEMS.

Keywords: midwifery practice, empowerment, midwife, PEMS

Abbreviations:

PEMS: Perception of Empowerment in Midwifery Practice Scale

CPD: Continuous Professional Development

Introduction

The series on midwifery in the Lancet in 2014 showed the pivotal role midwives have in providing cost-effective high quality maternal and newborn care globally [1]. The series acknowledges that in some countries, the full scope of care that could be provided by midwives is limited by the health system and cultural barriers and that there is overlap between roles and responsibilities between different health professionals [1]. A crucial part of midwifery care is midwives using their expertise to empower women and families to gain control over factors that affect their health [2-5]. However, as Kirkham stated, "*if midwifery practice is to empower women then midwives must experience empowerment themselves*" [6],page 738.

The concept of empowerment may be defined and understood differently depending on the culture, context, and theoretical approach used [7, 8]. From an organizational perspective, the working environment gives or denies the individual access to formal and informal power structures facilitating empowerment [9]. Tools of empowerment in this perspective are information, resources, opportunities, support and interpersonal relationships [9]. Many studies have confirmed these to be important components of empowerment among health care staff [10-13]. The management perspective of empowerment emphasizes the role leadership plays in facilitating the empowerment of employees [14, 15]. The management literature presents the view of improved productivity, efficiency and making use of an employee´s full potential as the outcome of empowerment. In contrast, the psychological perspective of empowerment points to the individuals' perspective. For a person to feel empowered, a set of dimensions are necessary. The individual needs to feel able to perform and complete tasks, experience that the tasks have an impact and are meaningful and have the opportunity to make decisions about work [16]. Psychological empowerment has been widely investigated in healthcare staff [17, 18]. Finally, in the critical social theory perspective, empowerment can be viewed as the tool enabling nurses and midwives to become free from oppression imposed on them through historical legacy and culture [8, 12, 19].

Empowerment has been identified as an important factor in job satisfaction [20, 21], the retention of midwives in the profession [22-24], in the improvement of maternal health care [25], safety for patients [26] and in the management literature as a way of making use of an employee's full potential [27, 28].

Empowerment in the midwifery context, in contrast to nursing, has had limited attention. Kirkham and Stapleton [29] carried out a large project and found that lack of support and positive role models of support seemed to be hindering empowerment among midwives. A comprehensive qualitative study including 10 focus groups of altogether 93 nurses and midwives identified education for practice as a clear antecedent to empowerment [12]. Besides the previously mentioned organizational and management aspects of empowerment, this study by Corbally et al additionally showed that individual factors, such as personal confidence, belief in one's own capacity and power as well as interpersonal factors concerning interactions with others, influenced nurses' and midwives' experience of empowerment [12]. Finally, Corbally et al highlighted how professional issues such as support from professional bodies, having a clearly defined role and scope of practice enhanced midwives' empowerment while historical legacy, socialization in doing as you are told, prevented empowerment [12]. In their comprehensive review of the literature on empowerment in the clinical environment, Kennedy et al [8] places Corbally´s study among those with a mixed theoretical approach, together with the other studies amongst Irish nurses and midwives by Scott et al [10] and Casey et al [21].

The Perception of Empowerment in Midwifery Scale (PEMS) was developed and tested in Ireland to quantitatively measure, what conditions are important to midwives' perception of empowerment [13, 30]. The PEMS is based on a mixed theoretical approach. The development of this instrument additionally provides the opportunity for comparison across different groups and cultures. The PEMS has recently received further validation in a large population of midwives in New Zealand [31]. Factor analyses, in this recent study, revealed a different structure from that reported by the original scale developers. However, the psychometric qualities of the scale proved adequate also for this setting [31]. The original scale developers presented three factors labelled "Autonomous practice", "Effective management" and "Women-centered practice" including 18 of the 22 items tested [30]. The recent validation study found a four factor solution most appropriate for their data and presented the factors "Autonomy/Empowerment", "Manager support", "Professional recognition" and "Skills and resources" including 19 of the 22 items from the original scale [31].

No previous studies of Norwegian midwives´ perception of empowerment have been published. The aim of our study was therefore to assess Norwegian midwives' perception of empowerment and the underlying factors influencing Norwegian midwives perception of empowerment. In addition we examined the association of these factors with sub-groups among the midwives.

Methods

A cross-sectional study was designed to investigate midwives' working situation and emotional wellbeing. Almost identical studies have been performed in Australia, New-Zealand and Sweden [31-33]. In September 2014, questionnaires, together with a response envelope, were sent to a random sample of 1500 midwives registered with either one of the two midwifery unions in Norway. The two unions together organize near hundred percent of all active midwives in Norway. The majority of the midwives (67%) are organized in the Norwegian Association of Midwives (Den norske jordmorforening), while the rest are organized in the midwifery group of the Norwegian Nurses Organization (Jordmorforbundet). The sampling method ensured proportional sampling from both organizations. The number of midwives in active midwifery practice was around 3000 at the time of the study [34]. A third party (the printers) performed the random sampling and posting of the questionnaires. Lists with names and addresses were handled confidentially by them and destroyed after posting. No reminder was sent as the questionnaire was totally anonymous and the researchers knew neither whom they were sent to, nor who responded. Midwives were informed that the returning of a filled out questionnaire was considered to be their consent to participate.

Of the 1500 questionnaires, 1458 were eligible after exclusion of 26 due to wrong address (moved, unknown), and 16 midwives who no longer worked in midwifery. Of the 1458 eligible, 598 completed the questionnaire, 41%. Three midwives failed to answer the majority of the PEMS questions and were excluded from this study. It appears they skipped (missed) filling out two entire pages. Thus, the sample in this study was 595 (Fig. 1).

The study was submitted to the Medical and Health Research Ethics board of Southern Norway, who deemed their approval not required and the study not within their scope (Ref. 2014/153/REK Sør-Øst). The Norwegian Social Science Services (NSD) approved the study (Ref 38201/3/IB).

The questionnaire consisted of four parts. The first part collected background demographic information, such as age, civil status, main area of practice, years of experience, current post, type of midwifery education and other education.

The second part of the questionnaire inquired into midwives' health and wellbeing using a set of validated scales to measure quality of life, self-efficacy, interpersonal support, depression and

burnout. The third part of the questionnaire included the Perceptions of Empowerment in Midwifery Scale and the Practice Environment Sub-scale of the Nursing Work Index. The final and fourth part consisted of open-ended questions concerning the working environment and midwives' experiences at work.

The Perceptions of Empowerment in Midwifery Scale (PEMS), in Ireland, has been shown to be a valid and reliable measurement of empowerment containing three subscales; "Autonomous practice", "Effective management" and "Woman centered practice" [13, 30]. The 22-item scale uses a five point scoring system, with the scoring options "strongly agree", "agree", "neither agree nor disagree", "disagree" and "strongly disagree ". For each item, the minimum score is 1 (strongly disagree) and maximum score 5 "strongly agree". The higher the score the higher the level of perceived empowerment. This is the reverse of the scoring adopted by the developers of the PEMS [13, 30] but in accordance with the further validation study from New Zealand, by Pallant et al [31]. Seven items were worded negatively to protect against mechanical response pattern. These items were recoded to correspond with the other items in scoring for factor analysis. For the sub-group analysis the variable working hours was recoded and casual work became part time, in the variable work distribution any irregular hours (shifts or weekends) became one category. The variable main practice area was recoded into hospital ward and those in the community, education and other practice forms.

The Norwegian midwifery setting

In Norway, midwifery education has been a "specialization in nursing" since 1952, when being a qualified nurse became a requirement for entering into midwifery education. The opportunity to take nursing as a bachelor education started in the early eighties simultaneously with the phasing out of in-service training. In 2004, the midwifery specialization became a two-year full-time course, consisting of 50% theory and 50% practice. Since 2012, the midwifery course can be taken as a master's education at some, but not all of the midwifery educations in Norway.

The vast majority of midwives work within the national healthcare, in a hospital setting. "Normal birth units" are in hospital and under the supervision of a medical doctor. There are few free-standing midwifery-led units in Norway. Planned home birth is rare. Most antenatal care is giving at a community level, shared between family doctors and midwives. Norwegian midwives' scope of their professional activity is broad as they can independently care for healthy women with a normal pregnancy during pregnancy, birth and the postnatal period. Midwives are also involved in antenatal care of women with complicated pregnancies. Midwives are the ones who perform routine antenatal ultrasound, albeit after an intense course and new qualification. Midwives independently admit women in labor, assess progress, augment labor with oxytocin, order epidural analgesia, conduct normal deliveries, perform and suture episiotomies, and care for women postnatally in agreement with hospital procedures. Norwegian midwives involvement in family planning, pre- and post-pregnancy activities such as teaching reproductive health and cervical screening is limited. There are few independent midwives with a private practice.

Statistical analysis

Frequency distribution was utilized as a means of organizing and presenting the data. Missing items for the 22 questions were few (Table 1). No pattern was observed in the missing items and they were replaced by the series mean in the subsequent analyses as we felt it important to keep all midwives in the sample.

Cronbach's standardized alpha coefficient was be used to estimate the internal consistency reliability of the total scale and each of the subscales within the PEMS questionnaire [35]. Generally values of 0.7 are considered the minimum acceptable Cronbach Alpha value [36]. However, this value is influenced by the number of items in the scale, making it difficult to obtain in short scales [36]. Exploratory factor analyses were carried out to identify if the items grouped together into a smaller number of theoretically coherent factors. Principal Axis Factoring with Oblique (Direct Oblimin) rotation was done. Normality testing was performed on the three resulting subscales (factors).

Two subscales (factor 1 and 2) were normally distributed and therefore the mean and standard deviation are presented. One Way ANOVA was performed for comparing means across groups, with Bonferroni Posthoc test if more than two groups were included. The third factor was skewed and at first median and IQR was used as well as the corresponding Mann-Whitney U test and Kruskal-Wallis (more than two groups). As interpretation is more intuitive using the mean and standard deviation we additionally examined the third factor using this and One Way ANOVA. There were minimal differences between the results and no differences in significance. We therefor present the mean and corresponding tests for all three factors. All statistical analyses were two-sided at $\alpha = 0.05$ using the statistical program IBM SPSS version 22.

Results

A summary of key demographic characteristics of the participating midwives is presented in Table 2. Almost half (47.4%) of the participants were 50 years of age or older. Most midwives participating were midwives in clinical posts without extra/special responsibilities (77.8%) and most were working shifts (76.1%). The majority had more than 10 years experience as a midwife and over half of them worked part-time (53.4%). Most midwives worked in hospital.

Descriptive statistics for all 22 items of the PEMS are given in Table 1. Twenty-two items were examined in 595 cases, providing a case to item ratio of 27:1, which is deemed ample power for performing factor analysis [37]. The correlation matrix was visually inspected and suggested sufficient correlations to proceed with factor analysis. Suitability of the data was further examined using the Bartlett's test of sphericity and found to be significant at the <0.001 level. The Kaiser-Meyer-Olkin Measure of sampling adequacy was 0.877. The individual measures of sampling adequacy were all greater than 0.7 on the anti-image correlation matrix.

Principal Axis Factoring, using correlation matrix and rotation chosen was oblique (Direct Oblimin, with Kaiser Normalization). Various factor solutions using different methods of extraction and rotation were examined, producing very similar results. Five factors had eigenvalues greater than 1 (Kaiser's criterion), which accounted for 54.4% of the cumulative variance. The scree plot suggested a four or five factor solution. These solutions were extracted, but they had low internal validity and the five factor solution included a factor with only two items. In view of the conceptual clarity of the resulting factors, and following examination of the scree plot, 3 factors were extracted, accounting for 43.1% of the variance [37]. This solution is shown in table 3. Two items were removed from the scale as they failed to load above .4 on any factor. They were "I am not listened to by members of the multidisciplinary team (item 21)" and "I do not have adequate access to resources for birthing women in my care (item 7)".

The factors were named based on the items included. The first was named ***Supportive management*** and accounts for 26% of the variance**.** Five of the items in this factor are about the support, appreciation and communication from the manager/management. The other two items indirectly

reflect management as they mention information about changes in the organization affecting midwifery practice and the opportunity to further education and training.

The second factor, ***Autonomous professional role***, accounting for 12% of the variance, encompasses midwives' role, recognized by the medical profession. The items included characterize the role as autonomous. With midwives having control over their own practice, being accountable for their own practice and their practice being midwifery-led. Finally, the role is specific in its care for birthing women through being their advocate and empowering women.

The third, ***Equipped for practice*** has four items relating to the skills, education, support from colleagues and knowledge about the scope of practice which comprise the "daily working tools" for the midwives, equipping them for practice. This factor accounts for 6% of the variance.

The total scores were calculated for each of the subscales by adding the scores of each item in the respective factor and dividing this by the number of items in the factor. Descriptive statistics and inter-correlations among the subscales are presented in table 3. The Cronbach alpha coefficient for two of the three factors was above the recommended minimum of .70. The Cronbach alpha coefficient for *Equipped for practice* was 0.619 and the mean inter-correlation was .34. The low Cronbach alpha may be partly due to few items in the scale. Correlations between the factors ranged from .23 to .43, indicating insufficient overlap to combine the scores to form a total.

Midwives working in a hospital setting had a significant lower score on the factors *Supportive management* and *Autonomous professional role* compared to those not working in a hospital setting ($p<0.001$) (Table 4). These groups of midwives did not differ significantly for the subscale *Equipped for practice.* Midwives with extra/special responsibilities scored higher than those without ($p<0.001$) on the same two factors. Midwives working at units with <2500 births scored significantly higher on all three factors compared to midwives working at units with ≥2500 births ($p<0.001$) (Table 4).

Midwives with more than 20 years of midwifery experience had a significantly higher score on each of the sub-scales (Table 4). The significance of these findings did not alter when those who reported that the number of births was not relevant for their practice (n=80) were removed from the analysis (data not shown). Midwives with a postgraduate education scored significantly higher on the *Autonomous professional role* scale ($p=0.035$) but not on the two other subscales. These results overall support discriminant validity of the PEMS.

Discussion

Exploratory factor analyses resulted in three factors, which comprised 20 items. The factors were: *Supportive management, Autonomous professional role, Equipped for practice*. Midwives working in a hospital setting scored significantly lower on the factors *Supportive management* and *Autonomous professional role* compared to midwives not working in a hospital setting .Midwives with extra/special responsibilities scored higher than those without on the same two factors. Midwives working at units with <2500 births scored significantly higher on all three factors compared to midwives working at units with ≥2500 births .A postgraduate education resulted in a significantly higher score for an A*utonomous professional role* but not for experiencing *Supportive management* or feeling *Equipped for practice*. The PEMS showed good psychometric properties with the subscales being able to differentiate between groups of midwives.

The PEMS was developed to be able to assess the conditions which practicing midwives deemed important for allowing them to fulfill their professional role primarily in Ireland [38]. There are some similarities and some distinct differences between the framework in which midwives in Norway and

Ireland work. In both countries, midwives are regulated and registered to practice autonomously. However, in practice a medical consultant-led model of care exist [39]. Geographically the countries are vastly different. Although Norway has seen a move towards centralization of medical services there are still 22 institutions with <500 births a year, 17 with ≥ 500–2500 births a year, and only 7 with >2500 births a year. Yet, these 7 institutions care for 54% of the birthing women (Medical Birth Registry of Norway online statistics). In Norway, routine midwifery antenatal care is provided in the community in collaboration and largely under the supervision of a General Practitioner (GP). In contrast, in Ireland most antenatal care is provided at the hospital under supervision of an obstetrician, though midwife-led care is slowly growing [39]. In Norway and Ireland, homebirths and midwifery-led practice are still infrequent. Norway has no direct entry midwifery education, while Ireland has both direct entry and further education after nursing.

Even though, Norwegian midwives mostly work in consultant-led care, the scores of the PEMS indicate that they appear to perceive their role as autonomous. Maybe, this is because they are very skilled at navigating the different factors that influence decision-making, as reported by Blix-Linström et al.[20] . Midwives in Norway may also perceive autonomy as they can admit independently women who are in labor and independently discharge postnatal women without complications, essential components of professional autonomy for midwives [23] . However, more recently midwives seem to have become aware of the restrictions their workplace puts on their practice as a midwife [40].

While the recent New Zealand validation study of the PEMS revealed 4 factors, our study in agreement with the original development study only revealed three factors [30, 31]. However, the factors in our study are very similar to the ones from New Zealand [31]. The only real difference is that the New Zealand study has this extra factor called “Professional recognition”, which items in our study mostly come under *Autonomous professional role* [31].

Furthermore, our factor analysis, in agreement with the recent validation study from New Zealand [31] but in contrast to the original developed instrument [30], did not reveal a factor which could be named “Women-centered practice”. In our study the items specifically related to women-centered care (2, and 18) loaded in under the factor *Autonomous professional role*. A possible explanation is that Norwegian midwives view women-centered practice as inherent to their professional role. Alternatively, women-centered care has not been an explicitly discussed issue in Norway. Compared to other countries, for example Britain, Norway does not seem to have had the awakening to women-centered care [41]. Apart from one meeting organized by the health authorities where 23 women were invited to contribute with their experience and opinions on maternity care, complemented by the questionnaires of another 70 women, Norwegian women have had little opportunity to be involved in shaping the care they receive [42]. In contrast to the UK, women in Norway are not required to give written consent before common obstetric procedures such as an operative delivery, an induction of labor or epidural analgesia. While this could be explained as cultural differences between countries, this could also be an indication of less focus on women’s rights and women-centered practice.

Two items “I am not listened to by members of the multidisciplinary team (item 21)” and “I do not have adequate access to resources for birthing women in my care (item 7)” were removed from the scale. Both these items loaded in the factor called “Autonomous practice” in the three-factor solution of Mathews et al [30]. Not being listened to by members of the multidisciplinary team became part of the factor *“Professional recognition”* in the New Zealand study [31], a subscale not apparent in neither our nor the developers analyses [30]. Again, a probable explanation is cultural differences. The organizational culture in the Nordic countries is characterized by democratic

leadership where initiative from employees are welcomed and a relatively small power distances exists [43]. Midwives and obstetricians in Norway seem to work well together. However, conflicts do occur when midwives feel dictated by obstetricians [40].

Item 7, "I do not have adequate access to resources for birthing women in my care" had insufficient loading to be included in factor 1, S*upportive management* as in the study by Mathews [30]. This is surprising in view of the seemingly increasing pressure midwives experience in relation to time and space. Midwives regularly face the challenge of not having enough staff to provide adequate care in labor [44]. Maybe midwives do not see their managers as having the power to provide them with more resources. Additionally, the sample of midwives was mixed and included not only midwives caring for birthing women. This can explain why this item received insufficient loading. In the recent New Zealand study item 7 is part of the sub-scale "Skills and resources" [31]. This could indicate that neither midwives in New Zealand associate having adequate resources as something their managers can provide.

The factor, *Equipped for practice*, had a Cronbach alpha of less than .7, the accepted minimum. This is very likely due to the small number of items in the scale. Of the four items loading to factor 3, *Equipped for practice*, two were not part of the final scale in of Mathews et al in 2009 [30]. These were the items "I am adequately educated to perform my role" and "I know the scope of my practice". However, Mathews et al suggested using all 22 items when using the scale in a new sample as all items appeared important in the development phase of the scale [30].

Looking at the individual scores for each of the items, the item "I do not have adequate access to resources for staff education and training" stands out. Less than one third of the midwives disagree with this statement, indicating that midwives perceive the need for easier access to ongoing education and training. Norwegian midwives are not legally required to prove their life-long learning by collecting credits or entering a program of Continuous Professional Development (CPD) once qualified. Lack of such a requirement may limit their access to ongoing education and training.

The PEMS gives insight in how different aspects of empowerment affect groups of midwives differently. Midwives with a postgraduate degree experience significant more autonomy as a professional but their perception of S*upportive management* and *Equipped for practice* was not significantly different from those without a postgraduate degree. Until recently, midwifery in Norway was a postgraduate diploma, not a postgraduate degree. Thus, the midwives in this study with a postgraduate degree had an extra degree after midwifery, very likely, but not necessarily, related to their midwifery practice.

Our study has some limitations. The low response rate, a common problem in postal surveys, is problematic in relation to generalization of the results. The age distribution of our sample however, is very similar to that found in a recent web-based questionnaire distributed by the Norwegian Midwifery Association in which 48.5% of the midwives were 50 years or older (personal communication of unpublished data from the Norwegian Midwifery Association). Another limitation is the cross-sectional design, limiting the interpretation of cause and effect when significant association are found. A strength of the study is the large sample, including approx. one fifth of all practicing midwives in Norway [34].

This is the first published quantitative study on the perception of empowerment of midwives practicing in Norway. It is only the second study investigating the psychometric properties of the PEMS after the initial development and testing in Ireland. The subscale analyses allowed for discrimination between groups of midwives with different characteristics, which is a recognized strength of a good instrument. Hence, our study contributes to the future use of this instrument.

It is important for managers and educational institutions to be aware of the role they play in empowering midwives. Our findings suggest that Norwegian midwives perceive to have inadequate access to ongoing education and training. Perhaps Norwegian midwives would benefit from being legally required to engage in Continuous Ongoing Development (CPD) in order to be able to continue to practice as a midwife. This would stimulate managers, educational institutions and midwifery organizations to provide opportunities for all midwives to be life-long learners.

Conclusion

Norwegian midwives' perception of empowerment at work, measured with the PEMS, differed according to midwives´ education, role at work, duration of work experience, working situation and environment. *Supportive management,* an *Autonomous role* and being *Equipped for practice* were the three factors identified in the PEMS as relevant to midwives perception of empowerment.

Acknowledgments

We thank Anne Mathews for her valuable input in interpreting the results and critically evaluating the manuscript. This study received funding from the Norwegian Nurses Organisation (NSF).

References

[1] Renfrew MJ, McFadden A, Bastos MH, Campbell J, Channon AA, Cheung NF, et al. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. Lancet. 2014;384(9948):1129-45.

[2] International Code of Ethics for Midwives: International Confederation of Midwives; 2014 [updated 2014; cited 2015 5th of August 2015]. Available from: http://www.internationalmidwives.org/assets/uploads/documents/CoreDocuments/CD2008_001%20V2014%20ENG%20International%20Code%20of%20Ethics%20for%20Midwives.pdf.

[3] Hermansson E, Martensson L. Empowerment in the midwifery context--a concept analysis. Midwifery. 2011;27(6):811-6.

[4] Halldorsdottir S, Karlsdottir SI. Empowerment or discouragement: women's experience of caring and uncaring encounters during childbirth. Health care for women international. 1996;17(4):361-79.

[5] Fahy K. Reflecting on practice to theorise empowerment for women: using Foucault's concepts. Australian journal of midwifery : professional journal of the Australian College of Midwives Incorporated. 2002;15(1):5-13.

[6] Kirkham M. The culture of midwifery in the National Health Service in England. J Adv Nurs. 1999;30(3):732-9.

[7] Kuokkanen L, Leino-Kilpi H. Power and empowerment in nursing: three theoretical approaches. J Adv Nurs. 2000;31(1):235-41.

[8] Kennedy S, Hardiker N, Staniland K. Empowerment an essential ingredient in the clinical environment: a review of the literature. Nurse education today. 2015;35(3):487-92.

[9] Kanter RM. Men and Women of the Corporation. USA: Basic Books; 1993.

[10] Scott PA, Matthews A, Corbally MA. Nurses' and midwives' understanding and experience of empowerment in Ireland. Final Report. Dublin: Department of Health and Children, 2003.

[11] Laschinger HK, Finegan J, Wilk P. Context matters: the impact of unit leadership and empowerment on nurses' organizational commitment. The Journal of nursing administration. 2009;39(5):228-35.

[12] Corbally MA, Scott PA, Matthews A, Gabhann LM, Murphy C. Irish nurses' and midwives' understanding and experiences of empowerment. J Nurs Manag. 2007;15(2):169-79.

[13] Matthews A, Anne Scott P, Gallagher P, Corbally MA. An exploratory study of the conditions important in facilitating the empowerment of midwives. Midwifery. 2006;22(2):181-91.

[14] Laschinger HK, Wong CA, Grau AL. Authentic leadership, empowerment and burnout: a comparison in new graduates and experienced nurses. J Nurs Manag. 2013;21(3):541-52.
[15] Conger JA, Kanungo RN. The empowerment process: Intergrating theory and practice. Academy of Management Review. 1988;13(3):471-81.
[16] Spreitzer GM. Psychological empowerment in the workplace: Dimensions, measurement and validation. Academy of Management Review. 1995;38(5):1442-65.
[17] Kuokkanen L, Suominen T, Harkonen E, Kukkurainen ML, Doran D. Effects of organizational change on work-related empowerment, employee satisfaction, and motivation. Nursing administration quarterly. 2009;33(2):116-24.
[18] Casey M. Partnership--success factors of interorganizational relationships. J Nurs Manag. 2008;16(1):72-83.
[19] Fahy K. An Australian history of the subordination of midwifery. Women and birth : journal of the Australian College of Midwives. 2007;20(1):25-9.
[20] Blix-Lindstrom S, Johansson E, Christensson K. Midwives' navigation and perceived power during decision-making related to augmentation of labor. Midwifery. 2008;24(2):190-8.
[21] Casey M, Saunders J, O'Hara T. Impact of critical social empowerment on psychological empowerment and job satisfaction in nursing and midwifery settings. J Nurs Manag. 2010;18(1):24-34.
[22] Sullivan K, Lock L, Homer CS. Factors that contribute to midwives staying in midwifery: a study in one area health service in New South Wales, Australia. Midwifery. 2011;27(3):331-5.
[23] Vann MK. Professional autonomy for midwives. An essential component of collaborative practice. Journal of nurse-midwifery. 1998;43(1):41-5.
[24] Stafford S. Lack of autonomy. A reason for midwives leaving the profession? The practising midwife. 2001;4(7):46-7.
[25] Tibandebage P, Kida T, Mackintosh M, Ikingura J. Can managers empower nurse-midwives to improve maternal health care? A comparison of two resource-poor hospitals in Tanzania. The International journal of health planning and management. 2015.
[26] Kirwan M, Matthews A, Scott PA. The impact of the work environment of nurses on patient safety outcomes: a multi-level modelling approach. International journal of nursing studies. 2013;50(2):253-63.
[27] Forrester R. Empowerment: Rejuvinating a potent idea. Academy of Management. 2000;14(3):14.
[28] Mannion R, Davies HT, Marshall MN. Cultural characteristics of "high" and "low" performing hospitals. Journal of health organization and management. 2005;19(6):431-9.
[29] Kirkham M, Stapleton H. Midwives' support needs as childbirth changes. J Adv Nurs. 2000;32(2):465-72.
[30] Matthews A, Scott PA, Gallagher P. The development and psychometric evaluation of the Perceptions of Empowerment in Midwifery Scale. Midwifery. 2009;25(3):327-35.
[31] Pallant JF, Dixon L, Sidebotham M, Fenwick J. Further validation of the perceptions of empowerment in midwifery scale. Midwifery. 2015.
[32] Hildingsson I, Westlund K, Wiklund I. Burnout in Swedish midwives. Sexual & reproductive healthcare : official journal of the Swedish Association of Midwives. 2013;4(3):87-91.
[33] Jordan K, Fenwick J, Slavin V, Sidebotham M, Gamble J. Level of burnout in a small population of Australian midwives. Women and birth : journal of the Australian College of Midwives. 2013;26(2):125-32.
[34] Rein IJ. Tall på jordmødre i Norge. Tidsskrift for Jordmødre. 2015(1):1.
[35] Cronbach LJ. Coefficient alpha and the internal structure of tests. Psychometrika. 1951;16:297-334.
[36] Nunnally JA. Psychometric Theory. New York: Mc Graw-Hill; 1978.
[37] Pett MA, Lackey NR, Sullivan JL. Making Sense of Factor Analysis for Instrument Development in Health Care Research. California: Sage; 2003.

[38] Butler MM, Brosnan MC, Drennan J, Feeney P, Gavigan O, Kington M, et al. Evaluating midwifery-led antenatal care: using a programme logic model to identify relevant outcomes. Midwifery. 2014;30(1):e34-41.
[39] Begley C, Devane D, Clarke M, McCann C, Hughes P, Reilly M, et al. Comparison of midwife-led and consultant-led care of healthy women at low risk of childbirth complications in the Republic of Ireland: a randomised trial. BMC pregnancy and childbirth. 2011;11:85.
[40] Greve T. Disturbing "new" trends in tear prevention threaten midwives' autonomy. Midwifery today with international midwife. 2009(92):56-7.
[41] Sandall J. Choice, continuity and control: changing midwifery, towards a sociological perspective. Midwifery. 1995;11(4):201-9.
[42] Legkvinnekonferanse om fødsels- og barselomsorgen. 1999 Contract No.: IK-2691.
[43] Bakka JF, Fivelsdal E, Lindkvist L. Organisationsteori - Struktur - Kultur - Processer. 5th ed. Malmö, Sweden: Liber; 2006.
[44] Rein IJ. Frykter for pasientsikkerheten i sommer. Tidsskrift for Jordmødre. 2015;121(4):8-9.

Table 1. Summary results for the perceptions of empowerment in midwifery scale before imputation of missing, N=595

	Response (valid % per item)	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Missing
1	I am valued by my manager	28.2	43.2	21.0	5.2	1.7	0.7
2	I am an advocate for birthing women	27.6	49.6	21.0	1.7	0.0	0.2
3	I am involved in midwife-led practice	20.5	42.2	20.2	10.3	4.5	2.4
4*	I do not have the skills required to carry out my role	1.5	2.0	3.0	33.6	59.3	0.5
5	I have the back-up of my manager	30.1	44.2	19.2	4.4	1.5	0.7
6*	I am not recognized for my contribution to the care of birthing women by my manager	1.5	4.5	19.8	37.3	35.3	1.5
7	I have adequate access to resources for birthing women in my care	12.9	47.6	18.7	15.5	3.0	2.4
8*	I do not have a supportive manager	2.5	8.1	17.3	35.5	34.5	2.2
9	I have effective communication with management	18.2	44.5	24.7	8.1	3.5	1.0
10*	I am not informed about changes in my organization that will affect my practice	4.7	11.6	27.1	42.4	13.3	1.0
11	I am adequately educated to perform my role	54.8	38.7	5.0	1.2	0.3	0.0
12	I have support from my colleagues	48.9	47.4	3.4	0.2	0.0	0.2
13	I am able to say no when I judge it to be necessary	28.1	51.1	15.0	4.9	0.7	0.3
14*	I do not know what my scope of practice is	1.3	0.3	2.2	27.1	68.7	0.3
15	I am accountable for my practice	40.0	51.6	7.1	0.8	0.3	0.2
16	I am recognized as a professional by the medical profession	30.4	47.6	17.5	3.5	0.7	0.3
17	I have control over my practice	34.5	48.6	11.1	5.0	0.5	0.3
18	I empower birthing women through my practice	17.5	53.9.	25.9	1.7	0.2	0.8
19*	I do not have adequate access to resources for staff education and training	5.2	20.3	42.2	23.4	4.9	4.0
20	I have autonomy in my practice	21.3	52.9	19.3	3.9	0.7	1.8
21*	I am not listened to by members of the multidisciplinary team	0.7	3.9	13.8	58.2	22.2	1.3
22	I am recognized for my contribution to the care of birthing women by the medical profession	24.2	49.4	20.0	4.4	0.3	1.7

* Negatively worded in the questionnaire, recoded in the factor analysis and sub-scale analysis.

Table 2. Demographic characteristics of the sample of Norwegian midwives, N=595

		n	%
Age (years)	25–49	313	52.6
	50–60+	282	47.4
Main area of practice	Community A/N care	113	19.0
	Labour ward	159	26.7
	Normal birth unit	21	3.5
	Out-patients Department	22	3.7
	Postnatal ward	27	4.5
	Ultrasound in Hospital	20	3.4
	Education (12)/Management (11)	23	3.9
	Combined labour/postnatal ward	181	30.4
	Other (2 in hospital ward setting)	29	4.9
Post	Midwife without management responsibilities	463	77.8
	Clinical midwife manager	24	4.0
	Clinical education and/or research midwife	25	4.2
	Specialist midwife	55	9.2
	Assistant clinical midwife manager	14	2.3
	Private practice	7	1.2
Nr. Birth at place of practice	<2500	286	48.1
	≥ 2500	227	45.4
	Not relevant	82	6.5
Years of midwifery experience	0–10	185	31.1
	10–20	184	30.9
	>20	224	37.6
	Missing	2	0.3
Working hours	Full time	273	45.9
	Part time	309	51.9
	Casual	9	1.5
	Missing	4	0.7
Work distribution	Daytime only	142	23.9
	Nighttime only	37	6.2
	Days and evenings (no nights)	66	11.1
	All shifts, days, evenings and nights	336	56.5
	Missing	14	2.4
Highest academic degree	Non-degree	313	52.6
	Bachelor	246	41.3
	Postgraduate	36	6.1

Table 3. Presentation of the three factors, N= 595

Item Nr.		Factor 1 Supportive management	Factor 2 Autonomous professional role	Factor 3 Equipped for practice
	% variance explained by each factor	26.0	11.9	6.1
5	I have the back-up of my manager	0.877		
8*	I have a supportive manager	0.863		
1	I am valued by my manager	0.828		
9	I have effective communication with management	0.744		
6*	I am recognized for my contribution to the care of birthing women by my manager	0.735		
10*	I am informed about changes in my organization that will affect my practice	0.443		
19*	I have adequate access to resources for staff education and training	0.404		
22	I am recognized for my contribution to the care of birthing women by the medical profession		0.687	
16	I am recognized as a professional by the medical profession		0.603	
20	I have autonomy in my practice		0.530	
18	I empower birthing women through my practice		0.478	
17	I have control over my practice		0.473	
2	I am an advocate for birthing women		0.403	
15	I am accountable for my practice		0.403	
3	I am involved in midwifery-led practice		0.393	
13	I am able to say no when I judge it necessary		0.337	
11	I am adequately educated to perform my role			0.616
4*	I have the skills required to carry out my role			0.557
12	I have support from my colleagues			0.411
14*	I know the scope of my practice			0.399
	Mean (SD)	3.72 (0.72)	4.00 (0.47)	4.50 (0.46)
	Median (IQR)	3.86 (1.00)	3.89 (0.67)	4.50 (0.75)
	Internal reliability of factors (Cronbach's alpha)	0.868	0.761	0.619
	Mean inter-item correlation	.48	.26	.29
	Correlations among the subscales (r)			
	Supportive management	-		
	Autonomous professional role	.36	-	
	Equipped for practice	.23	.43	-

Pattern matrix showing loadings ≥ 0.4. *items originally negatively worded.

Table 4. Subgroup analyses, N= 595

			Factor 1: Supportive management		Factor 2: Autonomous professional role		Factor 3: Equipped for practice	
		n	mean (SD)	p-value*	mean (SD)	p-value*	mean (SD)	p-value*
Age (years)	25–49	313	3.67 (0.69)	0.073	3.91 (0.47)	<0.001	4.44 (0.49)	<0.001
	50–60+	282	3.77 (0.74)		4.07 (0.45)		4.57 (0.42)	
Main practice area	Hospital ward/setting	443	3.65 (0.71)	<0.001	3.95 (0.46)	<0.001	4.49 (0.47)	0.172
	Community, education, other	152	3.91 (0.70)		4.11 (0.47)		4.55 (0.45)	
Post	without extra responsibilities	463	3.64 (0.73)	<0.001	3.96 (0.48)	0.011	4.50 (0.45)	0.802
	with extra responsibilities	132	3.98 (0.60)		4.08 (0.43)		4.51 (0.51)	
Births at practice	<2500 or not relevant	366	3.80 (0.70)	<0.001	4.07 (0.47)	<0.001	4.57 (0.43)	<0.001
	≥ 2500	227	3.58 (0.72)		3.86 (0.44)		4.40 (0.49)	
Midwifery experience	0–20 years	369	3.66 (0.72)	0.006	3.93 (0.47)	<0.001	4.45 (0.48)	<0.001
	>20 years	224	3.82 (0.70)		4.09 (0.46)		4.59 (0.42)	
Working hours	Full time	273	3.81 (0.70)	0.006	4.03 (0.47)	0.061	4.52 (0.44)	0.359
	Part time	318	3.64 (0.71)		3.96 (0.48)		4.48 (0.48)	
Work distribution	Daytime, weekdays only	142	3.97 (0.61)	<0.001	4.09 (0.45)	0.004	4.52 (0.49)	0.580
	Shifts / weekends	453	3.64 (0.73)		3.96 (0.47)		4.50 (0.45)	
Academic degree	No degree	313	3.75 (0.67)	0.366	3.97 (0.47)	0.035	4.50 (0.47)	0.684
	Bachelor	246	3.67 (0.76)		3.98 (0.47)		4.50 (0.45)	
	Postgraduate education	36	3.74 (0.74)		4.18 (0.47)		4.57 (0.48)	

* T-test when only two groups are compared, One way ANOVA, with Bonferroni Posthoc test when more than two groups are compared.