



INTIMACY AND PRIVACY DURING CHILDBIRTH. A PILOT-STUDY TESTING A NEW SELF-DEVELOPED QUESTIONNAIRE: THE CHILDBIRTH INTIMACY AND PRIVACY SCALE (CIPS)

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Summary

Introduction. Based on the findings of academic literature, evidence has found that physical and social environment play an inherent role in the birthing procedure. Birth is a natural process, with a specific sequence of hormonal changes and communication between mother and baby. Environmental stress, through a surge of adrenaline, can hinder the unfolding of the special physiological responses, and as a consequence of the contractions becoming less strong and frequent, the birthing process can stop. For this reason, privacy and intimacy are of special importance around the labouring mother.

Aim. The aim of our study was to explore what role privacy and intimacy play during labour and delivery. Furthermore, we aimed to discover whether perceived stress is related to privacy and intimacy experienced by mothers.

Material and methods. The newly created Childbirth Intimacy and Privacy Scale (CIPS) is introduced to measure physical and social privacy, safety and some other features which proved to be important during the birthing process keeping it on the physiological level. Additionally, we assessed stress experienced during birth with the shortened version of the Perceived Stress Scale (PSS).

Results. PSS and CIPS measures showed satisfactory internal consistency, data came from a normal distribution and items were strongly intercorrelated. Significant differences were found in PSS regarding education, marital status and socio-economic status (SES). Mothers with single marital status and low SES reported significantly higher perceived stress. Out of all CIPS items, mothers indicated high levels of privacy in features regarding no photos being taken, continuity of care throughout labour and delivery, patience and security provided by birth attendants and a lack of embarrassment in their presence. No significant differences were found when testing the mean value of the total score by using ANOVA; however, intimacy and privacy seemed to be slightly higher among mothers over 30 years old, having at least a third child, married, with lower qualifications and higher SES.

Conclusions. CIPS has proven to be an adequate measuring tool for assessing intimacy and privacy experienced by mothers during the birthing procedure. When privacy was rated high on the scale mothers perceived less stress and when rated low they experienced higher levels of stress. Therefore, if mother-focused care is the goal, caregivers should create and foster an atmosphere where intimacy and privacy are present, making a more satisfying birth possible with less interventions needed.

Key words: childbirth, intimacy, privacy, perceived stress, physiological birth

INTRODUCTION

At the turn of the millennium, new methods were introduced in technology to minimise the risks of complicated pregnancy and birth, which alleviated the pains and troubles of the mothers and of their babies. At the same time, we can witness the use of technology in uncomplicated births as well. This means that induction of labour, continuous electronic monitoring, the use of synthetic oxytocin, routine application of intravenous lines

and epidurals are becoming the norm. But what does normal birth mean in this biomedical era of maternal care? Many researchers have attempted to find out what normal birth is. Previous research usually refers to this with the term 'normal labour and delivery' where birth is seen as a natural and physiological process, without the use of interventions (1).

There is evidence that interventions increase both maternal and fetal distress (2). Although around

two-thirds of women state they would like to have a natural birth (3), most women have lost their confidence in their bodies to be able to give birth without any technological intervention (4).

It is of importance to clear what the physiology of natural birth is. In the process of labour and delivery the hormones play an indispensable role. First we need to point out that there are two hormones which have contradictory functions in this process. Oxytocin is the hormone naturally released in the body of women during birth which controls the contractions of the uterus, among other processes. A special catecholamine, adrenaline, is the hormone secreted when the organism faces stress. The theory of 'fight or flight' states that facing threat one has two options: fight the enemy or run away (5). Compared with the previously mentioned 'fight or flight' response, the theory of the 'fear cascade' adds that there is an unconscious, automatic hormonal response to acutely stressful events (6). In the process of birth adrenaline has two functions. On one hand, to disrupt the production of oxytocin during labour, which in other species is an adaptive response in the face of threat. As a consequence, labour slows down or stops until the mother moves to a safer, more protected place. On the other hand, the vasoconstrictive effect of adrenaline diverts blood away from the abdomen, which causes less blood available for the placenta and fetal oxygenation. This usually leads to fetal distress. In other words, whenever women feel uncomfortable or stressed during their labour and delivery, stress occurring in their environment can lead to slowing down the birthing process (4). Slow labour and fetal distress are the two main indications for intervention in childbirth once labour has begun.

The sources of environmental stress can be physical or social. If there are disturbances in the physical environment, it can either arise due to changes in the birth environment (e.g., change of birthing room while labouring), or due to the inappropriate physical surroundings, which in both cases might cause distress. The social environmental stress might appear as a result of a lack of privacy, reassurance and comfort provided by the caregivers.

From a psychological point of view stress, regardless of how long it is experienced or how intensely it is felt, is associated with the likelihood of developing certain physical or psychological disorders (7). It plays an important role in how predictable, controllable the encountered stress is, and what resources one has to cope well with it. It is relevant to point out that this is a complex process, where the personal characteristics and the psychosocial environment the person is situated in are all interacting. Knowing what an essential experience giving birth is in a women's life, it is going to have a substantial influence on her later well-being, her mother-role, her connection with the newborn child, and whether she develops a disorder of any kind. Here the role of a professional caregiver is to provide support calmly and confidently for the mother in order to make

her capable of mobilizing her resources to cope with the pain of the contractions, and to resign herself to the unexpected.

Another array of theory comes from Odent, who has come to his findings through his work as an obstetrician for several decade-long work. The birthing process is regulated by evolutionarily ancient brain areas, where hypophysis and hypothalamus are responsible for the secretion of various hormones (8). According to his views, mothers during labour have to reach a special birth state, sometimes even called an altered state of consciousness, to let these brain structures take their lead. If inhibition arises during birth it usually comes from the cortex. The stimulation of the neocortex, the centre of intellect, is a hazard in case of natural labour. When the mother is stimulated intellectually, or feeling watched, the neocortex is always active. Odent concludes, that because of the previously mentioned processes, it is inadvisable to engage in discussion with the labouring woman, because language is controlled by neocortex. Strong lights, the beeping and buzzing sounds of machines (e.g., continuous fetal monitoring) and the feeling of being observed should be avoided as well, because these all create alertness in mothers and they are not able to focus inward. He stresses that a good caregiver is like a mother-figure, where intimacy is present so women do not need to be embarrassed and feel free to do whatever they like. If this is neglected birth tensions and complications may occur and lead to unnecessary complications and interventions. This lies in the hands of professional caregivers providing maternity care. On the other hand, physical environment through various neurobiological mechanisms plays a role as well, in the way midwives care for women during childbirth. Birth unit design evokes a neurobiological response not only in women but in the team attending to them as well, which is going to have a cumulative effect on mothers during this special experience of giving birth (9). A positive work environment triggers oxytocin release in the person acting in it. An important but lesser-known effect of oxytocin is its prominent role in social interactions, in connecting people under calm circumstances (8, 9). Consequently, oxytocin helps in providing emotionally sensitive care for the birthing mother from the midwife and others in the team.

What are privacy and intimacy and why are they important during birth?

Research regarding privacy in the field of midwifery is unfortunately rather limited, mostly preoccupied with confidentiality and privacy rights (10). Leino-Kilpi et al. refer to four kinds of privacy: informational, physical, social and psychological. In their study they compared five countries in the first three dimensions (11).

Physical privacy might be the most obvious of all. During the last decades there has been a visible change in the arrangement of birthing rooms in many hospitals of Budapest. There has been a shift from multiple-occupancy birthing rooms to mainly single-occupancy

birthing rooms. This has probably led to higher levels of privacy perceived during childbirth. Because of the intimate nature of acts taking place in a birthing room, respecting this is of great importance. These acts include undressing, gynaecological examinations, body or perineal massage and, of course, the birthing process itself. The above-mentioned comparative study investigated physical privacy on post-natal wards. It reveals that ensuring that showering, toileting and having enemas take place secluded from other mothers is strongly required (11). A study carried out in the United Kingdom suggests, that although women reported to be content with the sensitivity, support and frequency vaginal examinations were conducted with during labour, there are still some aspects to be improved. These are: pain and distress accompanying vaginal examinations and a lack of information why the examination is necessary. Two-fifth of women felt that even if they had wished, they would not have had the opportunity to refuse the examinations (12).

Aspects of social privacy include the mother's capacity to control her social contacts. Its examples are: controlling who comes into the room, how many people there are in order to avoid overcrowding and engaging in discussions only to the limit that is convenient for the mother. The 'knocking before entering' policy should be applied by all caregivers around the mother to prevent distraction or unnecessary stress. A study conducted in Norway among women given birth at home has shown that 'not disturbing' appeared to be the most influential factor during care. She could be disturbed by every person present at the labour progress, be it the midwife, the partner or any member of the supporting team. Protecting the mother from disturbance was the main task to be carried out by the midwives (13). In hospitals, despite the evident dominance of the medicalised protocols of the obstetric-led unit, a private, intimate place needs to be created, where women can feel safe during labour and delivery. They need a place, where they feel unembarrassed to do whatever they wish, such as vocalising, moving around freely, taking a birthing position of their own choice, etc. The possibility of being able to be alone intimately with the newborn (and the father) right after delivery, in a way that the baby is not separated from the mother to be cleaned and dressed, creates a satisfying experience. Both of the afore-mentioned procedures with other routine check-ups can take place a short while later. Odent points out that this intimacy with the baby right after birth, is a significant event allowing the natural oxytocin to be secreted, which enables the placenta to be delivered without any further invasive techniques (8). This closeness and togetherness of the mother and the newborn can form the early building blocks for the later attachment ideally developing between the two of them. The dimension of social privacy is the one mostly matching the concept of intimacy, as it is defined as closeness and belonging to another person. The same trusting relationship between mother and caregiver is inevitable for appropriate care in the birthing room.

The dimension of informational privacy has been studied most widely (10). This covers the topics of the right to informational privacy, where the information given by or to a patient needs to be kept strictly confidential by hospital staff. This might mean not needing to talk in front of other mothers about personal and medication issues. A common custom in many hospitals, with the aim of raising patients' satisfaction with their privacy, is to place curtains around beds in multi-occupancy hospital rooms. A qualitative study in New Zealand pointed out that curtains in shared hospital rooms are able to provide only visual privacy but fail to provide auditory privacy (14). In this manner, informational privacy is compromised because discussions between patients and professionals may be overheard, hindering patients to share personal information about any aspect of their health.

The last dimension of psychological privacy is the least studied dimension, probably due to its perception as the subjective side of all the above dimensions. They might best be understood through regarding the individual's personal history. All birth experiences reminding the subject of any earlier personal life event gain personal meaning and can evoke emotional and psychological responses of various kinds. Lothian states that all women need an environment where they feel protected not only medically, but in a way that also provides them emotional privacy and safety to promote physiological birth (2). A study conducted in Scotland revealed that despite there being a number of alternative ways to measure labour progress, vaginal examination is the most commonly applied method (15). It is used routinely, without seeing it as an intervention. It has been observed that most women find these unpleasant, embarrassing and painful. The way women come to terms with this is clearly a subject of psychology.

Singh and Newburn pointed out in their article about mothers' priorities of the birth environment that women in the first place wanted a clean room, secondly, being able to stay in the same room throughout labour and delivery and, thirdly, having the opportunity to mobilise and walk around (16). A review has recently been written about the effects of physical activity during first stage labour on its length (17). In most cases they have found no change regarding the length of second stage labour with women being physically active while labouring, compared to another group of women labouring in a semi-recumbent position. A second set of articles has found a shortening of first stage labour due to physical activity. Although it is not clear whether there are differences on the outcome, it is important to note that none of the articles mentioned an increase in the length of second stage labour as a consequence of walking or moving during labour. The authors point out that there were no systematic ways as to how special features of physical activity and moving have been measured and recorded, thus it might be required to make even more detailed studies on the topic. It is well documented that women who are involved in the decision-making pro-

cess and are free to take birthing positions of their own choice are more satisfied with the outcome and feel more empowerment during birth (18, 19).

Nowadays, if mother-focused care is the goal, in order to increase mothers' satisfaction, these features and possibilities should definitely be provided. At the same time, further investigation needs to be made as to how to facilitate natural birth, keep interventions at a minimum to help the mothers and their babies to have a favourable experience of birth. Keeping this in mind, it might even have another beneficial side-effect: saving hospital and healthcare costs.

AIM

Our research aim was to gain insight into what role privacy and intimacy play when women go through a very special time of their lives: namely, becoming mothers. Besides that, it is essential to find out what birth attendants can do to construct and maintain an environment fostering privacy and intimacy. The essential objective for creating a new scale was to measure relevant aspects of privacy and intimacy during labour and delivery.

MATERIAL AND METHODS

The questionnaire for our investigation consisted of three main parts. The first set of questions inquired about age, marital status, number of births, a question regarding the educational level and another about socioeconomic status compared against the Hungarian average.

Next, the questionnaire included a shorter version of the Perceived Stress Scale (PSS), the most commonly used scale to measure the perception of stress. It not only measures what type of objective stress the individual went through, but aims to capture how controllable or predictable it was perceived and how overloaded one feels. The classic PSS asks how the subject felt over the last month's period. In accordance with methodological and statistical advice, we have made a change in the time span making it appropriate to measure the stress felt during the birthing procedure, therefore, our questions were formulated "during the birthing process", instead of "in the last month" (e.g., "During the birthing process, how often have you felt confident about your ability to handle the arising problems?" and "During the birthing process, how often have you felt that things were going your way?"). We have used a validated short version (four questions) of the classic scale (7). The informants are requested to tell, with the help of a 5-point Likert scale, where '0' means never and '4' means very often, how often they have felt a certain way.

The Childbirth Intimacy and Privacy Scale (CIPS) is a self-made survey incorporating the main aspects of physical and social privacy combined with intimacy issues according to the existing literature previously mentioned. It consists of 21 statements. The participants are asked to indicate their answers on a 5-point Likert scale, where '0' means the specific feature totally ab-

sent, and '4' entirely present at the birthing process. The first few questions gather information on the aspects of physical privacy (e.g., "The door was closed" and "One could see into the birthing room through the door or a window"). Another set of questions assesses the freedom to act any way the mother feels and letting go of how she 'should' behave under these circumstances (e.g., "During the birthing process I was able to move around freely" and "During contractions I could sigh or scream freely"). That is followed by a series of questions about social privacy (e.g., "The birth attendants were the same during the entire birthing process" and "Other unfamiliar people (other doctor, midwife, student practitioner) disturbed my labour unexpectedly"). Other dimensions based on literature are: feelings of being observed, safety, hygiene, touching, patience with the mother (8, 13, 16) (Odent, Blix, Singh and Newburn). The scale was reviewed and discussed with two experienced midwives, who gave ideas in order for the questions to truly match the present maternity care protocol of childbirth in Hungary. Their notions and feedbacks were included when constructing the final version of the scale. For pretesting the questionnaire two new mothers were selected and the tests were completed in under 6 minutes.

Participants

The study was conducted for four months between September and December 2014. Participants were selected from two maternity units in Budapest, the capital of Hungary. Both were obstetric-led units with annual birth rates ranging from 2000 to 3500 births. The participants taking part in the study were women in the maternity unit within 72 hours after birth. Participation was voluntary, inclusion criteria were women between 18 and 44 years of age, having vaginal delivery at 37-42 weeks of gestation, single embryo pregnancy with fetal head presenting. The surveys were handed out by midwives or midwifery students making their practice at the unit. Ethical approval was granted by both hospital units where the data were collected. The final sample consisted of 88 mothers.

RESULTS

Socio-demographics

As the first part of our survey, some socio-demographic features were filled in (tab. 1). The mean age in the sample was 31.1 years (SD = 4.98, mode = 28 years, age range = 18-40 years). 62.5% of the respondents were over 30 years old. Women participating in the study gave birth to their first or second child, 53.4% having had their first, 34.1% their second, and 12.5% their third or fourth child. Regarding marital status the majority of the sample had a spouse (96.6%), where 62.1% were married and 34.5% were cohabiting, while only 3.4% were single. In terms of educational level, the results showed quite high levels of education, namely, solely 5.7% obtained only a primary school, 17.2% a high school, 14.9% an undergraduate training, 29.9% a col-

lege and 32.2% a university degree or higher education. We aimed to reveal the socio-economic status (SES) by asking “How do you rate your financial situation compared to others?”. In terms of SES, 65.9% marked the average category, 21.6% the slightly better and 5.7% the significantly better; while 4.5% the slightly worse and 2.3% the significantly worse category. For further analysis SES variable was recoded into 1) better 2) average and 3) worse categories.

Table 1. Socio-demographic features of the sample.

Age	Mean (SD)	Frequency
	31.11 (4.98)	
Number of births	1.66 (.95)	53.4% one 34.1% two 12.5% three or more
Marital status		62.1% married 34.5% cohabiting 3.4% single
Educational level		5.7% primary school 17.2% high school 14.9% undergraduate training 29.9% college 32.2% university degree or higher education
Socio-economic status		5.7% significantly better 21.6% slightly better 65.9% average 4.5% slightly worse 2.3% significantly worse

Using chi-square test the analysis showed some significant differences by age groups (under or over 30 years of age): 72.7% of the under 30 group delivered their first baby, 15.2% their second child, while over 30 the results were in 41.8 and 45.5%, respectively ($p < .05$). Furthermore, the younger group tends to have a marital (46.9%) or non-marital spouse (46.9%), while the “older” group tends rather to be married (70.9%) than cohabiting (27.3%) ($p \leq .05$).

Perceived Stress Scale (PSS)

The range of the perceived stress scale items varied between 0-4, and the total score between 0-12. PSS2 and PSS3 were recoded in order to compare means and to display the total score of perceived stress. The descriptive statistics (tab. 2) showed that PSS2 and PSS3 reached the lowest mean values, thus respondents felt reduced self-confidence to cope with emerging problems and see things going as they wished. PSS1 and PSS4 showed slightly higher mean values, thus mothers felt they were able to handle the situation and emerging difficulties. The mean value of the total PSS score resulted in 6.13 (range 1-12) and PSS total data comes from a normal distribution. The internal consistency of the scale is closely satisfying: Cronbach $\alpha = .602$.

Table 2. Descriptive statistics of PSS.

	Mean (SD)	Frequency ^a
PSS1	1.66 (1.06)	19.3%
PSS4	1.67 (1.11)	22.7%
PSS2	1.32 (1.02)	12.5%
PSS3	1.48 (.92)	11.4%
PSS Total	6.13 (2.78)	

^asummarized category of ‘quite often’ and ‘very often’

Some tendency could be confirmed when considering marital status and PSS. The mean of item PSS3 (“During the birthing process, how often have you felt that things were going your way?”) showed $M = 2.54$ among married, $M = 2.63$ among cohabiting and $M = 1.33$ among singles ($p \leq .05$), meaning that mothers in cohabitation were the most optimistic during labour and delivery. ANOVA showed similar differences regarding education, that is, mothers with higher education indicated higher levels of optimism ($M = 2.00$ with primary school, $M = 2.47$ with high school, $M = 2.85$ with a college degree and $M = 2.61$ with a university degree, $p < .05$). Another significant difference was found at the item PSS2 (“During the birthing process, how often have you felt confident about your ability to handle emerging problems?”), where $M = 1.60$ could be detected among mothers with accomplished primary school, on the other hand, $M = 2.96$ with college graduation ($p < .05$). Due to high – Spearman – correlations of the variable educational level with marital status ($r = -.368$, $p < .001$) and SES ($r = -.440$, $p < .001$), PSS items also showed significant differences: mothers with higher SES were more optimistic and could cope with stress much better. PSS items showed high and strong correlations. All items intercorrelated, namely, a strong relationship was detected in case of each item (tab. 3).

Table 3. Correlation matrix of PSS.

	PSS1	PSS2	PSS3	PSS4
PSS1	-	-.301*	-.288*	.380*
PSS2		-	.390*	-.353*
PSS3			-	-.363*
PSS4				-

* $p < 0.01$

PSS total score was also tested, where the highest perceived stress could be detected among single and low SES mothers ($M = 5.87$ for cohabiting mothers and $M = 10.00$ for singles; $M = 5.25$ for better SES and $M = 9.17$ for worse SES). No significant differences were found in terms of age, education or number of children, however the stress was higher among mothers under 30 years old having their first child.

Childbirth Intimacy and Privacy Scale (CIPS)

CIPS is a self-made survey incorporating the main aspects of physical and social privacy combined with in-

timacy issues. The reliability of the measurement tool in the present sample was high $\alpha = .842$. The participants were asked to indicate their answers on a 5-point Likert scale, where '0 = being totally absent' and '4 = being entirely present' during the birthing process. The highest value was experienced regarding statement "My partner was taking pictures or making recordings during labour or delivery" which had to be reversed later. Here 72% ($M = 3.25$ and $SD = 1.38$) of mothers agreed that there were no photos or recordings, making this a statement that contributed to higher privacy. The next highest values were detected referring to the items "The birth attendants cared for me with patience", "The birth attendants were the same during the entire birthing process", "People in the birthing room made me feel secure", "I did not feel embarrassed in the presence of my birth attendants" and "I could stay in the same room for the entire time of birth"; 68.2, 68.2, 64.8, 64 and 63.6% respectively entirely agreed to this statement where $M = 3.59$ and $SD = .36$, $M = 3.35$ and $SD = 1.08$, $M = 3.51$ and $SD = .74$, $M = 3.47$ and $SD = .84$, $M = 3.24$ and $SD = 1.17$ was measured for the subsequent statements. Lowest values were associated with items "There was a private bathroom adjoining the birthing room which was used only by myself", "I could choose freely in what position I deliver" and "People were knocking before entering the birthing room". In case of the previous statements 77.3, 37.2 and 26.4% of people disagreed with them ($M = .63$ and $SD = 1.28$, $M = 1.48$ and $SD = 1.45$, $M = 1.59$ and $SD = 1.33$). To sum up, out of all CIPS items, mothers indicated high levels of privacy in features regarding no photos being taken, continuity of care throughout labour and delivery, patience and security provided by birth attendants and a lack of embarrassment in their presence.

Significant differences could be explored in CIPS mean values by age and marital status. Mothers of younger age were more distracted by voices from neighbouring birthing rooms ($M = 1.76$ vs. $M = 2.36$, $p \leq .05$), while 'older' women preferred a private bathroom adjoining the birthing room ($M = .83$ vs. $M = .36$, $p < .05$). Single mothers felt the most embarrassed in the presence of birth attendants during delivery ($M=2.00$ compared to married mothers $M = 3.56$, $p < .01$). Choosing freely in what position to labour was the least common among single mothers of lower socio-economic status and among highly educated mothers ($p < .05$). The features of a lack of embarrassment in the presence of birth attendants, careful and comforting touching or stroking and patience of the birth attendants were highly appreciated by mothers with high SES ($p < .05$).

CIPS total score was computed after recoding the inverse items. The mean value of the total CIPS was $M = 58.4$ ($SD = 11.99$) and came from a normal distribution. Investigating the distribution of the scale, groups might be defined by percentiles, that is, group 1) up to 50 – has experienced low, group 2) 51-66 moderate and group 3) over 67 – high levels of intimacy and privacy during the birthing procedure. Examining socio-demo-

graphics, no significant differences were found when testing the mean value of the total score by using ANOVA; however, intimacy and privacy seemed to be slightly higher among mothers over 30, having at least their third child, married, with lower qualifications and higher SES.

In the final phase of the analysis, we attempted to investigate the measurement features of the CIPS. Exploratory factor analysis was employed to catch sub-scales of the present new instrument. The analysis indicated that six components can be separated distinguishing among different dimensions of privacy. Table 4 presents the results of the test which resulted in good communalities and cumulative percentage (66.9%). The first component might be interpreted as 'Patience/Social Privacy/Security', the second as 'Freedom/Letting Go', the third component covers 'Physical Privacy', the fourth 'Physical Safety', the fifth 'Hygiene' and the sixth 'Being Observed'. These sub-scales might identify separate dimensions of intimacy and privacy during delivery and labour.

The last step of the analysis aimed to reveal the relationship between PSS and CIPS. The two total scores showed a strong correlation, namely Spearman's $\rho = -.405$ ($p < .001$). This result explains that the higher the perceived stress, the lower the experienced intimacy and privacy; and the lower the perceived stress, the higher intimacy and privacy could be experienced by mothers.

DISCUSSION

Referring to Odent we have found it essential to avoid influencing the birth process, by asking women to fill in any questionnaires while labouring, i.e. activate their neocortex by trying to get information at this special time (8). Therefore, we decided to invite mothers to the investigation after delivery, thereby asking them to recall their experiences retrospectively, within the first 72 hours after delivery. This might probably lead to less exact information to some extent, still our report corresponds to our goals to gain information on mothers' subjectively experienced intimacy and privacy during their labour and delivery.

The goal of our present study was to explore the way privacy and intimacy issues are maintained during the birthing process. Qualitative studies using interviews and case studies dominate in gathering information on the topic. Despite the growing body of research, our CIPS scale assessing the aspects of privacy and intimacy using a quantitative method is a valuable contribution to this field. The CIPS shows high reliability in our sample. Highest values on the scale were associated with no photos being taken, continuity of care throughout labour and delivery, patience and security provided by the birth attendants, and a lack of embarrassment in their presence, indicating how essential the social aspect of care is. Lowest values on the scale were indicated by lacking a private bathroom, not being able to choose the position during delivery and people not knocking before entering the birthing room.

Table 4. Exploratory factor analysis with principal component method.

Statement	Component					
	1	2	3	4	5	6
20. The birth attendants cared for me with patience	.837					
21. During the birthing process they gave me enough time for everything	.802					
17. I was satisfied with the number and mode of vaginal examinations during labour	.773					
18. I did not feel embarrassed in the presence of my birth attendants	.664					
5. I felt secure in the birthing room	.657					
16. People in the birthing room made me feel secure	.639					
19. The touching or stroking of the birth attendants was careful and comforting	.561					
15. Other unfamiliar people (other doctor, midwife, practitioner) disturbed my labour unexpectedly	-.544					
3. One could see into the birthing room through the door or a window	.488		.452			
14. The birth attendants were the same during the entire birthing process	.425					
10. During the birthing process I was able to move around freely		.815				
11. I could choose my labour positions freely		.800				
12. I could choose my delivery position freely		.716				
4. If someone entered the birthing room, I could be seen immediately			-.781			
2. The door was closed			.763			
1. People knocked before entering the birthing room			.576			
6. I could stay in the same room for the entire time of birth				.644		
8. During labour I could hear voices from neighbouring birthing rooms				-.577		
13. During contractions I could sigh or scream freely		.415		.446		
7. There was a private bathroom adjoining the birthing room which was used only by myself					.856	
9. My partner was taking pictures or making recordings during labour or delivery						.819

The exploratory factor analysis of CIPS has revealed six subscales regarding intimacy and privacy. The most influential seems to be the factor 'Social Privacy (Intimacy), Patience, Security' provided by the caregivers. Along with previous research in this area, being emotionally sensitive, caring and supporting during labour and delivery are highly rated qualities of a birth attendant (2, 4, 8, 13). This type of supporting behaviour and capacity to create a trusting relationship with the mother should be among the qualities and duties listed in the protocol of birth attendants. The second dimension of 'Freedom, Letting go' covers the freedom of movement and choosing the mother's labour and delivery position but can be understood, just as letting go of all the environmental and social constraints and the ability to focus and listen to one's body. The third is 'Physical Privacy' taking into account how the physical environment was used by caregivers to maintain privacy at the birth room upon entering it. The fourth dimension of 'Physical Safe-

ty' refers to the environment from a more physical point of view. Namely, if the mother can afford to feel comfortable in the room because of its physical features she is able to develop attachment to it by being able to stay in the same room, not having to change rooms during the birthing procedure. In other studies this attachment is regarded as a sign of the nesting instinct developing in mothers during the last months of pregnancy. From this clearly evolutionary perspective the mother's unconscious aim is to find a place where she feels comfortable and safe to give birth to her child (20). The fifth dimension of 'Hygiene' indicates the mothers' need to have a clean and private bathroom. As research in the UK demonstrates, this is rated high among mothers for the time of birth. It might be relevant that in case they need to use the bathroom, they do not have wait or to leave the previous secure surroundings and encounter novel probable stressors, etc. (16). Unfortunately, as mothers in our study indicate, in many facilities in Hungary

mothers still do not have a choice of a private bathroom, shower or bathtub for the time of labour, which shows the necessity for later development in this area. The last sub-scale of 'Being Observed' refers to the phenomenon of the mother's ability to focus on her body and act intuitively according to the altered state of mind. This process might be compromised if she has to control her behaviour because photos or recordings are taken. Fathers or other family members should be informed that excessive documentation might disturb the mother. This is in line with previous studies in the field, as Odent stresses how important it is that the mother does not feel 'being observed'. Instead, the birth attendant should be 'with' her, trying to provide her security (8). Research undertaken in Norway stresses that avoiding disturbance is the main responsibility of the midwife during labour (13).

We have also computed total scores for the perceived stress during labour and delivery on the Perceived Stress Scale (PSS). High scores on the PSS were detected among single women with low socio-economic status. This might express that mothers without a spouse perceive higher levels of stress, potentially due to less social support during the birthing process and the time anticipated after delivery at home with the little newborn. Another finding is, however not significant, that mothers of younger ages and having given birth to their first child have experienced higher levels of stress. We can conclude that women previously having gone through a birthing process, might have a more specific knowledge as to what to expect next time. So higher stress among younger women possibly refers to this earlier experience. But this not significant difference, might also refer to the fact that the mother has potentially had previous undesirable experiences during birth. Regarding the CIPS, total scores were also calculated. No significant differences have been found regarding the socio-demographic attributes. Slightly higher CIPS scores were identified among women over 30, having had their third child, married, with higher SES, but with lower qualification. These results might indicate that CIPS measures satisfactorily in several types of groups, regardless of variations in the socio-demographic features. The total scores of PSS and CIPS have shown high correlation which confirms the relationship between the two scales. High perceived stress scores matched the low rates of privacy experienced by women during the birthing procedure, and vice versa. This highly corresponds to the current literature demonstrated above, suggesting that privacy and intimacy enhance the feelings of physical safety and social comfort, which contributes to lower levels of stress. Just as Romano and Lothian claim, any kind of stress experienced during the birthing process can block the production of oxytocin, thereby slowing down the procedure (4). Therefore, in consonance with our findings in the present study, intimacy and social safety have proven to be relevant aspects in minimising stress when providing care for birthing mothers. Consequently, besides medical assistance, women appreciate a comforting, calming, supporting attitude from the birth

attendant helping her to gain self-confidence to give birth naturally (2).

It is important to note that our study findings are limited to the two units from which the participants were recruited and thus cannot be generalised. The conclusions reflect mothers' experiences in the context of the Hungarian maternity setting.

CONCLUSIONS

In line with the afore-mentioned findings, avoiding disturbance is a primary need during the birthing procedure. Our Childbirth Intimacy and Privacy Scale has the potential to contribute to raising awareness to this phenomenon by assessing the intimacy and privacy experienced by mothers. It measures what role the environment of the birth unit has, the mode how this environment is used, and the closeness between the mother and the caregiver in their extraordinary relationship play during labour and delivery. It is important to note that anyone present at the birthing process supporting the labouring woman, might also mean a potential source of stress, if not doing their job in a nonintrusive way. Our present research has shown that shielding the mother from environmental stress and providing her with calmness and safety is highly valued and closely associated with the privacy experienced. Ensuring physical and emotional security for the woman seems to be a relevant aspect of a midwife's work, just as protecting her from disturbances of all kinds. If focus on this is kept, an emotional connection between the mother and the midwife, calm but alert, might develop.

This study emphasises that in this era, where medically assisted birth becomes more and more frequent, well managed social interactions, a trusting relationship and patience may empower the woman to trust her body and intuitions to be able to stay on the physiological side of labour and delivery. This allows her to be satisfied and have a positive experience of birth.

References

1. Gould D: Normal labour: a concept analysis. *Journal of Advanced Nursing* 2000; 31(2): 418-427.
2. Lothian JA: Safe, Healthy Birth: What Every Pregnant Woman Needs to Know. *The Journal of Perinatal Education*, Summer 2009; 18(3): 48-54.
3. Kringeland T, Daltveit AK, Møller A: What characterizes women who want to give birth as naturally as possible without painkillers or intervention? *Sexual & Reproductive Healthcare* 2010; 1: 21-26.
4. Romano AM, Lothian JA: Promoting, Protecting, and Supporting Normal Birth: A Look at the Evidence. *Journal of Obstetric, Gynecologic & Neonatal Nursing* 2008; 37: 94-105. DOI: 10.1111/J.1552-6909.2007.00210.x.
5. Smith E, Nolen-Hoeksema S, Fredrickson B, Loftus GR: Atkinson and Hilgard's Introduction to psychology. 14th ed., Chapter 14. Thomson: Wadsworth, 2003.
6. Stenglin M, Foureur M: Designing out the Fear Cascade to increase the likelihood of normal birth. *Midwifery* 2013; 29: 819-825.
7. Stauder A, Konkoly Thege B: Az észlelt stressz kérdőív (PSS) magyar verziójának jellemzői. *Mentálhigiéné és Pszichoszomatika* 2006; 7(3): 203-216.
8. Odent M: A szeretet tudományosítása. *Napvilág Születésház Bt*, Budapest, 2003.
9. Hammond A, Foureur M, Homer CSE, Davis D: Space, place and the midwife: Exploring the relationship between the birth environment. *Neurobiology and Midwifery Practice*, *Women Birth* 2013; <http://dx.doi.org/10.1016/j.wombi.2013.09.001>.
10. Burden B: Privacy or help? The use of curtain

positioning strategies within the maternity ward environment as a means of achieving and maintaining privacy, or as a form of signalling to peers and professionals in an attempt to seek information and support. *Journal of Advanced Nursing* 1998; 27: 15-23. **11.** Leino-Kilpi H, Välimäki M, Dassen T et al.: Maintaining privacy on post-natal wards: a study in five European countries. *Journal of Advanced Nursing* 2002; 37(2): 145-154. **12.** Lewin D, Fearon B, Hemmings V, Johnson G: Women's experiences of vaginal examinations in labour. *Midwifery* 2005; 21: 267-277. **13.** Blix E: Avoiding disturbance: Midwifery practice in home birth settings in Norway. *Midwifery* 2011; 27: 687-692. **14.** Malcolm HA: Does privacy matter? Former patients discuss their perceptions of privacy in shared hospital rooms. *Nursing Ethics* 2005; 12(2): 156-166. **15.** Shepherd A, Cheyne H: The frequency and reasons for vaginal examinations

in labour. *Women and Birth* 2013; 26: 49-54. **16.** Singh D, Newburn M: Feathering the nest: what women want from the birth environment. *Midwives* (The official journal of the Royal College of Midwives) 2006; 9(7): 266-269. **17.** Hollins Martin CJ, Martin CR: A narrative review of maternal physical activity during labour and its effects upon length of first stage. *Complementary Therapies in Clinical Practice* 2013; 19: 44-49. **18.** Thies-Lagergren L, Hildingsson I, Christensson K, Kvist LJ: Who decides the position for birth? A follow-up study of a randomised controlled trial. *Women and Birth* 2013; 26: e99-e104. **19.** Green JM, Baston HA: Feeling in control during labor: concepts, correlates, and consequences. *Birth* 2003; 30: 235-247. **20.** Walsh DJ: 'Nesting' and 'Matrescence' as distinctive features of a free-standing birth centre in the UK. *Midwifery* 2006; 22: 228-239.

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