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Efficacy of a videoconferencing intervention compared with standard postnatal care at primary care health centres in Catalonia

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ABSTRACT

Objective: to evaluate the efficacy of an intervention combining videoconferencing and telephone contact compared to standard post partum care of recent mothers attending health centres in Catalonia were recorded.

Design: multicentre, randomised parallel controlled clinical trial.

Participants and setting: 1598 post partum women with Internet access attending eight 'Attention to Sexual and Reproductive Health' (Catalan acronym ASSIR) units at Primary Health Care centres, in Catalonia (Spain).

Intervention: at each of the eight ASSIR units, 100 women were randomly assigned to the intervention group (IG) and 100 to the control group (CG). Women in the IG could consult midwives by videoconference or telephone and could also receive standard care. Women in the control group received standard care from midwives at their health centres or at home.

Measures: number and type of visits, reasons for consultation, type of feeding at six weeks and women's satisfaction with the intervention on a scale of 1 to 5.

Findings: 1401 women were studied (80.9% of the initial sample), 683 in the IG and 718 in the CG. Two hundred and seventy-six women (40.4%) used videoconferencing or telephone in the IG. The mean total visits, virtual and face-to-face, was higher in IG women than in controls (2.74 versus 1.22). IG women made fewer visits to the health centre (mean=1) than CG women (mean=1.17). Both differences were statistically significant, with $p < 0.001$ and $p = 0.002$ respectively.

The prevalence of breast feeding was similar in the two groups (IG 64.5%, and CG 65.4%). The mean overall satisfaction of women with midwife care was very high in both groups (IG 4.77, CG 4.76).

Conclusions and implications for the practice: virtual care via videoconferencing is effective for post partum women. It reduces the number of health centre visits and allows mothers to consult health staff immediately and from their own home.

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Introduction

In Spain, the National Health System provides full maternity care. Almost all births take place in hospitals, and for most women childbirth is their first hospital contact (Institute for Health Information, 2012). The mean hospital stay for women with vaginal childbirth is 2.52 days (Organisation for Economic Co-operation and Development, 2011).

In the last 10 years there has been a tendency towards shortening hospital stay after childbirth. As a result, there is a higher risk of health problems once mothers return home. They are more likely to have concerns and specific questions regarding their own care and the care of the newborn (Ellberg, 2008), and may also suffer physical illness and mental health problems such as post partum depression (Ellberg, 2008).

In the primary care setting in Catalonia, the 'Attention to Sexual and Reproductive Health' programme (ASSIR) provides health care for women and couples in the following areas: antenatal education, antenatal care and diagnosis, post partum care, and the organisation of support groups for the postpartum period and lactation (Department of Planning and Evaluation, 2007). Midwives on the ASSIR programme are responsible for the care of pregnant women and new mothers of low and medium risk. Care is provided at the clinic or at home. The programme ends with the post partum check-up visit at six weeks (Department of Planning and Evaluation, 2007).

Between 1999 and 2008 the rise in the number of births in Catalonia (National Institute of Statistics, 2012), increased midwives' workload and made it difficult for them to visit mothers at the health centres or home during puerperium. The coverage of women in the puerperium at the health centres was 61% of the pregnant women and only 3.85% of all post partum women were seen in their homes (Coordination Unit of the Programme for the Attention of Sexual and Reproductive Health, 2010).

In recent years information and communication technologies (ICTs) have become fully integrated in everyday life. According to the Statistical Office of the European Communities (Eurostat), by 2011, 73% of European households had Internet access, 67% with broadband (European Union, 2011). In Spain, in 2009, over half of Spanish households (59.9%) had broadband Internet. The highest percentage of Internet users were college-educated women in the 25–34 year age group, the age at which most women give birth in this country (Urueña et al., 2011).

Several studies have been carried out during the postpartum period incorporating a 'phone hotline' in different countries. In Ontario (Canada), O'Connor et al. made a clinical trial for low-risk first-time mothers discharged from hospital after 48 hours. No differences were found between groups in health problems of infants or breast feeding rates at six months; however costs of home visits was higher than phone screening (O'Connor et al., 2003). In Lebanon, Osman et al. provided a phone hotline during 24 hours a day to the first-time mothers in the first four months post partum. Most questions were related to breast feeding and routine newborn care (Osman et al., 2010). In Queensland (Australia), Fallon et al. designed a hotline to support breast feeding mothers at a private hospital and at a public one. For women from the private hospital, the support service provided small but nevertheless significant increases in exclusive breast feeding duration. However, no effects were observed for mothers from the public hospital with lower resources (Fallon et al., 2005). The Department of Health of Taiwan sponsored a free hotline service for breast-feeding mothers. Perceived insufficient milk supply, returning to work and infants' body weight gain were the top reasons of the mothers' calls (Wang et al., 2008).

In Northern Ireland, Lazenbatt et al. conducted the first study of videoconferencing in post partum care using a qualitative methodology. These authors studied the feasibility of this medium in

two breast-feeding mothers, and recorded their satisfaction. The mothers used videoconferencing to obtain information and emotional support in stressful situations (Lazenbatt et al., 2001).

Some years later, in Sweden, Lindberg et al. conducted a study combining a quantitative and qualitative methodology of the feasibility of videoconferencing to support mothers discharged early from hospital and described the experience of nine new parents in the first week after birth (Lindberg et al., 2009). The findings indicated that videoconferencing may be helpful for parents discharged from hospital early after childbirth.

Two recent studies in the United States have focused on the use of videoconferencing in supporting breast-feeding mothers. Habibi et al. studied the maternal experience of lactation consultation by means of videoconferencing compared with standard face-to-face care using a qualitative methodology. Responses to the videoconferencing experience were positive, but preferred use of the technology was situational (Habibi et al., 2012). Rojjanasrirat et al. assessed in 10 mothers the reliability and feasibility of home videoconferencing for breast feeding assessment and support. Although mothers had overall positive perceptions of the videoconferencing for breast feeding support, the reliability of some LATCH components was not adequate in the first of two virtual visits (Rojjanasrirat et al., 2012).

In most cases the evidence available on telemedicine applications is insufficient to determine their effectiveness (Currell et al., 2008) or to compare them with face-to-face care (Mistiaen and Poot, 2008). Therefore, prior to any new e-health intervention an efficacy study should be conducted to compare it with standard methods of service delivery (Griffiths et al., 2006). For this reason, we decided to conduct a study to evaluate the efficacy of an intervention incorporating videoconferencing and telephone contact in post partum care and to compare it with standard care, by recording the number of visits and consultations, type of feeding, and the opinions of recent mothers attended at health centres in Catalonia.

This article presents some of the results of a broader study carried out as part of a doctoral thesis. Other results will be reported in future publications which will include mothers' reasons for consultation and the midwives' opinions regarding virtual care.

Methods

Design

Multicentre, randomised parallel controlled clinical trial.

Setting

'Attention to Sexual and Reproductive Health' (ASSIR) units in Primary Health Care centres in Catalonia (Spain), in primary care in eight regions of Catalonia (Spain), from November 2008 to December 2009.

Participants

The inclusion criteria of the participants were women receiving antenatal care and/or attending antenatal education groups at the health centres under study, Internet users with ADSL access at home, low or medium risk pregnancy, good understanding of Catalan or Spanish and the exclusion criteria was to have a twin pregnancy.

Sample size

For a power of 80%, and a confidence level of 95%, assuming a breast feeding rate at six weeks of 80% in the intervention group

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