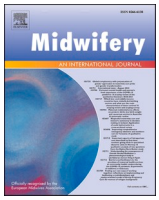
Midwifery 133 (2024) 103997

Contents lists available at ScienceDirect

Midwifery

journal homepage: www.elsevier.com/locate/midw



Swedish maternity care professionals' perception of labor induction

Gabriel Raoust [a,b,*], Stefan Rocco Hansson [a,c], Petri Kajonius [d]

[a] Division of Obstetrics and Gynecology, Department of Clinical Sciences Lund, Lund University, BMC C14, 221 84 Lund, Sweden
[b] Women's Health Clinic, Ystad Hospital, Kristianstadsvägen 3A, Ystad 271 33, Sweden
[c] Women's health clinic, Skåne University Hospital, Klinikgatan 12, Lund 221 85, Sweden
[d] Department of Psychology, Lund University, Box 213, Lund 221 00, Sweden

ARTICLE INFO

Keywords:
Childbirth
Obstetrics
Physicians
Midwives
Labor induction
Personality
Social psychology
Stress
Work Satisfaction

ABSTRACT

Background: Sweden recently adopted new labor induction guidelines lowering the threshold for post-term pregnancies to 41+ weeks. Despite evidence-based foundation, these guidelines stirred controversy among maternity care professionals, who voiced concerns about potential risks and unintended consequences, such as a rising Caesarean section rate. Midwives also highlighted potential impacts on their roles, workload, and working environment; implications that could affect obstetricians and gynecologists as well. Investigating Swedish maternity care professionals' views on labor induction could benefit policymakers, managers, and birthing women alike.

Aim: The aim of this study was to describe and compare midwives to obstetricians/gynecologists, with regards to their views on labor induction, and how this relates to other work-related variables such as overall job satisfaction, clinical experience, gender, age, personality, and workload.

Methods: Swedish midwives ($N = 207$, 99 % women, $M = 45.2$ years), and obstetricians/gynecologists ($N = 240$, 83 % women, $M = 44.3$ years) responded to an online questionnaire reflecting aspects of maternity care work. The data was analyzed using Welch's *t*-test and Pearson's correlation analysis.

Results: A large difference was observed in labor induction views between midwives and obstetricians/gynecologists ($d = 1.39$), as well as lower job satisfaction with midwives ($d = -0.26$). Overall job satisfaction further correlated negatively with views on labor induction ($r = -0.30$).

Conclusions: Labor inductions might pose challenges to midwives and could bring to light underlying tensions between obstetricians/gynecologists and midwives. Given the modest response rate of the study, we cautiously suggest that while the development of new maternity care guidelines should be grounded in evidence, they should also embrace concerns and insights from a diversity of professional perspectives.

Introduction

In Scandinavia, concerted efforts to reduce perinatal mortality have led to a rise in labor inductions over recent decades (Graviditetsregistret, 2021). The advent of new Swedish labor induction guidelines in 2020, revised in 2022, marks a continuation of this trend, aligning with similar international policies (World Health Organization 2018; Swedish Guidelines, 2021). These guidelines lowered the threshold for post-term pregnancy management from 42+0 to 41+0 weeks, resulting in an increase in induction rates from 20.7 % to 26 % between 2019 and 2021, as a price for fewer fatal cases (Statistik om graviditeter 2022). Notably, several maternity units changed their local practices influenced by early reports of the Swedish SWEPIS randomized controlled trial, explaining the increase in induction rates as early as 2020 (Wennerholm et al., 2019).

Despite the claims of a solid evidence-based rationale, the guidelines and their implementation at a national level stirred controversy among maternity care professionals. Many expressed concerns about potential risks and unintended consequences of earlier labor inductions, especially for healthy pregnant women with uncomplicated pregnancies, such as an increased Caesarean section rate. Midwives also voiced concerns about the impact on their roles and work environment, including an increased workload for themselves, and for obstetricians/gynecologists, and the potential for more negative birth experiences for women (Coates et al., 2019).

At the heart of the debate is a disagreement concerning the available

* Corresponding author at: Women's Health Clinic, Ystad Hospital, Kristianstadsvägen 3A, Ystad 271 33, Sweden.
E-mail address: gabriel.raoust@med.lu.se (G. Raoust).

https://doi.org/10.1016/j.midw.2024.103997
Received 8 August 2023; Received in revised form 7 April 2024; Accepted 10 April 2024
Available online 11 April 2024

scientific evidence. The prominent Cochrane review has faced criticism for methodological heterogeneity and potential bias towards favorable outcomes (Middleton et al., 2018; Maimburg, 2020). Moreover, the SWEPIS trial, while influential, ended prematurely, prompting questions about the validity of its recommendations, and necessitating cautious clinical application (Wennerholm et al., 2019; Maimburg, 2020; Pocock and White, 1999; Montori et al., 2005). Concurrently, other evidence contradicting the current trend towards earlier inductions has possibly been overlooked (Rydahl et al., 2019). It has been suggested that such limitations would necessitate a more careful consideration when shifting to a more proactive induction policy and the need for a more nuanced communication of the underlying results before implementing them into clinical practice (Maimburg, 2020).

Furthermore, the pervasive narrative that maternity care is becoming too medicalized supports midwives' concerns (Johanson et al., 2002; Clesse et al., 2018). While midwives are notably autonomous and influential within Swedish maternity care, a push towards more medicalization inadvertently amplifies obstetricians/gynecologists' status, as their risk-focused perspective and methodologies align with this system's priorities (Clesse et al., 2018; Healy et al., 2016; MacKenzie Bryers and van Teijlingen, 2010). Despite collaborative efforts between obstetricians/gynecologists, and midwives in their care for women throughout their pregnancies, childbirth, and the postpartum period, physicians retain the overall medical responsibility for hospitalized births (Milton, 2001; Jansson, 2008). Furthermore, both historical and contemporary evidence suggests that the difference in perspectives – midwives emphasize the natural physiological process of birth, while physicians intervene during complications (Table 1) (Schuman and Marteau, 1993; Larsson, 2022; Reime et al., 2004) – is an ongoing source of discontent and disconnect between professionals (Milton, 2001; Jansson, 2008; Larsson, 2022; Hansson et al., 2022; Hansson et al., 2021; Hansson et al., 2019).

Reflecting further on the broader implications of lowering the threshold for post-term pregnancy management, we suggest it is crucial to understand the divergence in professional perspectives on labor induction. There is evidence on birthing women's perspective on induction of labor but to the best of our knowledge, no previous study examining maternity care professionals' views on labor induction has been conducted (Coates et al., 2019; Nilver et al., 2022). Gaining insights into Swedish maternity care professionals' views on labor induction could benefit policymakers, managers, and birthing women alike. The aim of this study was to systematically describe and compare midwives and obstetricians/gynecologists, with regards to their views on labor induction, and the relation to other work-related variables such as overall job satisfaction, clinical experience, gender, age, personality, and workload.

Methods

Study design

A comparative and correlational cross-sectional survey was designed to investigate the relationships between maternity care professional's views on labor induction and work-related variables.

Details of ethical approval

The study was approved by the Swedish Ethical Review Authority [permit no. 2022-01371-02] and conducted in compliance with applicable guidelines and regulations. Informed consent was obtained from participants and withdrawal from the study was optional at any time.

Participants

The questionnaire was sent out to all Swedish midwives, members of the Swedish Association of Midwives (SAM), or members of the Swedish Association of Health Professionals (SAHP) and to all Swedish obstetricians/gynecologists, members of the Swedish Society for Obstetrics and Gynecology (SSOG). A reminder was sent out after the first month of data collection. Data was collected during three months in 2022. As stated in SSOG's 2021 annual report, its membership comprised of 2213 individuals, of which 439 were retired physicians. The SAM's and SAHP's membership information remains undisclosed. All the initial 447 responses were included, after controlling for duplicates. An overall response rate analysis was not possible due to some unions not wanting to release their membership numbers. The absolute number of responses from midwives (Midwives), and from obstetricians/gynecologists (Ob&Gyn) was approximately similar. A sample of $N_{Midwives}$= 207 (99 % women, M_{Age} = 45.2 years (SD = 10.4), 27–70 years) and a sample of $N_{Ob\&Gyn}$ = 240 (83 % women, M_{Age} = 44.3 years (SD = 10.4), 27–74 years) were used for all comparison analyses. A compounded sample $N_{Ob\&Gyn+Midwives}$ = 447 was used for the correlation analyses.

Instruments

Aspects of maternity care work were assessed with three measures: Negative Induction Index (NII), Health care Crisis Experience (HCE), and Job Satisfaction (JS). NII is a novel term introduced to specifically address the challenges and ethical dilemmas faced by maternity care professionals in relation to inductions. The tool measures the perceived negative impact of inductions. NII was constructed based on authors' clinical experience as well as informal discussions with midwives and supported by research (Jansson, 2008; Hansson et al., 2022). To our current understanding no other tool has been constructed to investigate this specific aspect. See Table 2 for the item content, measured on a 1–5 Likert scale. HCE denotes personal growth outcomes from crisis events in the healthcare setting, serving as an indirect measure of a professional's resilience (Goncalves et al., 2022). See Table 2 for those aspects of maternity care work, measured on a 1–5 Likert scale. JS is a term widely recognized in occupational studies. This was used to gauge overall wellbeing and stress in the professional setting (Faragher et al., 2005). See Table 2 for content, measured on a 1–5 Likert scale. In the context of this study, it was assumed that these three measures were interconnected and could relate to maternity care professionals' day-to-day experience, reflecting some of the strains and satisfactions in their roles. See Table 3 for reliability coefficients and sample distribution. See further supplementary material S1 for exploratory factor analysis of aspects of maternity care work, reporting satisfactory psychometric properties and model fit.

The Five Factor Model (FFM) has demonstrated to capture stable

Table 1
A historical overview of Swedish midwifery.

Historically, Swedish midwives have established a distinct profession alongside obstetricians/gynecologists, addressing societal needs and obligations by supporting women through the critical experiences of childbirth, particularly in the 18th century agrarian and 19th century preindustrial society where their knowledge, experience, and prevalence were essential (MacKenzie Bryers and van Teijlingen, 2010; Schuman and Marteau, 1993). For over two centuries, driven by the state's goal to enhance living conditions and improve maternal and infant survival rates, they have actively maintained and underscored their unique role and fortified their professional identity in maternity care (Milton, 2001; Schuman and Marteau, 1993). As the primary caregivers for women during normal pregnancy, childbirth, and the postpartum period, midwives are complemented by obstetricians/gynecologists when complications arise. In Sweden, echoing the global view of midwives as defenders of natural, woman-centered birth, they navigate the natural versus medicalized birth continuum, often opting for collaboration with obstetricians/gynecologists to ensure the integration and validation of their practices within the dynamic, state-sponsored healthcare system (MacKenzie Bryers and van Teijlingen, 2010; Milton, 2001; Schuman and Marteau, 1993).

Table 2
Aspects of maternity care work.

Negative Induction Index (NII): Detrimental effects of labor inductions on professionals' job performance.	The increased number of inductions… • Affects my work situation negatively. • Creates a sense of conflict in my professional role. • Gives me a bad conscience in relation to the birthing woman.
Healthcare Crisis Experience (HCE): A sudden, or unexpected, time-sensitive event that poses a significant threat to the health or well-being of patients, professionals, or the medical facility itself.	What is your experience of a healthcare-related crisis situation? • Experienced several. • Has subsequently made me feel more secure in my professional role. • Have become more skilled in my profession as a result. • Cooperation has usually been good. • Have eventually become better at collaborating.
Job Satisfaction (JS): Feelings towards one's current work, including the effect of stress.	How true is the following statement to you? • Happy with my career choice. • Enjoy my work place. • Often feel stressed at work. • Experience a good balance between what is demanded of me and what I can perform. • Feel bad before the work shift. • Stress affects my work negatively. • Make better decisions when I'm stressed.

Note: Items refer to question 9.1 to 9.3 (Negative Induction Index- NII), 11.1 to 11.5 (Healthcare Crisis Experience - HCE), and 7.1 to 7.7 (Job Satisfaction - JS) in the questionnaire. Question 11.1 was excluded from the item generation because relating to quantity rather than quality. Questions 7.1 and 7.7 were excluded from the item generation because relating to work choice instead of workplace, and because being contradictory, respectively. See Supplementary Material: Questionnaire S1.

individual differences in personality and predicting a variety of individual, interpersonal, and societal outcomes (John et al., 2008; Kajonius and Mac Giolla, 2017; Kajonius and Johnson, 2018; Soto, 2019; De Raad et al., 1998). The FFM was used to measure how individual stable characteristics might influence maternity care professionals' experiences in the context of this study (Kajonius and Mac Giolla, 2017; Kajonius and Johnson, 2018). The FFM describes five broad dimensions: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness, with each encompassing a range of behaviors and attitudes. Neuroticism is associated with emotional instability and includes traits like anxiety and pessimism. Individuals with high scores in neuroticism may experience mood swings and stress more frequently. Extraversion describes the quantity and intensity of interpersonal interaction, activity level, need for stimulation, and capacity for joy. Extraverts are often sociable and assertive. Openness captures one's level of creativity and curiosity. It includes a preference for variety, intellectual curiosity, and imaginative capacity. Agreeableness is indicative of interpersonal behavior. Traits like compassion, civility, and cooperativeness are characteristic of agreeable individuals. Conscientiousness involves social norms and task-related behaviors, leading to traits such as responsibility, persistence, and achievement-orientation. Additionally, the Honesty-Humility scale has been proposed as a sixth dimension, reporting good psychometric properties (Kajonius and Johnson, 2019; Ashton and Lee, 2005). It addresses elements of personality that involve the social fabric of community life, incorporating aspects such as sincerity, fairness, greed avoidance, and modesty. The rationale for including the Honesty-Humility dimension is to capture a moral domain of personality that the traditional five dimensions may overlook. The five personality dimensions of the FFM were assessed using a short 24-items version of a psychometric pool of items (Mini IPIP-6; See http://ipip.ori.org), with the addition of the Honesty-Humility dimension. A 1–5 Likert-scale was also used for the personality traits measurement. See Table 3 for reliability coefficients and sample distributions.

Finally, variables intended as controls were gender, age, as well as years of clinical experience, the number of labor inductions per shift, and medium-risk and high-risk patients per shift. See supplementary material S2 for the entire study questionnaire.

Statistical analyses

Welch's *t*-test was used for comparisons to ensure robustness in the analysis. Levene's test was conducted as an additional check and confirmed the presence of unequal variances ($P < 0.05$), thus reinforcing the decision for Welch's *t*-test over the Student's *t*-test. Reliability was assessed using both the more classic Cronbach's alpha and the increasingly used McDonald's omega. The relationships between aspects of maternity care work and other variables, including personality, were evaluated using Pearson's correlation analysis, controlling for gender and age. The following threshold values commonly used in psychological research were employed to evaluate the magnitude of a correlation: $r \geq 0.30$ indicate a strong correlation and $r \leq 0.20$ indicate a weak correlation (Gignac and Szodorai, 2016). A preliminary power calculation aimed at identifying effects larger than $r > 0.20$ ($\alpha = 0.01$, 75 % power) yielded a sample size of $N = 260$ (Browner et al., 2013). All statistical analyses were carried out using the open-source software *Jamovi, v. 2.3.21*.

Results

In order to test the aim of the present study, professionals' views on labor induction and work-related variables were assessed for respective sample and compared as described in Table 3. The Ob&Gyn sample and Midwives sample had 13.2 respectively 12.8 years of clinical experience on average. Obstetricians/gynecologists were significantly lower than midwives in NII ($d = 1.39$) and higher in JS ($d = -0.26$). No other for the study relevant differences between the samples were reported, including personality dimensions. Notably and particularly for the Ob&Gyn sample, women scored higher than men in Agreeableness ($d = 0.75$) and Conscientiousness ($d = 0.55$).

In the correlation analysis presented in Table 4, we observed some patterns. JS was negatively correlated with the NII ($r = -0.30$), suggesting a relationship between these variables. Additionally, JS showed negative correlations with trait Neuroticism ($r = -0.29$) and the number of High-risk patients per shift ($r = -0.19$), highlighting a potential trend where personal and workplace factors may intersect. Also interestingly, the volume of reported High-risk patients per shift was found to correlate negatively with the personality trait Honesty-Humility ($r = -0.29$). All reported correlations were significant at the $P < .001$ level unless otherwise noted. In conclusion, we also provide the disattenuated correlation estimates controlled for unreliability (MacDonald's Omega) in the upper half of the diagonal in Table 4.

Discussion

Main findings

The main finding of the present study suggests a very large gap between the views of midwives and obstetricians/gynecologists concerning the rise of labor inductions beyond term despite their generally beneficial effects on perinatal outcomes (Middleton et al., 2018), with midwives being much more negative. It is also interesting that NII correlated negatively with JS, even though no causality can be inferred. Speculatively, and without dismissing evidence that may contradict the prevailing view (Rydahl et al., 2019), this difference may stem from contrasting roles, responsibilities, and interactions with patients (Milton, 2001; Jansson, 2008; Hansson et al., 2021). For instance, midwives typically spend more time with patients and thus form a unique bond

Table 3
Descriptive characteristics of the study samples.

		M	Med	Mo	SD	Skewness	Kurtosis	Cronbach's α	McDonald's ω	Gender differences[a, b] (Cohen's d)	Differences between Ob&Gyn and Midwives samples[a](Cohen's d)
Aspects of maternity care work	Negative Induction Index (NII)	2.47	2.33	3.00	0.92	0.15	−0.65	.85	.86	NS	1.39
		3.70	3.67	4.00	0.86	−0.20	−0.53	.83	.84		
		3.04	3.00	3.00	1.08	−0.04	−0.71	.89	.90		
	Healthcare Crisis Experience (HCE)	3.78	3.75	4.00	0.60	−0.40	0.49	.80	.81	−0.45 (P = .011)	NS
		3.80	3.75	4.00	0.60	−0.46	1.08	.78	.79		
		3.79	3.75	4.00	0.60	−0.42	0.74	.79	.80		
	Job Satisfaction (JS)	3.59	3.60	3.60	0.66	−0.42	0.01	.77	.77	NS	−0.26 (P = .006)
		3.42	3.60	3.60	0.63	−0.49	−0.34	.73	.73		
		3.51	3.60	3.60	0.65	−0.42	0.14	.75	.76		
Personality	Neuroticism	2.51	2.50	2.25	0.74	0.25	−0.17	.71	.72	NS	NS
		2.62	2.50	2.50	0.69	0.21	0.11	.62	.64		
		2.56	2.50	2.25	0.72	0.22	−0.07	.67	.68		
	Extraversion	3.28	3.25	2.75	0.89	−0.05	−0.70	.83	.83	NS	NS
		3.30	3.25	3.25	0.79	0.12	−0.44	.72	.73		
		3.29	3.25	3.25	0.85	0.01	−0.58	.78	.79		
	Openness	3.91	4.00	3.25	0.68	−0.20	−0.95	.62	.63	NS	NS
		3.90	4.00	4.00	0.66	−0.55	0.28	.60	.62		
		3.90	4.00	4.00	0.67	−0.35	−0.43	.61	.62		
	Agreeableness	4.22	4.25	4.00	0.61	−0.94	0.90	.78	.78	0.75	NS
		4.26	4.25	4.25	0.53	0.33	−0.58	.57	.60		
		4.24	4.25	4.00	0.58	−0.74	0.53	.69	.70		
	Conscientiousnes	3.90	4.00	4.00	0.71	−0.42	−0.23	.70	.71	0.55 (P = .002)	NS
		3.97	4.00	4.00	0.68	0.62	0.24	.71	.71		
		3.93	4.00	4.00	0.70	−0.51	−0.05	.70	.71		
	Honesty-Humility	3.98	4.00	4.00	0.68	−0.64	0.14	.60	.60	NS	NS
		3.94	4.00	4.25	0.68	0.46	−0.04	.57	.60		
		3.96	4.00	4.00	0.68	−0.55	0.03	.57	.60		
Other variables	Age	44.3	42.0	37.0	10.3	0.67	−0.46	–	–	−0.53 (P = .003)	NS
		45.2	43.0	41.0	10.4	0.33	−0.80				
		44.7	42.0	37.0	10.4	0.51	−0.66				
	Clinical experience	13.2	10.0	4.0	10.3	0.87	−0.25	–	–	−0.66	NS
		12.8	10.0	6.0	9.94	0.77	−0.27				
		13.1	10.0	2.0	10.1	0.82	−0.26				
	Inductions	3.49	3.00	3.00	1.34	0.34	0.23	–	–	NS	NS
		3.29	3.00	3.00	1.37	1.19	3.07				
		3.40	3.00	3.00	1.35	0.73	1.38				
	Medium-risk patients	4.31	4.00	4.00	1.93	0.89	0.30	–	–	NS	NS
		4.35	4.00	4.00	1.74	0.62	0.07				
		4.33	4.00	4.00	1.84	0.78	0.22				
	High-risk patients	1.82	1.00	1.00	1.12	1.65	2.85	–	–	NS	NS
		1.68	1.00	1.00	0.93	2.01	5.97				
		1.76	1.00	1.00	1.04	1.81	3.97				

Note: a. Welch's t-test was used, Levene's test being significant ($P < .05$); all differences are significant on the $P < .001$ level, except when specified otherwise; b. There were only two men in the Midwives sample, gender differences were therefore not calculated. All variables were measured on a 1–5 Likert scale, except for *Age* and *Clinical experience* that were measured in years. The number of *Medium-* and *High-risk patients* were measured on a scale from 0 to 10. The three rows for each variable represent values for the Ob&Gyn (N = 240), Midwives (N = 207) and Ob&Gyn+Midwives (N = 447) samples respectively.

with them. This relationship may allow them to experience the effects of labor inductions on the women more directly and to a greater extent than physicians. It could be argued that the pressure to perform inductions not only conflicts with their professional ethos but also induces feelings of guilt. Such an inner conflict may possibly disrupt a self-image as patient advocates, thereby contributing to an overall decline in job satisfaction (Hansson et al., 2022). On the other hand, physicians, who typically spend less time with patients, may have a different perspective. As the profession entails, their focus is predominantly on diagnosing the need for an induction and prescribing the necessary treatment. Given their overall medical responsibility, physicians might often view labor induction as strictly reducing perinatal mortality rates (Clesse et al., 2018), and a medically instigated childbirth (Greene et al., 2001; Nasello et al., 2023). It is not the intention of this discussion to suggest that midwives' emotional responses to labor inductions should take precedence over evidence-based practices; instead, it underscores the importance of recognizing distinct professional experiences and the emotional work of midwives, in pursuit of a more integrated and empathetic approach to maternity care.

There is a potential risk that this divergence of views could accentuate an underlying conflict between midwives and physicians (Jansson, 2008). As physicians continue to uphold their responsibility and implement guidelines based on scientific evidence, midwives might sometimes feel that their voices are drowned out in the process. In alignment with more recent evidence on midwives' attitudes and job satisfaction levels (Hansson et al., 2022; Hansson et al., 2021), this study perhaps indicates a need to bridge the professional gap and include all perspectives.

Additionally, the present study showed that the professions did not differ regarding other work-related variables, including personality traits. It would perhaps be expected that the professions' experiences and personality traits differ more, maybe in turn influencing their views on labor inductions (Soto, 2019). However, it could be argued that a similar personality profile is necessary for working in an environment with specific common constraints such as maternity care, regardless of profession or patient-care approach (Matthews et al., 2009; Byrne et al., 2015; Witt et al., 2002). Illustrating this idea, a recently published study provided valuable insights into the unique personality profile of obstetricians and gynecologists (Raoust et al., 2023). Nevertheless, trait neuroticism showed a negative relationship to job satisfaction. This supports earlier evidence that individuals with higher negative sensitivity are more likely to evaluate their work environment more

Table 4
Correlations between aspects of maternity care.

y	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Negative Induction Index (NII)		−0.13	−0.34	0.14					−0.15	0.56	−0.14			0.12
2. Healthcare Crisis Experience (HCE)	−0.11 (*P* = .023)		0.19						−0.22				0.13	0.14
3. Job Satisfaction (JS)	−0.30	0.15 (*P* = .002)		−0.40			0.15		0.28	−0.14	0.18			−0.22
4. Neuroticism	0.11 (*P* = .030)		−0.29						−0.42					
5. Extraversion						0.37	0.38		−0.17				0.11	0.14
6. Openness					0.26		0.47							0.13
7. Agreeableness			−0.11 (*P* = .028)		0.28	0.31						0.12	0.13	0.14
8. Conscientiousness									−0.18		0.17			
9. Honesty-Humility	−0.12 (*P* = .012)	−0.15 (*P* = .002)	0.19	−0.27	−0.12 (*P* = .013)			−0.12 (*P* = .014)					0.14	−0.37
10. Profession	0.55		−0.12 (*P* = .011)								−0.15			
11. Clinical experience	−0.13 (*P* = .008)		0.16 (*P* = .002)					0.14 (*P* = .019)		−0.15 (*P* = .002)			0.51	0.41
12. Inductions							0.10 (*P* = .042)							0.34
13. Medium-risk patients		0.10 (*P* = .046)			0.10 (*P* = .039)		0.11 (*P* = .022)		−0.11 (*P* = .024)		0.51			
14. High-risk patients	0.11 (*P* = .032)	0.11 (*P* = .025)	−0.19		0.12 (*P* = .012)	0.10 (*P* = .044)	0.12 (*P* = .011)		−0.29		0.41	0.34		

Note: $N_{Ob\&Gyn+Midwives} = 447$. Above the diagonal are disattenuated correlations, controlled for unreliability (McDonald's ω). All correlations above 0.15 are significant on the $P < .001$ level, except when specified otherwise. Ob&Gyn = 0, Midwives = 1. Correlations are controlled for gender and age.

adversely (Rukh et al., 2020).

Limitations

There are several limitations to this study. Only an estimated proportion (11 %) of obstetricians/gynecologists responded to the questionnaire. Also, data on the exact number of midwives specifically working within maternity care was not accessible (Kompetensförsörjning, 2023). No midwife organization disclosed their membership numbers, citing competitive reasons. According to a recent report, there were 6100 midwives in the Swedish healthcare system as of 2020, indicating a response rate of only approximately 3.4 %. (Kompetensförsörjning, 2023). Additionally, the confidentiality required for the online surveys evaluating personality characteristics of employees restricted follow-up for both respondents and non-respondents. Also, based on previous study results, it is likely that a greater number of men would have lowered the levels of particularly neuroticism and agreeableness (Kajonius and Johnson, 2018; Roberts et al., 2006). Furthermore, it is likely that the respondents choosing to invest time in a questionnaire were characterized by higher openness, agreeableness, and conscientiousness, thus inflating scores by self-selection bias (Podsakoff et al., 2003).

Notably, the low reliability of certain measurements (Cronbach's alphas as low as 0.57 in some personality traits) disinhibits variance for the correlational analyses. Also, the three constructs of maternity care work aspects, NII, HCE, and JS, are untested and need further replication. However, no other tool has previously been constructed to investigate the perceived negative impact of inductions, and the tentative psychometric analyses were satisfactory (Supplementary Material S1) (Knekta et al., 2019). In addition, the items used for maternity care work aspects were created after interviews based on cumulated employee experience in obstetrics and gynecology. Further investigation and replication regarding the relationships of work-related factors to maternity care professionals' views on labor induction is warranted.

Conclusion

The findings suggest that labor inductions might present challenges to midwives' sense of professional identity and could potentially affect their rapport with birthing women. Given the relatively low response rate, these findings should be approached with caution, as they may not fully represent the breadth of experiences across the field. The study points to a notable discrepancy between midwives and physicians, which might indicate a greater need for considering a variety of professional perspectives in maternity care, particularly when introducing new guidelines nationwide. Further research is recommended to strengthen the validity of these preliminary observations.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used *ChatGPT 4.0* (https://www.openai.com/) in order to verify language and grammar. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

CRediT authorship contribution statement

Gabriel Raoust: Writing – review & editing, Writing – original draft, Software, Resources, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Stefan Rocco Hansson:** Writing

– review & editing, Supervision, Resources, Project administration. **Petri Kajonius:** Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Project administration, Methodology, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare no competing interests.

Acknowledgments

The authors express their gratitude to all obstetricians, gynecologists, and midwives who participated in the questionnaire. The authors want to extend their appreciation for all the relentless efforts that both professions demonstrate on a daily basis. The authors express their heartfelt gratitude to the Swedish Society for Obstetrics and Gynecology, the Swedish Association of Midwives, and the Swedish Association of Health Professionals for their support in making the questionnaire available to their members.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2024.103997.

References

Ashton, M., Lee, K., 2005. Honesty-humility, the big five, and the five-factor model. J. Pers. 73 (5), 1321–1353.
Browner, W.S., Newman, T.B., Hulley, S.B., Hulley, S.B., Cummings, S.R., Browner, W.S., Grady, D.G., Newman, T.B., 2013. Estimating sample size and power: applications and examples. Designing Clinical research. Wolters Kluver Health, 4th ed. Lippincott Williams & Wilkins, Philadelphia, PA, pp. 55–83.
Byrne, K.A., Silasi-Mansat, C.D., Worthy, D.A., 2015. Who chokes under pressure? The big five personality traits and decision-making under pressure. Pers. Individ. Differ. 74, 22–28.
Clesse, C., Lighezzolo-Alnot, J., de Lavergne, S., Hamlin, S., Scheffler, M., 2018. The evolution of birth medicalisation: a systematic review. Midwifery 66, 161–167.
Coates, R., Cupples, G., Scamell, A., McCourt, C., 2019. Women's experiences of induction of labour: qualitative systematic review and thematic synthesis. Midwifery 69, 17–28.
De Raad, B., Perugini, M., Hrebícková, M., Szarota, P., 1998. Lingua franca of personality: taxonomies and structures based on the psycholexical approach. J. Cross Cult. Psychol. 29 (1), 212–232.
Faragher, E.B., Cass, M., Cooper, C.L., 2005. The relationship between job satisfaction and health: a meta-analysis. Occup. Environ. Med. 62 (2), 105–112.
Gignac, G.E., Szodorai, E.T., 2016. Effect size guidelines for individual differences researchers. Pers. Individ. Differ. 102, 74–78.
Goncalves, L., Sala, R., Navarro, J.B., 2022. Resilience and occupational health of health care workers: a moderator analysis of organizational resilience and sociodemographic attributes. Int. Arch. Occup. Environ. Health 95 (1), 223–232.
Graviditetsregistret, 2021. [The Swedish Pregnancy Register is a Certified National Quality Register Initiated By the Swedish Healthcare. It collects and Processes Information All the Way from Early Pregnancy to a Few Months After Birth]. Available from: https://www.medscinet.com/gr/default.aspx.
Greene, J.D., Sommerville, B.R., Nystrom, L.E., Darley, J.M., Cohen, J.D., 2001. An fMRI investigation of emotional engagement in moral judgment. Science 293 (5537), 2105–2108.
Hansson, M., Lundgren, I., Hensing, G., Carlsson, I.M., 2019. Veiled midwifery in the baby factory - A grounded theory study. Women Birth 32 (1), 80–86.
Hansson, M., Lundgren, I., Hensing, G., Dencker, A., Eriksson, M., Carlsson, I.M., 2021. Professional courage to create a pathway within midwives' fields of work: a grounded theory study. BMC Health Serv. Res. 21 (1), 312.
Hansson, M., Dencker, A., Lundgren, I., Carlsson, I.M., Eriksson, M., Hensing, G., 2022. Job satisfaction in midwives and its association with organisational and psychosocial factors at work: a nation-wide, cross-sectional study. BMC Health Serv. Res. 22 (1), 436.
Healy, S., Humphreys, E., Kennedy, C., 2016. Midwives' and obstetricians' perceptions of risk and its impact on clinical practice and decision-making in labour: an integrative review. Women Birth 29 (2), 107–116.
Jansson, C., 2008. Maktfyllda Möten i Medicinska rum: debatt, Kunskap Och Praktik i Svensk Förlossningsvård 1960-1985. Sekel Bokförlag.
Johanson, R., Newburn, M., Macfarlane, A., 2002. Has the medicalisation of childbirth gone too far? BMJ 324, 892–895.
John, O.P., Naumann, L.P., Soto, C.J., John, O.P., Robins, R.W., Pervin, L.A., 2008. Paradigm shift to the integrative Big Five trait taxonomy: history, measurement, and conceptual issues. Handbook of personality: Theory and Research, 3rd ed. Guilford Press, New York, NY, pp. 114–158.
Kajonius, P.J., Johnson, J., 2018. Sex differences in 30 facets of the five factor model of personality in the large public (N = 320,128). Pers. Individ. Differ. 129, 126–130.
Kajonius, P.J., Johnson, J.A., 2019. Assessing the structure of the Five Factor Model of personality (IPIP-NEO-120) in the public domain. Eur. J. Psychol. 15 (2), 260–275.
Kajonius, P., Mac Giolla, E., 2017. Personality traits across countries: support for similarities rather than differences. PLoS One 12 (6), e0179646.
Knekta, E., Runyon, C., Eddy, S., 2019. One size doesn't fit all: using factor analysis to gather validity evidence when using surveys in your research. CBE Life Sci. Educ. 18 (1), rm1.
Kompetensförsörjning av Barnmorskor i hälso- och sjukvården Med Fokus på Förlossningsvården - Uppdrag att föreslå Insatser För Att Stärka Attraktiviteten Och Kompetensförsörjningen av Barnmorskor i Förlossningsvården, 2023. Nationella vårdkompetensrådet, Sweden. Report No.: S2022/00902.
Larsson, M., 2022. Kläda Blodig Skjorta: Svensk barnafödande Under 150 år. Natur & Kultur, Stockholm.
MacKenzie Bryers, H., van Teijlingen, E, 2010. Risk, theory, social and medical models: a critical analysis of the concept of risk in maternity care. Midwifery 26 (5), 488–496.
Maimburg, R.D., 2020. Induction of labour in earlier gestational weeks - Reflections on evidence and clinical practice. Sex. Reprod. Healthc. 23, 100487.
Matthews, G., Deary, I.J., Whiteman, M.C., Matthews, G., Deary, I.J., Whiteman, M.C., 2009. Personality, performance and information processing. Personality Traits, 3rd ed. Cambridge university press, Cambridge, UK, pp. 357–391.
Middleton, P., Shepherd, E., Crowther, C.A., 2018. Induction of labour for improving birth outcomes for women at or beyond term. Cochrane Database Syst. Rev. 5 (5), CD004945.
Milton, L., 2001. Midwives in the Folkhem: Professionalisation of Swedish midwifery During the Interwar and Postwar Period [Dissertation]. Uppsala University, Uppsala.
Montori, V.M., Devereaux, P.J., Adhikari, N.K., Burns, K.E., Eggert, C.H., Briel, M., et al., 2005. Randomized trials stopped early for benefit: a systematic review. JAMA 294 (17), 2203–2209.
Nasello, J.A., Dardenne, B., Blavier, A., Triffaux, J.M., 2023. Does empathy predict decision-making in everyday trolley-like problems? Curr. Psychol. 42, 2966–2979.
Nilver, H., Lundgren, I., Elden, H., Dencker, A, 2022. Women's lived experiences of induction of labour in late- and post-term pregnancy within the Swedish post-term induction study - a phenomenological study. Int. J. Qual. Stud. Health Well being 17 (1), 2056958.
Pocock, S., White, I., 1999. Trials stopped early: too good to be true? Lancet 353 (9157), 943–944.
Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P., 2003. Common method biases in behavioral research: a critical review of the literature and recommended remedies. J. Appl. Psychol. 88 (5), 879–903.
Raoust, G., Kajonius, P., Hansson, S., 2023. Personality traits and decision-making styles among obstetricians and gynecologists managing childbirth emergencies. Sci. Rep. 13 (1), 5607.
Reime, B., Klein, M.C., Kelly, A., Duxbury, N., Saxell, L., Liston, R., et al., 2004. Do maternity care provider groups have different attitudes towards birth? BJOG 111 (12), 1388–1393.
Roberts, B.W., Walton, K.E., Viechtbauer, W., 2006. Patterns of mean-level change in personality traits across the life course: a meta-analysis of longitudinal studies. Psychol. Bull. 132 (1), 1–25.
Rukh, G., Dang, J., Olivo, G., Ciuculete, D.M., Rask-Andersen, M., Schioth, H.B., 2020. Personality, lifestyle and job satisfaction: causal association between neuroticism and job satisfaction using Mendelian randomisation in the UK biobank cohort. Transl. Psychiatry 10 (1), 11.
Rydahl, E., Eriksen, L., Juhl, M., 2019. Effects of induction of labor prior to post-term in low-risk pregnancies: a systematic review. JBI Database Syst. Rev. Implement. Rep. 17 (2), 170–208.
Schuman, A.N., Marteau, T.M., 1993. Obstetricians' and midwives' contrasting perceptions of pregnancy. J. Reprod. Infant Psychol. 11 (2), 115–118.
Soto, C.J., 2019. How replicable are links between personality traits and consequential life outcomes? The life outcomes of personality replication project. Psychol. Sci. 30 (5), 711–727.
Statistik om graviditeter, 2022. Förlossningar Och Nyfödda Barn 2021. Socialstyrelsen, Sweden.. Report No.: 2022-12-8275.
Swedish Guidelines, 2021. Riktlinje för handläggning i graviditetsvecka 41. Nationellt system för kunskapsstyrning Hälso- och sjukvård - Sveriges regioner i samverkan. Sweden. https://www.nationelltklinisktkunskapsstod.se/globalassets/nkk/nationell/media/dokument/kunskapsstod/vardriktlinjer/riktlinje-for-handlaggning-i-graviditetsvecka-41.pdf.
Wennerholm, U.B., Saltvedt, S., Wessberg, A., Alkmark, M., Bergh, C., Wendel, S.B., et al., 2019. Induction of labour at 41 weeks versus expectant management and induction of labour at 42 weeks (Swedish post-term induction study, SWEPIS): multicentre, open label, randomised, superiority trial. BMJ 367, l6131.
Witt, L.A., Burke, L.A., Barrick, M.R., Mount, M.K., 2002. The interactive effects of conscientiousness and agreeableness on job performance. J. Appl. Psychol. 87 (1), 164–169.
WHO recommendations: Induction of Labour At Or Beyond Term, 2018. World Health Organization, Geneva. Report No.: CC BY-NC-SA 3.0 IGO.