

## **Do pregnant women know how to correct inverted nipples?**

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### **Abstract**

Inverted nipples occur in an estimated 9 to 10 percent of women globally, contributing to the number of women who are not exclusively breastfeeding their infants. Women with inverted nipples may want to breastfeed, but infants may be unable to latch to the breast. Inverted nipples can be corrected, but it is unclear if women know about suitable interventions. This study assessed if pregnant women knew about the available techniques to correct inverted nipples. We conducted individual interviews with nine pregnant women with inverted nipples in a tertiary hospital in South Africa. Data were analysed using an inductive content analysis. Most of the women had very limited knowledge of exclusive breastfeeding or inverted nipples and knew very little about correcting devices. These women thought that their infants would be unable to latch and that exclusive breastfeeding would be impossible. Pregnant women with inverted nipples should be educated about methods to correct their nipples.

**Keywords:** Inverted nipples, correction of inverted nipples, breastfeeding challenges.

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### **Introduction**

The World Health Organization (WHO) recommends that infants should be exclusively breastfed (EBF) for six months postpartum (WHO, 2014). Fewer women exclusively breastfeed their new born infants due to the presence of inverted nipples (Sokol, Aguayo & Clark, 2007). Women with inverted nipples may want to breastfeed, but infants may be unable grasp the breast deeply when the nipple is inverted. A newborn infant unable to find a protruding nipple to latch onto poses challenges to breastfeeding (Paraskevas & Sabri, 2012). After numerous unsuccessful attempts, many women with inverted nipples may give up on breastfeeding (Bouchet-Horwitz, 2011).

Inverted nipples are characterised by short galactophorous ducts, periductal fibrosis and a lack of soft tissue under the nipple base (Paraskevas & Sabri, 2012) and are found in an estimated 9 to 10 percent of women globally (Bouchet-Horwitz, 2011). Inverted nipples are classified according to the degree of retraction. Three grades of inverted nipples have been identified. In Grade 1

inversion, nipples are effortlessly everted when stimulated. Nipples that need to be manipulated a great deal to evert, do not remain protruded and rapidly become inverted again, can be classified as Grade 2 inverted nipples. Grade 3 inverted nipples are secured to underlying breast tissue (adhesions) and can therefore not protrude with any deal of manipulation, needing additional intervention (Bouchet-Horwitz, 2011; Paraskevas & Sabri, 2012).

The varying grades of nipple inversions can be corrected through a number of techniques. Perinatal exercises such as Hoffman's exercise, the Nipplette™ (Philips Avent) and breast shells can evert nipples (Chakrabarti & Basu, 2011). McG Taylor, Lahiri and Laitung (2011) describe a surgical procedure where the inverted nipple is manually everted with a skin hook following local anaesthesia, the fibrous tissue under the nipple is cut with a scissors whilst taking care not to sever the lactiferous ducts, finally, sutures are strategically placed around the nipple to maintain the eversion and facilitate manipulation. Surgical correction of inverted nipples may hamper breastfeeding (McG Taylor et al., 2011). Two non-surgical interventions are the disposable syringe- and rubber band methods. A 10 or 20ml syringe is altered by removing a 0.5 cm piece from the front end where the plunger is then inserted. The winged end of the syringe is then placed over the nipple and the plunger is retracted for 30 to 60 seconds, resulting in the eversion of the nipple (Walker, 2008). The rubber band method requires manually applying a rubber band on the nipple, enabling it to protrude (Chakrabarti & Basu, 2011). Alternatively a syringe can be used to apply the rubber band more easily – this is similar to using the disposable syringe method.

Nipple correction techniques are used in pregnant women before childbirth. Pregnant women with inverted nipples need to know about the corrective options to rectify or improve their nipples prior to childbirth. Exploring the knowledge of pregnant women regarding the correction of inverted nipples may contribute to early intervention and a higher rate of exclusive breastfeeding. This article explores and describes the knowledge of pregnant women regarding the correction of inverted nipples.

## **Methodology**

### *Research design*

We conducted a qualitative, descriptive study. As suggested by de Vos, Strydom, Fouché and Delpont (2011), we focussed on exploring and describing the participants' knowledge regarding the topic. The study was conducted during the last trimester of pregnancy.

### *Setting and participants*

The study was conducted at an antenatal care (ANC) clinic at a tertiary hospital in the Tshwane District, Gauteng Province. Approximately 250 pregnant women visit the clinic every month.

Pregnant women with inverted nipples, who wanted to breastfeed were included in the study. Pregnant women who wanted to formula feed were excluded from the study.

### *Sampling and sample size*

Purposive sampling (Brink, van der Walt & van Rensburg, 2012) was used to select the participants. During their physical examinations, the ANC clinic staff identified and recruited pregnant women with inverted nipples in their third trimester of pregnancy. The researchers approached the pregnant women after the ANC clinic staff indicated that the pregnant women were willing to participate in the study. Nine participants were interviewed.

### *Data collection*

We conducted semi-structured individual interviews with nine pregnant women. Data were collected over a period of two weeks in 2015. Interviews lasted for four to ten minutes. Before the interview, the researchers guided the participants through the process of informed consent by explaining the purpose of the study, the voluntary nature of participation, that they could withdraw at any time during the interview and that data reported would be used in a confidential manner. The overall question of the study was: "What is the knowledge of pregnant women from the Tshwane District area in Pretoria regarding the correction of inverted nipples?" Data saturation was reached after the seventh interview.

A preliminary literature review was used to develop the semi-structured interview guide. Questions included in the interview guide focussed on: inverted nipples, exclusive breastfeeding and procedures for correcting inverted nipples. The interviews were audio-recorded and the researchers kept field notes to capture the nonverbal communication and behavioural responses of the participants.

### *Data analysis*

We used inductive content analysis (Elo & Kyngäs, 2008) to analyse the data. Transcripts were read to acquire an overall understanding of content, achieve immersion and gain a sense of the whole. We read the interviews while writing notes and headings in the margin. The process was repeated and categories with similar events and incidents were grouped as themes to reduce the number of

categories. Each theme was named by using content-characteristic words, describing the phenomenon, increasing understanding and generating knowledge. The researchers repeated the abstraction process to ensure all categories were identified.

#### *Trustworthiness*

Trustworthiness was ensured by employing the framework as suggested by Lincoln in Guba as stated in Brink, van der Walt and van Rensburg (2012). We ensured an audit trail so that the decision making pathway during data analysis could be checked. We remained neutral during interviews to ensure that our prior knowledge did not influence the interpretation of the findings. We provided a dense description of the methodology used and the data collected. Themes and categories were discussed amongst the co-authors to reach consensus. Due to the use of only one ANC clinic with a very small population, the aim was rather on understanding the phenomenon under study than on transferring the findings of the study.

#### *Ethical considerations*

Permission to conduct the study was obtained from the hospital Chief Executive Officer and ethics approval was obtained from the Research Ethics Committee of the University of Pretoria (S274/2015). The main principles of justice, beneficence, confidentiality and respect for human dignity were adhered to. Informed consent was obtained from each participant (Polit & Beck, 2012).

### **Results**

Four themes emerged from the interviews that are supported by direct excerpts from the participants. The participants indicated knowledge on exclusive breastfeeding, inverted nipples, challenges inverted nipples may pose to exclusive breastfeeding and correcting devices for inverted nipples.

#### *Exclusive breastfeeding*

Seven of the participants knew what exclusive breastfeeding was. Not all could articulate the correct definition, but knew the implications of exclusive breastfeeding:

*'It is when you just give the baby only breastfeeding without water, without porridge or what.'* (P1)

*'Six months, you don't give him food, you don't give him water, only breast milk...'* (P5)

### *Knowledge of inverted nipples*

Most of the women admitted they knew nothing regarding inverted nipples but were willing to try breastfeeding their infants:

*'I can also give the breast even if I don't have the nipples.'* (P1)

*'I don't want to lie, I know nothing.'* (P6)

*'I don't have any knowledge on that, I won't lie.'* (P7)

*'...maybe it is a nipple that is on the breast that don't come...this thing...like...it is flat, not like, uh...I don't know.'* (P8)

Most of the women had not heard the term 'inverted nipples'. One participant indicated it was the first time she had heard of the term. When some explanation of inverted nipples was provided and the participants were probed again, they came forward with the following descriptions:

*'...when I don't have nipples outside...'* (P1)

*'The normal nipple is that one that like, it comes like out.'* (P5)

*'...they don't come out, you have to at least touch them.'* (P9)

### *Challenges inverted nipples may pose to exclusive breastfeeding*

Some of the grades of nipple inversion could be derived from the answers provided:

*'...because mine raise.'* (P3)

*'...when you touch them, they come out.'* (P9)

Infants may struggle with breastfeeding if unable to draw the nipple up and back into contact with the hard palate. A participant with inverted nipples who was pregnant for the second time articulated that she tried to breastfeed previously but was not successful. She had to express and freeze her breast milk and after two months she had to put her baby on formula milk. Participants expressed the following challenges inverted nipples may pose to exclusive breastfeeding:

*'I only know that every time that I want to breastfeed I must rub them so that they can raise.'* (P3)

*'I didn't know about the flat nipple that it's gonna affect the baby.'* (P5)

*'...if the nipples not come out you can't feed the baby cause it's flat mos, the baby can't hold it...'* (P8)

### *Knowledge about correcting devices*

When asked if they would use corrective nipple devices, the participants indicated that they had some knowledge on corrective techniques. Their knowledge on the specific techniques is quoted below:

*'A nipple puller?'* (P4)

*'My step-grandmother told me one takes spirits during pregnancy, then you place some of the spirits on cotton, pull the breast tight and put the spirits on to bring the nipple out. But it does not work.'* (Translated from Afrikaans) (P4)

*'A warm cloth?'* (P7)

*'I have heard about the surgery to correct it.'* (P9)

Most of the participants articulated that they would use corrective devices. One of the participants bought a nipple device. The opinions of the participants regarding the use of corrective devices are depicted in the following excerpts:

*'I saw a nipple puller on the shelf and tried it. It is very uncomfortable though and it hurts very much. More than a breast pump.'* (Translated from Afrikaans) (P4)

*'I would, because I think I might suffer.'* (P7)

*'I will use it.'* (P8)

The participants were asked if they had questions or would like to receive more information about inverted nipples. A participant was concerned that her nipples were not good for the infant. All the participants requested more information about inverted nipples:

*'Do you think this kind of nipple they are they are not good enough for the baby?'* (P3)

*'Why am I punished with it?'* (Translated from Afrikaans) (P4)

*'I wanted to ask, is there something that you can do to make the nipple come out?'* (P5)

Expressing breastmilk with inverted nipples can be demanding and ultimately women may end up formula feeding newborn infants.

### **Discussion**

Exclusive breastfeeding is beneficial for the newborn infant and the mother (Whittaker, 2010). Breastfeeding is cost effective, naturally produced and always readily available. As in the present study, in a study conducted by Chakrabarti and Basu (2011), most mothers knew the benefits of breastfeeding and were

quite motivated to practice exclusive breastfeeding, but felt distressed and dejected when they could not nurse their infants.

If women do not know that they have inverted nipples (as depicted in this study), they may be unprepared for the breastfeeding challenges that await and lead to inadequacy of infant feeding. Examination of the mother's breast, especially the areola and nipple can identify anatomical problems and initiate treatment before delivery (Boskabadi, Ramazanzadeh, Zakerihamidi & Omran, 2014). A study by Paraskevas and Sabri (2012) concluded that most inverted nipples are Grade II with moderate fibrosis where the nipples can easily be pulled out but not maintain projection.

Breastfeeding is challenging for healthy mothers with inverted nipples (Boskabadi et al., 2014). Although inverted nipples are common, the condition should not hamper breastfeeding if expert advice and counselling on proper positioning are available (Chakrabarti & Basu, 2011). In this study, one of the participants said her inverted nipples prevented her infant from latching and caused a decrease in milk production due to inadequate suckling. Inverted nipples affected the confidence of another participant who said her nipples were not good enough for her baby to suckle on. Aside from hindering exclusive breastfeeding, inverted nipples may lead to psychological problems and poor hygiene causing repeated inflammation and irritation of the nipple (Min, Park, Heo & Min., 2010).

Whilst a range of interventions are available to correct inverted nipples, pregnant women are not aware of the various corrective devices and techniques. Pregnant women in South Africa (this study) and lactating women in India (Chakrabarti & Basu, 2011) are eager to adopt any method that corrects their inverted nipples, enabling their infants to feed on the breast. Motivation, a supporting network and adequate antenatal care are important predictors of breastfeeding success. Iranian mothers with adequate prenatal care had fewer breastfeeding complications (Boskabadi et al., 2014) and British adolescent mothers are more likely to breastfeed if they have an adequate support network (Dykes et al., 2003). We recommend that the detection and treatment of breast problems including inverted nipples before childbirth can reduce the problems experienced in the first few days of lactation.

Our results are limited by the small sample size, and our results are applicable in this specific context. A larger scale quantitative study is needed in other hospitals to determine the extent of inverted nipples and the resulting challenges to exclusive breastfeeding. Further trials regarding non-invasive correction techniques for inverted nipples could be conducted by midwives during the third trimester of pregnancy. Referring these women timeously may solve the inverted

nipples before childbirth and facilitate exclusive breastfeeding of the new-born infant.

## Conclusion

Our results indicate that pregnant women know about exclusive breastfeeding and want to breastfeed. They had limited knowledge about inverted nipples. Inverted nipples are a common anatomical problem during pregnancy and finding women with inverted nipples in the ANC clinic to interview was not difficult. It is concerning that most of women have limited knowledge about inverted nipples and the associated challenges to exclusive breastfeeding. Despite the many correcting interventions available, only one woman had bought a device in a self-attempt to correct her inverted nipples. Women with inverted nipples are often not detected and treated nor given advice about their care. All the participants in this study requested more information about inverted nipples and nipple correcting devices. Pregnant women with inverted nipples should receive information on all the available nipple correcting methods.

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