Original article

Seeking medical help for nausea and vomiting in pregnancy and hyperemesis gravidarum in primary care

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Introduction

Nausea and vomiting in pregnancy (NVP) is experienced in 75 to 80% of women with normal singleton pregnancies (Gadsby *et al* 1993, Davis 2004, Louik *et al* 2006). Although the term 'morning sickness' is commonly used, it is inaccurate, and may be confusing or distressing for women who have symptoms throughout the day (Dilorio *et al* 1992). Approximately 2% of these women experience symptoms only in the morning, whereas approximately 80% experience symptoms throughout the day (Lacroix *et al* 2000, Davis 2004). Thirty two per cent of women still have symptoms after 20 weeks' gestation (Lindseth & Vari 2005).

Hyperemesis gravidarum (HG), extreme and pernicious NVP, has been reported to occur in 0.63%–1.5% of pregnancies (Bashiri *et al* 1995, Tsang *et al* 1996). Weight loss of greater than 5% of pre-pregnancy weight, dehydration, and electrolyte imbalance, as well as more severe complications, result (Trogstad *et al* 2005), frequently requiring hospitalisation and parenteral nutrition (Verberg *et al* 2005, Fejzo *et al* 2009).

Quality of life

Both NVP and HG have been shown to have adverse effects on the quality of life of affected women. The physical and psychological features of NVP negatively mark the pregnancy experience for many women (Kuşcu & Koyuncu 2002), imposing substantial lifestyle limitations (Ebrahimi *et al* 2010), and negative consequences such as depression, adverse effects on their relationship with a partner, and fear that their condition will harm their baby (Sorensen *et al* 2000). NVP is associated with psychiatric morbidity, as nausea and vomiting severity has been found to correlate with social skills, anxiety, insomnia, and depression (Yerushalmy & Milkovich 1965).

Women with HG report negative feelings throughout their condition such as loneliness, guilt, shame and frustration (Swallow *et al* 2004). Decreases in social interaction and difficulty conducting daily tasks are also reported (Swallow *et al* 2004). Such consequences are common, for example, 82% of 808 women with HG were found to experience negative psychosocial consequences, including socio-economic, attitude, and psychiatric changes (Meighan & Wood 2005). There has also been a correlation found between NVP and depression scores on the Zung Self-rating Depression Scale (Kitamura *et al* 1996).

Management of NVP and HG

Early and adequate treatment of NVP/HG from health care providers is essential (Kuşcu & Koyuncu 2002, Davis 2004, Poursharif *et al* 2008). Studies have shown that perceived delays in treatment of NVP/HG are associated with increased emotional distress (Munch 2000).

Women and their health care providers tend to overestimate the teratogenicity of medications, leading to underuse of pharmacologic therapy for NVP/HG (Koren & Levichek 2002). While the self-limiting nature of NVP and the unclear pathophysiology of NVP/HG are reasonable sources of hesitation for prescribing antiemetics (Koren & Levichek 2002), medications should, it has been argued, be used as an early medical intervention to improve quality of life (Davis 2004). It has been shown that women with HG tend to view their condition as biologically determined (Munch 2002). This insight into women's beliefs about the cause of HG may help with its management.

A review by Jarvis & Nelson-Piercy (2011) investigated treatment options for women with NVP/HG, and presented antiemetic medications with no known teratogenic effects (see Table 1). They argue that, as NVP is a common condition and that as these drugs have been shown to be safe, antiemetics with confirmed safety profiles should be prescribed for those women who choose medical intervention.

Optimal management of NVP/HG by health care providers is invaluable to women with these conditions. However, in order to help health care providers in the provision of their care, more must be understood about the experiences of women with NVP/HG who seek help.

This research aims to present an in-depth understanding of the experiences of women with NVP or HG who have sought medical advice. From this data, the paper aims to suggest ways to improve the quality of communication, help practitioners assist women to make an informed choice about treatment options and provide qualitative data to help improve the current NICE guidelines for intrapartum care.

Table 1. Suggested antiemetic
Cyclizine, 50 mg orally, intramuscularly, or intravenously, three times daily
Metoclopramide, 10 mg orally, intramuscularly, or intravenously, three times daily
Prochlorperazine, 5 mg orally, 12.5 mg intramuscularly or intravenously, three times daily; 25 mg rectally, followed if necessary six hours later by an oral dose
Promethazine 25 mg orally, at night
Chlorpromazine 10–25 mg orally up to three times daily; 25 mg intramuscularly, three times daily
Domperidone 10 mg orally, four times daily; 30–60 mg rectally, three times daily
Ondansetron 4–8 mg orally, intramuscularly, or by slow intravenous infusion, two to three times daily
Taken from Jarvis & Nelson-Piercy (2011).

Table 2. Participants' self-reported medication that had been tried

Participant number	Medication tried
NVP1	none
HG2	prochlorperazine, cyclizine
NVP3	cyclizine
HG4	prochlorperazine, metoclopramide
HG5	cyclizine
HG6	cyclizine, ondansetron, prochlorperazine
HG7	cyclizine
HG8	cyclizine, promethazine, metoclopramide
HG9	cyclizine, prochlorperazine, ondansetron, prenisone
HG10	promethazine, cyclizine
HG11	metoclopramide
HG12	prochlorperazine
HG13	cyclizine, metoclopramide
HG14	cyclizine, metoclopramide
NVP15	none
HG16	cyclizine, prochlorperazine
NVP17	promethazine
NVP18	cyclizine
HG19	metoclopramide

Methodology

Recruitment

Details of the research were placed on the Pregnancy Sickness Support Charity's website. (www.pregnancysicknesssupport.org.uk).This is the only charity in the UK providing support for women who experience sickness during pregnancy. Women interested in taking part in the study were asked to contact the first author to arrange a recorded interview about their experience of nausea and vomiting in pregnancy. Once consent had been given, an interview was arranged.

Interviews

Interviews ranged in length from approximately 30 minutes to an hour and a half. All questions were open-ended and the participants were asked to describe their experience from the initial symptoms to seeking help.

Participants

A total of 19 women's accounts of seeking medical help in primary care for severe NVP or HG were analysed. Quotes in the analysis end with NVP or HG to indicate the participant's condition and a participant number from 1–19. All participants experienced vomiting to a degree that it impacted on their daily life functioning. Participants who had been hospitalised were classified as having HG. For further information about the participants' medication see Table 2.

Thematic analysis

Thematic analysis using sentence by sentence coding was conducted by the first author. A constant comparative analysis was used in which major themes were identified. This was followed by a re-focus on the differences within a category to identify sub-themes. Other authors were presented with the themes and gave feedback to the first author until there was an agreement on the coding of themes.

Findings

Communication was identified as the core theme. The women understood the importance of their ability to communicate, so much so that they felt a need to prepare for their NHS appointments. Their experience of how well their health care practitioner communicated with them had an emotional impact on the women and/or influenced their health-related behaviour such as delaying seeking further help. Closely related to the impact of the communication was the psychological impact on the women of taking the medication (see Figure 1).

Preparation for the appointment

The women in the study realised that NVP and HG are little understood because the exact cause is not known and there is no specific treatment. This led them to find out more information about their condition, which they brought to their appointments as if to protect themselves from invalidation.

Need to educate their healthcare professionals

The information sharing was done regretfully by most women as there was a sense that the health care professionals should be the medical experts

'*I had to educate myself so I can educate them.*'
(HG2)

'*You spend most of your time preparing for doctors' appointments, things like this* [shows a website print out], *in case they fob you off.*'
(HG6)

Need to validate the experience with evidence

Women who had experienced '*ineffective communication*', felt a need to validate what they were experiencing, almost in an attempt to convince their doctor of their worthiness as a patient. They did this in several ways: by giving printed out information they had found to their health professional; by taking a partner along; by taking objective data validated by another person, eg number of times vomited, to the appointment

'*I asked my husband to come along as I thought he may believe him.*'
(NVP19)

'*My husband counted the number of times I vomited for the GP.*'
(HG4)

Planning composure

The women in this study were aware of the psychogenic causal explanations of their condition. Therefore they made an effort to gather their composure before their appointment

'*I've had to fight very hard to try not to come across as a hysterical pregnant woman.*'

(HG16)

'*Mentally I feel like I've done a lot of somersaults to try to keep it together, to try to get the help that I need, and I don't think that that's something you'll find in any other medical case.*'

(HG2)

Awareness of the power dynamics

Understanding that their knowledge about their condition had potential power implications in the consultation was something that the women tried to manage to the point that some of them mentally rehearsed how they would present their research to their health care professional

'*You have to be careful not to come across as too much of a know it all. They don't like that.*'

(NVP3)

'*But you don't want to insult them by bringing a wad of paper and being like "Oh do you mind just having a glance over these notes please, I found this out about my sickness.*"'

(HG2)

Struggle to understand why advice is not forthcoming

Women who had already experienced a disappointing appointment found it a struggle to understand why their health care professional could not provide advice. This left them hesitant about returning even if they felt a need to return for further medical help

'*I just don't understand why advice is not forthcoming. I don't feel like going back.*'

(NVP1)

Communication

A striking theme dominating the interviews was the dissatisfaction with the communication during their appointments. Although some women did report that health care professionals were helpful.

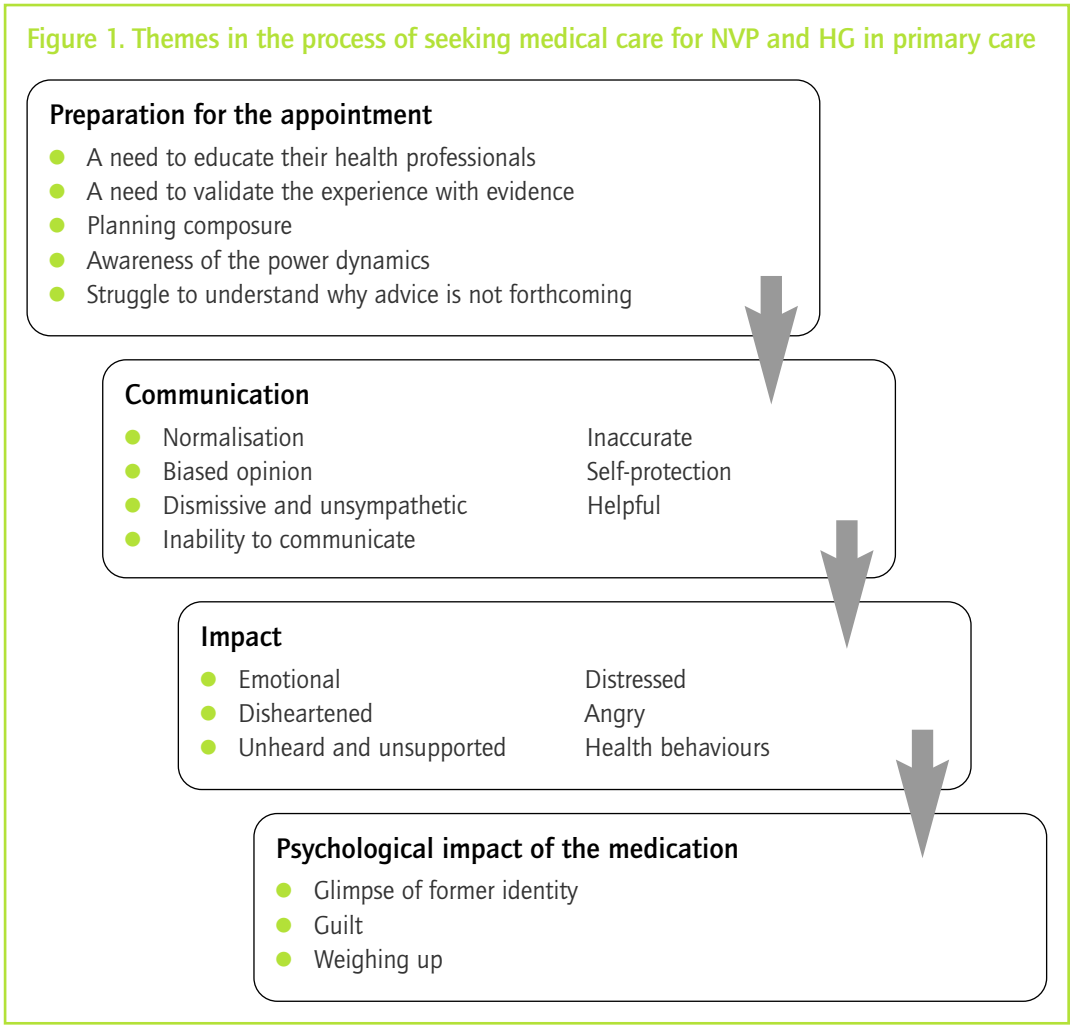
Normalisation

Most women found that normalising their experience did not help, although in some women there was recognition that the intention was to be helpful

'*I remember us just both crying because it was just horrible and trying to speak to the doctors or midwives, they were like, "Oh, yeah, that's normal.*"'

(HG2)

Figure 1. Themes in the process of seeking medical care for NVP and HG in primary care



Normalising their experience led to further feelings of isolation and frustration in the women with HG. The normalisation of their experience led to a sense of a struggle to obtain medication, with many women needing several appointments before being able to obtain medication despite being beyond 12 weeks pregnant.

Biased opinion

Equally, providing advice based on the health care professional's own experience was perceived as ineffective communication. One woman, when she requested a sick note, was told

'*I had it and managed to go to work*.'
(HG7)

Self-protection

Some women tried to understand their GP's position, thinking that there may be an element of self-protection and fear

'*My doctor was scared to try me on anything in case it harmed the baby*.'
(NVP15)

'"*Is there nothing you can give me to help me?" You know, I was really upset and he said "Oh no, look that got us into a mess in the 60s and 70s when we gave things out, you don't want that do you?*"'
(HG6)

Inaccurate

It appeared that some women received inaccurate information

'*One doctor said "You can't be ill because you're past 12 weeks now*.'"
(HG7)

Dismissive and unsympathetic

The communication style of health care practitioners was perceived as dismissive and unsympathetic by many women. Some women felt a judging attitude from their health care professional as if they were perceived to be wasting time

'*The midwives at my GP surgery were very un-accepting and dismissive, it would be brushed over and no notes taken*.'
(HG7)

'*I was told that HG is largely psychological and you know... I should be eating*.'
(HG6)

'*I said well "I'm not going to the loo, I'm not able to keep fluids down" and I said "Can I go on a drip please, because I've heard that it will really make me feel better," and he just laughed at me. But I've since found out that he should have done a ketone test and he didn't do any of that*.'
(HG16)

Helpful

Three women talked about the helpful communication and woman-centred attitudes that they had experienced: encouragement, attentiveness, being believed, clear and direct advice as well as being given informed choice were valued by the women

'*I remember sitting in the waiting room not being able to raise my head, leaning on my husband for support. I am lucky as my surgery were responsive, they gave me a quiet room and the minute they found I was pregnant they brought the doctor to me*.'
(HG10)

'*She basically just said "Don't try and go back to work, you just have got to rest and you've got to get it into your head that you're not going to be going to work for a bit*.'"
(NVP18)

Inability to communicate

Some women felt too ill to communicate effectively and this led to them not receiving the help they needed

'*I just didn't have the strength in me to say "I'm not being sick two or three times, I'm being sick 20 to 30 a day." That's not normal. When I'm not pregnant, I'm a strong person. I can advocate for myself, I know what I'm talking about and, I know what I want to do and I get it done. But I couldn't even speak the words; I was in too much of a mess. He took me off the medication and then sent me away with nothing*.'
(HG6)

Impact

Emotional

The perceived ineffective communication left women feeling

Disheartened
'*I felt let down and didn't know where to turn*.'
(HG7)

Unheard and unsupported
'*Basically I felt turned away from the inn, they can't help you*.'
(HG2)

Distressed
'*I came out feeling very upset*.'
(NVP15)

Angry
'*It actually makes you angry and so that was really annoying*.'
(HG6)

These feelings led to mistrust and a breakdown in the doctor-woman relationship. One woman summarised this

'*As far as GPs are concerned, I gave up when I went to one GP for more anti-emetics and he said I could be damaging the baby and prescribed Gaviscon*.'
(HG9)

Health behaviours

For some women their perception of ineffective communication led to a delay in them seeking help or taking the medication that they had received

'*I couldn't keep down even fluids but I didn't want to go back to my GP*.'
(NVP19)

'*I didn't take it* [medication] *for about three days, because the first doctor I went to said, this isn't licensed...she was like quite heavy-handed about the fact that I've got to take it at my own risk*.'
(NVP18)

For others however, they kept returning to the GP in the hope of being taken seriously

'*I was going at least once a week and just being told basic advice...I had to get to the point of dehydration to be heard*.'
(HG8)

Psychological impact of the medication

Glimpse of former identity

Taking the medication brought back a sense of their former identity that they had felt stripped of

'*When I started taking the medication and I had those four hours, it made me remember what it was like before*.'

(NVP3)

Guilt

However at the same time, for some there was a sense of guilt

'*I was told there was no guarantee that they* [medication] *wouldn't harm my baby. I battled with myself about taking tablets, I cried, I slept....I agreed to tablets. I lay on the bed rolling the tiny tablets between my fingers wondering if I was going to damage the tiny life inside me*.'

(HG14)

'*But not only did the doctor make me feel like a terrible person for considering taking it, but which then makes you not want to take it, because you think oh my god what am I going to be doing to the fetus*'

(NVP3)

Weighing up

Others were able to weigh up the pros and cons of taking the medication and make more of a decisive choice to take the medication

'*I was so worried about the effects it could have on the baby, but I was getting so ill in myself that I thought that I can't be doing the baby any good either. So taking the drugs were the lesser of the two evils*.'

(HG11)

Discussion

This paper provides particular examples of the communication needs of women with severe NVP and HG. This need includes responding appropriately with information about available treatments where needed. It has to be highlighted that the participants are self-selected and there may have been a bias towards women who had had a bad experience. Nonetheless the experience of these self-reporting women who have had a bad experience is of interest.

A strength of the study is that it has highlighted that there are still women who report inadequate health care and that clear guidance needs to be offered, geared to treating both the physical and psychological symptoms of the condition and providing appropriate support at a time of significant vulnerability.

It has been reported that patients who do not feel very well are likely to be unresponsive and irritable (Ong *et al* 1995). The women in this study went to their health care provider because they were experiencing severe nausea and/or vomiting, which certainly could have affected their ability to communicate effectively. This is reflected in the findings by Power *et al* (2010) where staff complained that women with this condition were uncommunicative. It was also suggested that this characteristic may reflect an underlying psychological problem. However, the inability to communicate appears to stem from the illness itself. It causes the women to feel '*wretched all the time*' (NVP3) and results in them being unable to advocate for themselves in a manner which would be normal for them.

It is unfortunate that most of the women interviewed had very negative experiences of seeking help with at least one health care professional. For many, the severity of their symptoms was questioned and resulted in the women feeling the need to prepare for the meeting with evidence of their symptoms (for example: number of times vomited) and verify that evidence (taking along a partner to corroborate their symptoms, and controlling their emotions so as not to appear '*hysterical*'). An unfortunate aspect of the condition is that many women appear to present with apparent personality and neurotic disorders (Power *et al* 2010), yet these manifestations are often the result of the debilitating effect of relentless nausea and vomiting (Seng *et al* 2007).

The majority of women in this study did receive the choice to take some form of antiemetic as recommended in Jarvis & Nelson-Piercy's (2011) review, although most women felt they had been delayed in receiving this treatment. As previously stated, early treatment is essential. The women in this study found that GPs remain reluctant to prescribe pharmacological treatment. This could stem from fear of harming the fetus or possibly fear of litigation should that circumstance arise. Although pharmacological treatment was eventually offered to most women, it was often accompanied with a stark warning to the mothers that they could be harming their unborn baby and it was their risk to take. This led to feelings of guilt.

The women reported feelings of anger and distress at the lack of empathy or care shown by some of the health care professionals that they encountered. This in turn influenced their willingness to seek further help. Research has shown that women having long-standing relationships with their GP reported those GPs as less likely to attribute the HG to their characteristics (eg sick and weakly) and abilities (eg poor coping with personal problems) (Munch & Schmitz 2006). Certainly, for some women in this study this was an issue — with some women seeing a different GP at each visit.

Practical implications

A fact sheet with information on the conditions with treatment options available and ideas for how the suffering woman's family can support her, as well as a link to the Pregnancy Sickness Support website, would save the women having to search for information, at a time when they are feeling so ill that even the bright screen of a computer could potentially worsen their symptoms.

The NICE guidelines for intrapartum care (NICE 2007) state that women and their families should always be treated with kindness, respect and dignity. This should be the starting point for guidelines in treating women with NVP/HG. According to the NHS Clinical Knowledge Summaries (2012) clinicians should '*Reassure the woman that nausea and vomiting are a normal part of pregnancy and that pregnancy outcomes are generally better for women who have nausea and vomiting in early pregnancy*'. However, for the women in this study normalising the experience was not helpful and made them feel as if their voice was simply not being heard, especially when the nausea and vomiting they experienced was relentless. The NICE guidelines need to be expanded to include advice on how to deal with the range of severity.

The NHS Clinical Knowledge Summaries (2012) offer advice on suitable pharmacological treatments for NVP/HG, including evidence of the safety of the various recommended drugs. Women should certainly have access to this so that they are able to make

informed decisions about their treatment and possibly feel reassured. Although the summaries emphasise the probable physiological aetiology of the condition, there is little guidance regarding the psychological support of the condition and they therefore warrant amendment.

In summary, this study provides some insight about possible ways of communicating with women with NVP and HG which may form the basis of new guidelines, as follows:

- Determine to what extent the pregnancy sickness is impacting on quality of life. Use a validated questionnaire such as the Health Related Quality of Life for Nausea and Vomiting During Pregnancy (NVPQOL) (Lacasse & Berard 2008).
- Offer information for women on HG/NVP in all booking-in packs so that they do not have to search for it themselves.
- Assume the woman has a valid experience worthy of being listened to.
- Ask women if a sick note is needed.
- Present the evidence about medication to allow informed choice.
- Neutrally explain any discomfort with prescribing medication.
- Direct women to the www.pregnancysicknesssupport.co.uk website so that they can seek further support.

These small steps towards improving communication with women with NVP/HG could help reduce distress and empower women to make an informed choice.

Dr Catherine Sykes is a senior lecturer at City University, London and a Pregnancy Sickness Support trustee. Catherine's research includes patient empowerment and health service redesign and improvement.

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Catherine is hosting a conference on Pregnancy Sickness on the 5th September in London: http://www.pregnancysicknesssupport.org.uk/get-involved/health-care-professional-conference/

References

Bashiri A, Neumann L, Maymon E *et al* (1995). Hyperemesis gravidarum: epidemiologic features, complications and outcome. *European Journal of Obstetrics, Gynecology and Reproductive Biology* 63(2):135-8.

Davis M (2004). Nausea and vomiting of pregnancy: an evidenced-based review. *Journal of Perinatal and Neonatal Nursing* 20(12):312-28.

Dilorio C, Van Lier D, Manteuffel B (1992). Patterns of nausea and vomiting during first trimester pregnancy. *Clinical Nursing Research* 1(2):127-40.

Ebrahimi N, Maltepe C, Einarson A (2010). Optimal management of nausea and vomiting of pregnancy. *International Journal of Womens Health* 2:241-8.

Fejzo MS, Poursharif B, Korst LM *et al* (2009). Symptoms and pregnancy outcomes associated with extreme weight loss among women with hyperemesis gravidarum. *Journal of Women's Health* 18(2):1981-7.

Gadsby R, Barnie-Adshead AM, Jagger CA (1993). A prospective study of nausea and vomiting during pregnancy. *British Journal of General Practice* 43(371):245-8.

Jarvis S, Nelson-Piercy C (2011). Management of nausea and vomiting in pregnancy. *BMJ* 342(7812):1407-12.

Kitamura T, Sugawara M, Sugawara K *et al* (1996). Psychosocial study of depression in early pregnancy. *British Journal of Psychiatry* 168(6):732-8.

Koren G, Levichek Z (2002). The teratogenicity of drugs for nausea and vomiting of pregnancy: perceived versus true risk. *American Journal of Obstetrics and Gynecology* 186(5)(Suppl):S248-52.

Kuşcu NK, Koyuncu F (2002). Hyperemeis gravidarum: current concepts and management. *Postgraduate Medical Journal* 78(916):76-9.

Lacasse A, Berard A (2008). Validation of the nausea and vomiting of pregnancy specific health related quality of life questionnaire. *Health and Quality of Life Outcomes* (9):6-32.

Lacroix R, Eason E, Melzack R (2000). Nausea and vomiting during pregnancy: a prospective study of its frequency, intensity, and patterns of change. *American Journal of Obstetrics and Gynecology* 182(4):931-7.

Lindseth G, Vari P (2005). Nausea and vomiting in late pregnancy. *Health Care for Women International* 26(5):372-86.

Louik C, Hernandez-Diaz S, Werler MM *et al* (2006). Nausea and vomiting in pregnancy: maternal characteristics and risk factors. *Paediatric and Perinatal Epidemiology* 20(4):270-8.

Meighan M, Wood AF (2005). The impact of hyperemesis gravidarum on maternal role assumption. *JOGNN: Journal of Obstetric, Gynecologic and Neonatal Nursing* 34(2):172-9.

Munch S (2000). A qualitative analysis of physician humanism: women's experiences with hyperemesis gravidarum. *Journal of Perinatology* 20(8 pt 1):540-7.

Munch S (2002). Women's experiences with a pregnancy complication: causal explanations of hyperemesis gravidarum. *Social Work in Health Care* 36(1):59-76.

Munch S, Schmitz MF (2006). Hyperemesis gravidarum and patient satisfaction: a path model of patients' perceptions of the patient-physician relationship. *Journal of Psychosomatic Obstetrics and Gynaecology* 27(1):49-57.

National Institute for Health and Clinical Excellence (2007). *Intrapartum care: care of healthy women and their babies during childbirth*. London: NICE. http://publications.nice.org.uk/intrapartum-care-cg55/woman—and-baby-centred-care [Accessed 5 June 2013].

NHS Clinical Knowledge Summaries (2012). http://www.cks.nhs.uk/nausea_vomiting_in_pregnancy/management/detailed_answers/view_all_detailed_answers#-325373 [Accessed 1 October 2012].

Ong LM, De Haes JC, Hoos AM *et al* (1995). Doctor-patient communication: a review of the literature. *Social Science and Medicine* 40(7):903-18.

Poursharif B, Korst LM, Fejzo MS *et al* (2008). The psychosocial burden of hyperemesis gravidarum. *Journal of Perinatology* 28(3):176-81.

Power Z, Thomson AM, Waterman H *et al* (2010). Understanding the stigma of hyperemesis gravidarum: qualitative findings from an action research study. *Birth* 37(3):237-44.

Seng JS, Schrot JA, van de Ven C *et al* (2007). Service use data analysis of pre-pregnancy psychiatric and somatic diagnoses in women with hyperemesis gravidarum. *Journal of Psychosomatic Obstetrics and Gynaecology* 28(4):209-17.

Sorensen HT, Nielsen GL, Christensen K *et al* (2000). Birth outcome following maternal use of metoclopramide.The Euromap Study Group. *British Journal of Clinical Pharmacology* 49(3):264-8.

Swallow BL, Lindow SW, Masson EA *et al* (2004). Psychological health in early pregnancy: relationship with nausea and vomiting. *Journal of Obstetrics and Gynaecology* 24(1):28-32.

Trogstad LIS, Stoltenberg C, Magnus P *et al* (2005). Recurrence risk in hyperemesis gravidarum. *BJOG: An International Journal of Obstetrics and Gynaecology* 112(12):1641-5.

Tsang IS, Katz VL, Wells SD (1996). Maternal and fetal outcomes in hyperemesis gravidarum. *International Journal of Gynecology and Obstetrics* 55(3):231-5.

Verberg MF, Gillott DJ, Al-Fardan N *et al* (2005). Hyperemesis gravidarum, a literature review. *Human Reproduction Update* 11(5):527-39.

Yerushalmy J, Milkovich L (1965). Evaluation of the teratogenic effect of meclizine in man. *American Journal of Obstetrics and Gynecology* 93(4):553-62.

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Editors' note:

An interesting paper by Sharon Moloney entitled '*Considering hyperemesis gravidarum as a spiritual condition: one woman's story of endurance*' will be published in the November edition of *Essentially MIDIRS*.