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Attitudes of pregnant women and healthcare professionals to labour induction and obtaining consent for labour induction

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Abstract

Induction of labour is experienced by up to one third of women and can be a negative experience, in relation to both the decision about whether to have an induction of labour, and the experience of the process of induction of labour. This paper reviews the limited evidence of women's view on and experiences of: information provision; shared decision-making; preferences for method and location of induction of labour; indications for induction of labour; pain management; and effective communication and support. Healthcare professionals' views are reviewed but are underrepresented and further research is needed to understand experiences of gaining consent for induction of labour. Systematic review evidence is drawn on where possible but reviews often found small numbers of papers for inclusion, and provide insights rather than conclusive evidence. Future research would benefit from using validated measures to assess the experience of induction of labour.

Keywords: Labor induced; healthcare experience; shared decision-making; satisfaction; Maternal health services; cervical ripening

Introduction

The number of women who experience induction of labour (IoL) is between one quarter and one third internationally. In the United Kingdom (UK), rates of IoL rose to 33% in 2019-2020(1) and in the United States of America (USA) approximately one in four women are induced(2). Rates in low- and middle-income countries are variable, and sometimes are as high or higher than in high-income countries(3). The first stage of IoL usually involves administering a pharmacological (e.g. prostaglandins) or non-pharmacological (e.g. a balloon catheter) agent to soften the cervix ready for the onset of labour. The processes of IoL are uncomfortable for many women and can lead to further unwanted intervention (3, 4). The World Health Organization (WHO) recognises that a positive birth experience should be an expected outcome for women giving birth, and not simply an addition to having a healthy baby(5), yet the evidence base for women's views and preferences for induction of labour is very small in comparison to research about clinical outcomes of IoL. A key challenge is the lack of validated measures of induction of labour experience, which makes it difficult to compare experiences from different study designs, with different methods of IoL, and in different healthcare contexts. Measurement of IoL experience is considered in the first section of this paper. The second section considers quantitative and qualitative evidence of women's attitudes towards, and experiences of, making decisions about and consenting to induction of labour followed by women's experiences of the process of IoL. Finally, healthcare professionals' attitudes towards and experiences of IoL are considered.

Measurement of attitudes and experience of induction of labour

There is no core outcome set related to women's experiences of IoL. The quantitative study of women's experiences of IoL has been hindered by a lack of validated measures and the resultant use of measures developed within studies which have not been validated and /or which are not comparable with measures used in other studies. Quantitative systematic reviews that have included an aspect of women's experience have concluded that there is insufficient evidence about women's preferences for IoL methods or location, and that future research should focus on maternal satisfaction and experience (2, 6, 7). Quantitative measurement of women's attitudes towards and experience of

IoL has largely focused on 'satisfaction' with the childbirth experience and experience of pain. Psychosocial outcomes including depression and anxiety(8) and more recently specific measures of induction of labour experience(9, 10) have been employed less frequently.

Measures of satisfaction

Satisfaction is an elusive and inadequately-defined complex construct, which is often used as a proxy for service quality(11). Satisfaction is multidimensional and women can be satisfied with one aspect of their childbirth experience, and dissatisfied with another. An aggregated score of satisfaction with childbirth is therefore less useful when the purpose is to improve care or change policy because a single score can mask women's views on specific aspects of their care(12). This highlights the importance of attending to the specific characteristics of induction of labour when choosing a tool to measure attitudes towards or experience of IoL.

It is important to remember that whatever tool is used to measure women's experiences of IoL, it may not capture all aspects of that experience. For example, even in a large study in which (dis)satisfaction with IoL was the primary outcome(9), the organization of the maternity unit, and the individual relationship created between the woman and the healthcare professional were not measured, both of which are potentially related to satisfaction(13).

Measures of childbirth experience

Another approach is to use a global measure of childbirth experience rather than induction of labour experience *per se*. A thorough systematic review and evaluation of the psychometric properties of 36 measures of childbirth experience suggested the following tools had the highest scores indicating that they were valid and reliable(14): The Childbirth Experience Questionnaire (15); The Responsiveness in Perinatal and Obstetric Health Care Questionnaire (16, 17); Patient Perception Score (18); Pregnancy and maternity care patients experiences questionnaire (19); Childbirth Perception Scale (20); and the Wijma Delivery Expectancy / Experience Questionnaire (21). Finding the most suitable instrument for the purpose, setting and population requires consideration of multiple aspects of validity and reliability as well as practical factors such as ease of administration and time taken to

complete the questionnaire. Nonetheless, meaningful comparison of experiences of IoL will continue to be difficult if different measures and non-validated measures continue to be used.

Measurement of attitudes and experiences specific to induction of labour

Development and evaluation of validated tools to measure women's experiences of induction of labour are in their infancy. Use of such measures would enable comparison across studies and provide reassurance that study results are valid. A number of tools have been created in the last five years that are specific to the IoL experience that would benefit from evaluation. In the absence of a validated scale, Dupont et al. (9) created a measure of dissatisfaction with IoL based on literature review and in collaboration with maternity professionals and user representatives. Items relate to dissatisfaction with pain relief for uterine contractions, no consideration of women's requests, labour not being as expected, non-acceptable duration of labour, and delivery not as expected. Items are answered on a 5-point Likert scale from very satisfied to very dissatisfied. The measure also asks about vaginal discomfort (responses are: none, tolerable, unbearable), The authors grouped 'not really satisfied', 'dissatisfied', and 'very dissatisfied' together as 'dissatisfied' and the categories 'very satisfied' and 'satisfied' were defined as 'satisfied'(9).

The EXperiences of Induction Tool (EXIT) was created in 2017 for a randomized controlled trial comparing experience of cervical ripening using PGE2 gel versus early amniotomy (10). Literature review, maternity professional and service user feedback were used to devise items. EXIT includes eight self-report items with a 5-point agreement response scale. Initial validation was conducted by the authors and the scale includes three factors reflecting: time taken to give birth (two items); discomfort with induction of labour (four items); experience of subsequent contractions (two items). Initial assessment of psychometric properties indicates that this measure may be a useful tool to measure the IoL experience.

As these IoL measures are new, further psychometric testing would be beneficial. All measures require extensive validation of psychometric properties to ensure sufficient levels of validity and reliability. Without this, conclusions about data drawn from their use may be false, which may in turn lead to false conclusions about induction of labour more generally(14).

Timing and method of data collection

As well as differences in types of measurement used to assess attitudes towards induction of labour, the best time to collect accurate data also needs to be considered when interpreting the research available. There is no definitive answer to the question of when is best to collect data about women's experiences of birth. Data collected whilst women are in the hospital or birth facility may be subject to response- or social desirability bias, in which women respond in a way that they anticipate healthcare professionals would expect, particularly if data is being collected by maternity healthcare professionals, as it often is(22). When possible, data should be collected by independent researchers. Data may also be confounded by the strong positive emotions associated with childbirth (23). Waiting to collect data at a later stage may result in a lower response rate, as women are busy with their new baby, exclusion of harder-to-reach groups and recall related bias in which either more positive or more negative events are recalled(14) than at the time of IoL.

Quantitative data in the form of questionnaires are appealing as substantial amounts of data can be gathered and analyzed relatively easily and at reduced costs, and validated instruments can be used. Much of the research about women's experiences of induction of labour comes from randomised controlled trials (RCTs) which are subject to strict regulation. In RCTs, healthcare professionals are required to inform patients fully about their potential involvement, outlining potential risks and benefits. Given that feeling informed and taking part in decision-making are important factors in women's experience of IoL, higher levels of satisfaction may be reported from RCTs than in usual clinical care, or in cohort studies.

Qualitative measurement

Qualitative research in the form of in-depth interviews, focus groups or open-ended survey questions is important in order to elicit underlying reasons, motivations, opinions and experiences specific to the local context. Qualitative research has been conducted and systematically reviewed and synthesized in order to understand experiences of women who have undergone membrane sweeping to promote labour(24); inpatient and outpatient induction of labour(4), and post-term induction of labour(13, 25). There is no qualitative systematic review evidence of healthcare professionals' experiences of their involvement in induction of labour.

In summary, studies may vary widely in their results due to measures used and time at which data is collected, rather than as a true reflection of variation. A critical reading of what aspect of women's attitudes or experiences was measured, at what time, and by whom, is necessary. When developing patient reported outcome measures of induction of labour experience, it may be suitable to adapt existing measures of childbirth experience, in order to create new measures specific to IoL(14).

Women's attitudes towards induction of labour

There are some reports of positive attitudes towards induction of labour, although many studies report dissatisfaction, negative birth experiences, and disappointment in not having a spontaneous birth(26). Results from studies with large samples are mixed. A RCT of 508 women in Norway comparing expectant management with IoL found that at 41 weeks' gestation, 74% of women preferred to be induced, and of that group 74% said they would prefer to be induced in future pregnancy, whereas only 38% of women in the expectant management groups preferred the same method again(27). Another RCT of 656 women in Sweden compared IoL at 41 weeks with expectant management until 42 weeks, and found no significant differences between groups concerning their own capacity, perceived safety and professional support measured with the Childbirth Experience Questionnaire 2. In a survey of 689 self-selected women in Germany, 57% of women who had been induced by any method, would not choose IoL in another pregnancy if they had a choice(28), and in the UK a large survey comparing women who had an labour induction with those labouring spontaneously found that induced women were less satisfied with their care, and gave lower ratings for healthcare professional communication, respect and kindness(29). The differences in outcomes may reflect RCT versus cohort study design and findings may also be confounded by indication, as women who experience IoL often do so as a response to concerns about maternal and/or fetal well-being.

Views on alternatives to induction of labour

In low-risk pregnancies without a recognized indication for labour induction women may prefer to avoid induction of labour and try alternative methods to start labour spontaneously instead of or as well as medical induction. Non-clinical methods women may try include sexual intercourse, nipple stimulation, acupuncture and acupressure, raspberry leaf tea, physical activity, various foods and herbal preparations(30). Many of these approaches are likely to have no negative impact on the woman and her baby besides the known risk of prolonging pregnancy beyond a certain gestational age, although it is important to know that some herbal preparations have been associated with adverse effects, and there is no good quality evidence of safety (30, 31). Women do want to have discussions about alternatives to induction of labour(4, 25) and for the purposes of informing women about alternative methods, systematic reviews suggest that acupuncture and acupressure do not make a difference to the likelihood of medical IoL being required(32), but there is no review level evidence for other complementary therapies(33). Women may still choose complementary therapies as a means of coping with induction of labour(33).

Information provision

Many women seek information to ensure they have a level of knowledge about induction of labour, but understanding about why IoL takes place, risks associated with IoL and with prolonged pregnancy, alternatives to IoL, information about methods, time frame, and practical aspects such as whether a partner is allowed to remain with them are limited(4, 28, 34).

Dissatisfaction with induction of labour in nulliparous women has been associated with antenatal classes not discussing IoL(9), but there is insufficient evidence to determine when and by what method, information about IoL should be given to women. A systematic review of non-pharmacological interventions to support women experiencing IoL found only two eligible studies, one of which suggested that providing women with written information about IoL as they arrive for the procedure increased their knowledge about how the induction agent worked, timings, and side effects, however women had consented to IoL prior to receiving this information(35, 36). Women also need to be informed about each sequential step of the induction process, the possibility of further interventions and pain(4, 33). Good-quality, evidence-based decision aids are lacking and progress in

developing decision aids and patient information regarding options for women with post term pregnancies should be a priority(37, 38). In non-obstetric populations, evidence from systematic reviews suggests that written information plus verbal information improves understanding when compared with verbal information alone. Access to healthcare professionals, online and digital sources of information, materials that are easy to understand, convenient and patient-centred are recommended to facilitate informed decision-making (39). Antenatal education and counselling interventions that have been developed and evaluated in line with recognised health literacy principles could help to ensure that relevant information is accessible, understandable and allows women to act upon it (39).

Shared decision-making

A lack of participation in decision-making negatively impacts women's experiences of induction of labour(4, 25), and evidence shows that women do want support with the decisional process(28). Induction of labour as a non-decision was a key theme in qualitative systematic reviews, with women reporting that obstetricians and midwives determined whether and when IoL should take place(4, 25). The little available quantitative data suggests similar findings, for instance data from 2119 women in the Listening to Mothers Study in California study, indicated that one in six women who planned to have a vaginal birth felt pressured to have an IoL and those who reported feeling pressure were more highly educated, were at 40 or 41+ weeks gestation, had a pre-pregnancy weight body-mass index >30kg/m², or felt that birth should not be interfered with unless medically necessary(40). A further study of 189 women booked for IoL in Australia suggested one in five women report not having a choice about IoL(41). The decision may be perceived as not being shared because information about risks and benefits is incomplete, the discussion is rushed, or dialogue is minimal, because women's feelings are not considered, or due to lack of interprofessional collaboration (4, 42, 43). Women experiencing IoL, like patients in other contexts, may believe that "doctor knows best" and that medical expertise and experience is superior to their own contribution of personal preferences and circumstances, to the decision-making process(44).

Systematic review evidence of shared decision-making in healthcare settings suggests that personalised information tailored to each woman's needs is necessary but not sufficient to enable shared decision-making and that women need to be enabled to have a truly active role(44). Further facilitators healthcare professionals can modify to enable shared decision-making include(44):

1. Explicitly encouraging women to take part in shared decision-making.

2. Giving women time to consider their options.

3. Promoting the view that both the healthcare professional and the woman are experts in making the decision.

4. Promoting the acceptability of women asking questions.

5. Promoting an equal relationship between the healthcare professional and the woman.

6. Taking an individualised approach whereby healthcare professionals seek women's preferences.

7. Promoting the woman's responsibility to be involved in making decisions.

8. Listening to women's concerns.

9. Recognising uncertainty.

10. Providing sufficient information about options and outcomes.

11. Healthcare professional explaining the options and outcomes.

12. Using simple terminology.

13. Providing written decision support.

14. Enabling decision support from others e.g. family / other healthcare professionals.

Indications for induction of labour

Data reporting on women's attitudes to induction of labour in the presence and absence of specific indications is needed, as current evidence is sparse. It is likely that women undergoing IoL for a medical indication may have specific needs and may find the experience more stressful than IoL for a 'late or post-term' pregnancy, i.e. a pregnancy in which the only risk is increased gestational age (25). A qualitative systematic review(4) found one study that included views of participants who were induced due to established medical diagnosis(45). The most prominent feelings reported by women in this study were acceptance, resignation, pain, fear and dissatisfaction. A recent cross-sectional survey

of 100 women in their third trimester of pregnancy suggested that whilst >95% of women were supportive of IoL for maternal or foetal indications before their estimated due date, only 46% of women were interested in IoL at this time in the absence of maternal and foetal indications(46). Women who were opposed to induction of labour in the absence of a medical indication were almost four times more likely to be concerned that IoL could harm their baby. Women may also be concerned about induction of labour specifically because labour will no longer be spontaneous, and because of the likelihood of further intervention(4). However, any concerns that women have about the experience of IoL are likely to be outweighed by concerns for the safety of the baby(4). This makes it particularly important for healthcare professionals to explain risks and benefits in a way that is meaningful to women.

Women's experiences of and attitudes towards the process of induction of labour

Timeliness of induction of labour

The time taken from IoL to birth is frequently a concern to women. Qualitative systematic review evidence and quantitative studies indicate that women are surprised at the length of time that IoL takes, with over one quarter of women in one prospective study expecting to deliver within 12 hours of receiving the induction agent, and 40% of women stating that the most important aspect they would change about IoL would be the speed of it. Conversely women may be surprised when the process is quicker, having been prepared for a longer labour(4). A retrospective cohort of 1453 women found that labour longer than 24 hours was the strongest indicator of dissatisfaction with labour for multiparous but not nulliparous women, which indicates the importance of not generalising about the duration of labour and therefore facilitating expectations that may not be met(9).

Method of induction of labour

Evidence suggests that there is no clear preferred method for starting the induction process and experience of the method is likely to be impacted by other factors such as the relationship with healthcare professionals, and the location of IoL i.e. inpatient or outpatient. In RCTs comparing inpatient prostaglandin pessary with inpatient balloon catheter, and inpatient prostaglandin with

outpatient balloon catheter, women reported more pain on insertion of a double balloon catheter than a single balloon or pessary(47, 48); similar pain on insertion of double balloon or pessary (49); more pain from the prostaglandin pessary during the induction process or at the time of rupture of membranes than from the balloon catheter(47-49); and no differences in feeling 'bothered' by repeated swallowing of oral misoprostol tablets or placement of balloon catheter(50). The way in which pain was measured differed between studies meaning direct comparison is not possible. Levels of satisfaction with overall care are similar. The largest RCT to compare inpatient prostaglandin with outpatient balloon catheter used the validated EXIT tool and found no statistically significant differences in women's experiences of duration of labour, feeling of safety, desire for support at the start of the induction process, or in convenience of the method(48). Qualitative research corroborates this evidence, suggesting that insertion of a balloon catheter is painful to women, but that once in place the pain lessens(51).

Pain and pain management

Women may experience increased pain when undergoing induction of labour(4, 27) and healthcare professionals should discuss with women how an IoL may affect their experiences and perceptions of pain(33). Women who have a less painful birth are not necessarily more satisfied with their birth experience however and the influence of personal expectations, amount of support from caregivers, the quality of the caregiver-patient relationship and involvement in decision-making are likely to be greater(22). There is no review-level evidence about women's experiences of pain related to different cervical ripening methods. Studies suggest that despite increased pain (at least at insertion), women were more likely to recommend a balloon catheter than hormonal methods(48, 50, 51), whilst one study found women equally likely to recommend these methods(49).

Location of induction

A small body of research has considered women's preferences for inpatient versus outpatient induction of labour. Qualitative evidence suggests that women value the ability to continue with their daily activities, get comfortable, eat, sleep, move, and bathe at home, occupy themselves, receive

support from and be with friends and family, and cope with contractions at home(4). The hospital was viewed as a place of safety but of noise and delays(4, 51). A quantitative systematic review of inpatient versus outpatient induction of labour outcomes (52) found only one study which measured maternal preferences for inclusion, which compared outpatient balloon catheter with inpatient prostaglandin E2 gel(53). In this study outpatients experienced less discomfort, a better ability to cope with discomfort, less concern that the method was unsafe, a greater ability to relax and a higher likelihood of choosing the same method in a later pregnancy(53). A systematic review of studies comparing different methods in the outpatient context concluded that there was very little information about what methods and locations women prefer(6). One study which used validated measures to assess anxiety and depression scores between women who experienced outpatient (as opposed to inpatient) cervical priming found no statistically significant or clinically relevant differences seven weeks after birth (8).

Effective communication and support

When communication between healthcare professionals and women experiencing induction of labour is ineffective, women can feel anonymous and isolated. Examples of ineffective communication during the induction process include women not being listened to, feeling that their experience of pain or progression of their labour is dismissed, a feeling of not being believed, or of not being informed about what is taking place(4).

In the absence of an established definition of effective communication, WHO recommended that at a minimum effective communication between maternity care professionals and women should involve(54):

Introducing themselves to the woman and her companion and addressing the woman by her name.
 Offering the woman and her family the information they need in a clear and concise manner (in the language spoken by the woman and her family), avoiding medical jargon, and using pictorial and graphic materials when needed to communicate processes or procedures.

3. Respecting and responding to the woman's needs, preferences and questions with a positive Attitude.

4. Supporting the woman's emotional needs with empathy and compassion, through encouragement, praise, reassurance and active listening.

5. Supporting the woman to understand that she has a choice, and ensuring that her choices are supported.

6. Ensuring that procedures are explained to the woman, and that verbal and, when appropriate, written informed consent for pelvic examinations and other procedures is obtained from the woman.

7. Encouraging the woman to express her needs and preferences, and regularly updating her and her family about what is happening, and asking if they have any questions.

8. Ensuring that privacy and confidentiality is maintained at all times.

9. Ensuring that the woman is aware of available mechanisms for addressing complaints.

10. Interacting with the woman's companion of choice to provide clear explanations on how the woman can be well supported during labour and childbirth.

Support, from both healthcare professionals and partners or family is important to women experiencing induction of labour. A woman's relationship with her healthcare professional can help to compensate for the women's perceived negativity at undergoing IoL. Support from healthcare professionals to help women feel prepared, comfortable, and to make decisions are valued(4). Having a partner present facilitates feelings of safety and security, whilst absence of a partner can lead to feelings of anxiety, fear and isolation(4). WHO recommends that a companion of choice should be available for all women throughout labour and childbirth(54). This recommendation was disregarded as it was considered unsafe in some healthcare systems to have a partner in the birth setting during the COVID-19 pandemic, but has been criticised for potential negative impacts of making women endure labour and birth alone.

Healthcare professionals' experiences of and attitudes towards induction of labour

Risk and decision-making

Research considering the attitudes and experiences of healthcare professionals towards induction of labour is even more sparse than research related to women's experiences. One recent systematic

review considered factors that influence decision-making from healthcare professionals' perspectives which included five studies (26). Differences in decision-making for induction of labour in Australia were considered to be due the obstetrician's perception of risk in the pregnancy which was in turn influenced by their personality and knowledge, their care relationship with the woman, how they involved the woman in decision-making and resource availability. Obstetricians were primarily concerned with reducing perinatal mortality and viewed induction of labour as a way to control this risk(55). Further systematic reviews of midwives' and obstetricians' perceptions of risk and of supporting women who make decisions about their birth which fall outside clinical guidelines concluded that birth takes place in an increasingly risk-averse context in which (unnecessary) interventions protect healthcare professionals from litigation (56, 57). Midwives and obstetricians can be reluctant to share the process of decision making with women, fearing consequences of adverse outcomes of a women's decisions, which may be expected when the healthcare professional remains accountable, but which suggests a need to redress the power imbalance between women and healthcare professionals if women are to be truly involved in their care(56, 57). Although a womancentred approach is advocated, in which a positive birth experience is considered an important outcome, the lack of shared decision-making experienced both by women and healthcare professionals suggests a guideline-driven model in which deviation from local guidelines overrule the needs of individuals in favour of the needs of the organization(57, 58).

Attitudes toward indications for induction of labour

Obstetricians' attitudes towards specific indications for IoL vary widely. A study of maternity units in France suggested obstetricians both within and between maternity units had widely varying views on IoL for breech presentation, previous caesarean birth, foetal growth restriction or macrosomia and prelabour rupture of membranes(59). Similarly in Australia and New Zealand, obstetric medical staff varied widely in whether they considered conception using assisted reproductive techniques, dietcontrolled gestational diabetes, maternal request, history of precipitate labour, and IoL at 39 weeks as valid indications for IoL(60, 61). Obstetricians, residents and midwives in the Netherlands showed agreement that preeclampsia and post-term pregnancy were the most important factors when deciding whether to induce labour. Concerning maternal age, one study of registered obstetricians in the UK indicated that a substantial number considered maternal age a valid indication for induction of labour and almost half indicated their willingness to participate in a trial to test the efficacy of IoL for nulliparous women over 35 years old(62).

Impact on clinical working practice

The impact on the working practices of midwives and obstetricians from carrying out labour inductions has received little attention. As the indications for induction of labour continue to increase, the impact on healthcare professionals becomes increasingly relevant. Impacts on stress, workload, new obligations and responsibilities for midwives in a service introducing outpatient induction of labour found no negative impacts on midwives' autonomy, job satisfaction and work demands(63). Further studies on the working practices of healthcare professionals involved in induction of labour would be beneficial.

Summary

WHO recommends that women's experiences of their care should have parity with the provision of clinical care(5), and this paper has highlighted that progress needs to be made with understanding and improving the experience of induction of labour. Provision of good quality information in an accessible format and with time for consideration would enable women to feel better prepared for shared decision-making. Women need to be informed about why induction of labour takes place, risks associated with IoL and with prolonged pregnancy, alternatives to IoL, information about methods, time frame, and practical aspects such as whether a partner is allowed to remain with them, methods of IoL, sequential steps of the induction process, the possibility of further interventions and pain. Information alone will not improve women's experiences, but once women are informed, shared decision-making can then be facilitated by healthcare professionals. There is insufficient evidence about women's preferences for induction of labour methods or location. Healthcare professionals' views are also missing from the research, and the small evidence base currently highlights varying

views about valid indications for induction of labour. Given that up to one third of women currently experience induction of labour, research considering decision-making about, and the process of going through, IoL should be a priority. Many of the studies included in this review predate more recent practice guidelines which suggest advantages of elective induction at 39 weeks(64) and therefore further research should focus on the impact that this might have on women's attitudes towards induction of labour. Future induction of labour research should incorporate valid measurement of experience of IoL.

Practice points

The following non-clinical aspects of labour and birth are potentially inexpensive to implement and are critical to the experience of care during any necessary clinical interventions (54), and specifically during induction of labour (33):

- Women should be informed that induction of labour is a series of procedures rather than a standalone procedure
- The implications of each step of the series of procedures should be explained to women
- Healthcare professionals should ask women about their needs during the process of induction
- Women should be informed about local facilities and induction settings
- Access to spaces to mobilise, birthing balls, water immersion, peaceful settings to rest and sleep and access to food and drink should be provided
- Care should maintain women's dignity, privacy and confidentiality
- Care should ensure freedom from harm and mistreatment
- Women should be enabled to make an informed choice about their care
- Women should have continuous support during labour and childbirth
- There should be effective communication between maternity professionals and women in labour using simple and culturally acceptable methods

• Women should have a companion of choice with them throughout labour and birth

Research agenda

- Development and validation of measures of women's experience of induction of labour.
- Specific support needs for women undergoing induction of labour and development of interventions to address these needs.
- Development of information about induction of labour for antenatal women which is accessible, understandable and which can be acted on by women.
- Attitudes of healthcare professionals to methods, location, indications, workload and resource implications of induction of labour.
- Attitudes of healthcare professionals and pregnant women to elective induction of labour at 39 weeks of pregnancy.
- Qualitative research embedded within all RCTs of induction of labour to provide views on the perception of risks, benefits and experiences in each arm.
- All studies of induction of labour should consider evaluating the preferences, attitudes and experiences of both healthcare professionals and pregnant women and their partners.

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Conflict of interest statement

Conflicts of interest: none.

References

1. NHS Digital. NHS Maternity Statistics, England 2019-2020 2020 [Available from: https://digital.nhs.uk/data-and-information/publications/statistical/nhs-maternity-statistics/2019-20/deliveries---time-series.

de Vaan MD, Ten Eikelder ML, Jozwiak M, Palmer KR, Davies-Tuck M,
 Bloemenkamp KW, et al. Mechanical methods for induction of labour. Cochrane Database
 Syst Rev. 2019;10:CD001233.

3. *WHO recommendations: induction of labour at or beyond term. Geneva; 2018.

4. *Coates R, Cupples G, Scamell A, McCourt C. Women's experiences of induction of labour: Qualitative systematic review and thematic synthesis. Midwifery. 2019;69:17-28.

5. Tuncalp, Were WM, MacLennan C, Oladapo OT, Gulmezoglu AM, Bahl R, et al. Quality of care for pregnant women and newborns-the WHO vision. BJOG.

2015;122(8):1045-9.

6. Vogel JP, Osoti AO, Kelly AJ, Livio S, Norman JE, Alfirevic Z. Pharmacological and mechanical interventions for labour induction in outpatient settings. Cochrane Database Syst Rev. 2017;9:CD007701.

Alfirevic Z, Gyte GM, Nogueira Pileggi V, Plachcinski R, Osoti AO, Finucane EM.
 Home versus inpatient induction of labour for improving birth outcomes. Cochrane Database
 Syst Rev. 2020;8:CD007372.

8. Turnbull D, Adelson P, Oster C, Bryce R, Fereday J, Wilkinson C. Psychosocial outcomes of a randomized controlled trial of outpatient cervical priming for induction of labor. Birth. 2013;40(2):75-80.

9. Dupont C, Blanc-Petitjean P, Cortet M, Gaucher L, Salome M, Carbonne B, et al. Dissatisfaction of women with induction of labour according to parity: Results of a population-based cohort study. Midwifery. 2020;84:102663. *Beckmann M, Thompson R, Miller Y, Prosser SJ, Flenady V, Kumar S. Measuring women's experience of induction of labor using prostaglandin vaginal gel. Eur J Obstet
 Gynecol Reprod Biol. 2017;210:189-95.

11. Boquiren VM, Hack TF, Beaver K, Williamson S. What do measures of patient satisfaction with the doctor tell us? Patient Educ Couns. 2015.

12. Brown S, Lumley J. The 1993 Survey of Recent Mothers: issues in survey design, analysis and influencing policy. Int J Qual Health Care. 1997;9(4):265-75.

13. Akuamoah-Boateng J, Spencer R. Woman-centered care: Women's experiences and perceptions of induction of labor for uncomplicated post-term pregnancy: A systematic review of qualitative evidence. Midwifery. 2018;67:46-56.

14. *Nilver H, Begley C, Berg M. Measuring women's childbirth experiences: a systematic review for identification and analysis of validated instruments. BMC Pregnancy Childbirth. 2017;17(1):203.

 Dencker A, Taft C, Bergqvist L, Lilja H, Berg M. Childbirth experience questionnaire (CEQ): development and evaluation of a multidimensional instrument. BMC Pregnancy Childbirth. 2010;10:81.

16. Scheerhagen M, van Stel HF, Birnie E, Franx A, Bonsel GJ. Measuring client experiences in maternity care under change: development of a questionnaire based on the WHO Responsiveness model. PLoS One. 2015;10(2):e0117031.

17. van der Kooy J, Valentine NB, Birnie E, Vujkovic M, de Graaf JP, Denktas S, et al. Validity of a questionnaire measuring the world health organization concept of health system responsiveness with respect to perinatal services in the Dutch obstetric care system. BMC Health Serv Res. 2014;14:622.

18. Siassakos D, Clark J, Sibanda T, Attilakos G, Jefferys A, Cullen L, et al. A simple tool to measure patient perceptions of operative birth. BJOG. 2009;116(13):1755-61.

19. Sjetne IS, Iversen HH, Kjollesdal JG. A questionnaire to measure women's experiences with pregnancy, birth and postnatal care: instrument development and assessment following a national survey in Norway. BMC Pregnancy Childbirth. 2015;15:182.

20. Truijens SE, Wijnen HA, Pommer AM, Oei SG, Pop VJ. Development of the Childbirth Perception Scale (CPS): perception of delivery and the first postpartum week. Arch Womens Ment Health. 2014;17(5):411-21.

21. Wijma K, Wijma B, Zar M. Psychometric aspects of the W-DEQ; a new questionnaire for the measurement of fear of childbirth. J Psychosom Obstet Gynaecol. 1998;19(2):84-97.

22. Hodnett ED. Pain and women's satisfaction with the experience of childbirth: a systematic review. Am J Obstet Gynecol. 2002;186(5 Suppl Nature):S160-72.

23. Sando D, Abuya T, Asefa A, Banks KP, Freedman LP, Kujawski S, et al. Methods used in prevalence studies of disrespect and abuse during facility based childbirth: lessons learned. Reprod Health. 2017;14(1):127.

24. *Roberts J, Evans K, Spiby H, Evans C, Pallotti P, Eldridge J. Women's information needs, decision-making and experiences of membrane sweeping to promote spontaneous labour. Midwifery. 2020;83:102626.

25. *Lou S, Hvidman L, Uldbjerg N, Neumann L, Jensen TF, Haben JG, et al. Women's experiences of postterm induction of labor: A systematic review of qualitative studies. Birth. 2019;46(3):400-10.

26. Coates D, Goodfellow A, Sinclair L. Induction of labour: Experiences of care and decision-making of women and clinicians. Women Birth. 2020;33(1):e1-e14.

27. Heimstad R, Romundstad PR, Hyett J, Mattsson LA, Salvesen KA. Women's experiences and attitudes towards expectant management and induction of labor for post-term pregnancy. Acta Obstet Gynecol Scand. 2007;86(8):950-6.

28. Schwarz C, Gross MM, Heusser P, Berger B. Women's perceptions of induction of labour outcomes: Results of an online-survey in Germany. Midwifery. 2016;35:3-10.

29. Henderson J, Redshaw M. Women's experience of induction of labor: a mixed methods study. Acta Obstet Gynecol Scand. 2013;92(10):1159-67.

Hundley V, Downe S, Buckley SJ. The initiation of labour at term gestation:
 Physiology and practice implications. Best Practice & Research Clinical Obstetrics &
 Gynaecology. 2020;67:4-18.

31. Zamawe C, King C, Jennings HM, Mandiwa C, Fottrell E. Effectiveness and safety of herbal medicines for induction of labour: a systematic review and meta-analysis. BMJ Open. 2018;8(10):e022499.

32. Smith CA, Armour M, Dahlen HG. Acupuncture or acupressure for induction of labour. Cochrane Database Syst Rev. 2017;10:CD002962.

33. *Royal College of Midwives. Midwifery care for Induction of Labour. London: RoyalCollege of Midwives; 2019 Sept. Report No.: 2.

34. Shetty A, Burt R, Rice P, Templeton A. Women's perceptions, expectations and satisfaction with induced labour--a questionnaire-based study. Eur J Obstet Gynecol Reprod Biol. 2005;123(1):56-61.

35. Cooper M, Warland J. Improving women's knowledge of prostaglandin induction of labour through the use of information brochures: a quasi-experimental study. Women Birth. 2011;24(4):156-64.

36. Evans K, Sands G, Spiby H, Evans C, Pallotti P, Eldridge J. A systematic review of supportive interventions to promote women's comfort and well-being during induction of labour. J Adv Nurs. 2021;77(5):2185-96.

37. *Berger B, Schwarz C, Heusser P. Watchful waiting or induction of labour--a matter of informed choice: identification, analysis and critical appraisal of decision aids and patient

information regarding care options for women with uncomplicated singleton late and post term pregnancies: a review. BMC Complement Altern Med. 2015;15:143.

38. Clausen JA, Juhl M, Rydahl E. Quality assessment of patient leaflets on misoprostolinduced labour: does written information adhere to international standards for patient involvement and informed consent? BMJ Open. 2016;6(5):e011333.

39. Vamos CA, Merrell L, Detman L, Louis J, Daley E. Exploring Women's Experiences in Accessing, Understanding, Appraising, and Applying Health Information During Pregnancy. J Midwifery Womens Health. 2019;64(4):472-80.

40. Declercq E, Belanoff C, Iverson R. Maternal perceptions of the experience of attempted labor induction and medically elective inductions: analysis of survey results from listening to mothers in California. BMC Pregnancy Childbirth. 2020;20(1):458.

41. Coates D, Donnolley N, Foureur M, Henry A. Women's experiences of decisionmaking and attitudes in relation to induction of labour: A survey study. Women Birth. 2021;34(2):e170-e7.

42. Coates D, Thirukumar P, Henry A. The experiences of shared decision-making of women who had an induction of labour. Patient Educ Couns. 2021;104(3):489-95.

43. Molenaar J, Korstjens I, Hendrix M, de Vries R, Nieuwenhuijze M. Needs of parents and professionals to improve shared decision-making in interprofessional maternity care practice: A qualitative study. Birth. 2018;45(3):245-54.

44. *Joseph-Williams N, Elwyn G, Edwards A. Knowledge is not power for patients: a systematic review and thematic synthesis of patient-reported barriers and facilitators to shared decision making. Patient Educ Couns. 2014;94(3):291-309.

45. da Silva Lima BC RM, Martins ER, de Almeida Ramos RC, Francisco MT, de Lima DV. Feelings amongst high-risk pregnant women during induction of labor: a descriptive study. Online Brazilian Journal of Nursing. 2016;15:254-64.

46. Gallagher PJ, Liveright E, Mercier RJ. Patients' perspectives regarding induction of labor in the absence of maternal and fetal indications: are our patients ready for the ARRIVE trial? Am J Obstet Gynecol MFM. 2020;2(2):100086.

47. Pennell CE, Henderson JJ, O'Neill MJ, McChlery S, Doherty DA, Dickinson JE. Induction of labour in nulliparous women with an unfavourable cervix: a randomised controlled trial comparing double and single balloon catheters and PGE2 gel. BJOG. 2009;116(11):1443-52.

48. Beckmann M, Acreman M, Schmidt E, Merollini KMD, Miller Y. Women's experience of induction of labor using PGE2 as an inpatient versus balloon catheter as an outpatient. Eur J Obstet Gynecol Reprod Biol. 2020;249:1-6.

49. Lim SE, Tan TL, Ng GYH, Tagore S, Kyaw EEP, Yeo GSH. Patient satisfaction with the cervical ripening balloon as a method for induction of labour: a randomised controlled trial. Singapore Med J. 2018;59(8):419-24.

50. Kehl S, Welzel G, Ehard A, Berlit S, Spaich S, Siemer J, et al. Women's acceptance of a double-balloon device as an additional method for inducing labour. Eur J Obstet Gynecol Reprod Biol. 2013;168(1):30-5.

51. Coates R, Cupples G, Scamell A, McCourt C, Bhide A. Women's experiences of outpatient induction of labour with double balloon catheter or prostaglandin pessary: A qualitative study. Women Birth. 2020.

52. Dong S, Khan M, Hashimi F, Chamy C, D'Souza R. Inpatient versus outpatient induction of labour: a systematic review and meta-analysis. BMC Pregnancy Childbirth. 2020;20(1):382.

53. Henry A, Madan A, Reid R, Tracy SK, Austin K, Welsh A, et al. Outpatient Foley catheter versus inpatient prostaglandin E2 gel for induction of labour: a randomised trial.
BMC Pregnancy Childbirth. 2013;13:25.

54. *WHO recommendations: Intrapartum care for a positive childbirth experience.WHO Guidelines Approved by the Guidelines Review Committee. Geneva2018.

55. Nippita TA, Porter M, Seeho SK, Morris JM, Roberts CL. Variation in clinical decision-making for induction of labour: a qualitative study. BMC Pregnancy Childbirth. 2017;17(1):317.

56. Healy S, Humphreys E, Kennedy C. Midwives' and obstetricians' perceptions of risk and its impact on clinical practice and decision-making in labour: An integrative review. Women Birth. 2016;29(2):107-16.

57. Feeley C, Thomson G, Downe S. Caring for women making unconventional birth choices: A meta-ethnography exploring the views, attitudes, and experiences of midwives. Midwifery. 2019;72:50-9.

Kotaska A. Informed consent and refusal in obstetrics: A practical ethical guide.
 Birth. 2017;44(3):195-9.

59. Blanc-Petitjean P, Salome M, Dupont C, Crenn-Hebert C, Gaudineau A, Perrotte F, et al. Labour induction practices in France: A population-based declarative survey in 94 maternity units. J Gynecol Obstet Hum Reprod. 2018;47(2):57-62.

60. Coates D, Donnolley N, Foureur M, Spear V, Henry A. Exploring unwarranted clinical variation: The attitudes of midwives and obstetric medical staff regarding induction of labour and planned caesarean section. Women Birth. 2020.

61. Davis G, Waldman B, Phipps H, Hyett J, de Vries B. A survey of obstetricians' attitudes to induction of labour at 39 weeks gestation with the intention of reducing caesarean section rates. Aust N Z J Obstet Gynaecol. 2021;61(1):94-9.

62. Walker KF BG, Macpherson M, Thornton J. Induction of labour at term for women over 35 years old: a survey of the views of women and obstetricians. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2012;162:144-8. 63. Turnbull D, Adelson P, Oster C, Coffey J, Coomblas J, Bryce R, et al. The impact of outpatient priming for induction of labour on midwives' work demand, work autonomy and satisfaction. Women Birth. 2013;26(3):207-12.

64. American College of Obstetricians and Gynecologists. Practice advisory: Clinical guidance for integration of the findings of the ARRIVE trial: Labor induction versus expectant management in low-risk nulliparous women.; 2018.

Practice points

The following non-clinical aspects of labour and birth are potentially inexpensive to implement and are critical to the experience of care during any necessary clinical interventions (54), and specifically during induction of labour (33):

- Women should be informed that induction of labour is a series of procedures rather than a standalone procedure
- The implications of each step of the series of procedures should be explained to women
- Healthcare professionals should ask women about their needs during the process of induction
- Women should be informed about local facilities and induction settings
- Access to spaces to mobilise, birthing balls, water immersion, peaceful settings to rest and sleep and access to food and drink should be provided
- Care should maintain women's dignity, privacy and confidentiality
- Care should ensure freedom from harm and mistreatment
- Women should be enabled to make an informed choice about their care
- Women should have continuous support during labour and childbirth
- There should be effective communication between maternity professionals and women in labour using simple and culturally acceptable methods
- Women should have a companion of choice with them throughout labour and birth

Research agenda

- Development and validation of measures of women's experience of induction of labour.
- Specific support needs for women undergoing induction of labour and development of interventions to address these needs.
- Development of information about induction of labour for antenatal women which is accessible, understandable and which can be acted on by women.
- Attitudes of healthcare professionals to methods, location, indications, workload and resource implications of induction of labour.
- Attitudes of healthcare professionals and pregnant women to elective induction of labour at 39 weeks of pregnancy.
- Qualitative research embedded within all RCTs of induction of labour to provide views on the perception of risks, benefits and experiences in each arm.
- All studies of induction of labour should consider evaluating the preferences, attitudes and experiences of both healthcare professionals and pregnant women and their partners.