



ORIGINAL ARTICLE

Nurses' experiences using conventional overhead phototherapy versus fibreoptic blankets for the treatment of neonatal hyperbilirubinemia



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KEYWORDS

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Abstract *Background:* In some neonatal intensive care units (NICUs), conventional overhead phototherapy is the only phototherapy available, whereas others use fibreoptic blankets only. Several NICUs use both treatments interchangeably. *Aim:* To explore how nurses experience the use of conventional versus fibreoptic phototherapy.

Method: Six qualitative in-depth interviews involving nurses at three different NICUs with experience in both treatments were conducted.

Results: Following experiences were revealed: i) Infants displayed discomfort while under phototherapy, whereas blanket use promoted infant satisfaction. ii) Blankets increased parents' satisfaction by facilitating bonding, breastfeeding and kangaroo care. iii) The nurses disagreed as to whether fibreoptic blankets and conventional treatment have similar effects. iv) Nurses were concerned about the possible harm and discomfort to the eyes and skin of infants caused by phototherapy.

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Conclusion: When the efficacy was considered sufficient, nurses preferred blankets compared with conventional overhead, because of ability to facilitate infant comfort and parent–child interaction.

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Introduction

Phototherapy is the use of visible light for the treatment of neonatal hyperbilirubinemia or jaundice. It is a major strategy for the prevention of bilirubin-induced brain damage and is considered a relatively harmless intervention (Wong et al., 2006). Many different devices are available, but there is no international standardized practice.

In conventional phototherapy, the infant is placed in a bed or incubator with a light-source placed 10–50 cm overhead. A new method that delivers light from a high-intensity lamp to a fibreoptic panel came into use around 1990 (Murphy and Oelrich, 1990). These devices take the form of beds, pads and blankets of different sizes and designs. Various studies have examined the efficacy of conventional versus fibreoptic devices, but the results vary widely because of differences in the light source and configuration (Bhutani, 2011; van Imhoff et al., 2013). Some studies have focused on phototherapy and maternal experiences but have not compared conventional versus fibreoptic phototherapy.

Phototherapy is frequently a difficult and emotionally stressful time for mothers (Brethauer and Carey, 2010; Hannon et al., 2001), and it can interfere with breastfeeding (Willis et al., 2002). Modern neonatal intensive care units (NICUs) emphasize the importance of the family, and 'family-centred care' (FCC) is considered the best approach for providing paediatric care (Shields et al., 2012). Szucs and Rosenman's (2013) case report focused on the challenge of providing effective phototherapy within the framework of FCC. A Cochrane review found that research into the possible advantages of fibreoptic over conventional phototherapy was required (Mills and Tudehope, 2001). In some NICUs, conventional overhead is still the only phototherapy treatment available, whereas others use fibreoptic blankets only. Several NICUs use both treatments interchangeably. There is a lack of studies concerning nurses' experiences using conventional versus fibreoptic phototherapy in the NICU.

Aim

The aim of this study was to explore how nurses experience the use of conventional versus fibreoptic phototherapy in neonatal care.

Method

A qualitative research design using individual semi-structured interviews was chosen (Malterud, 2012). The study was conducted in three Norwegian NICUs in October 2013: one regional and university hospital, and two district general hospitals. Two of the selected hospitals used both conventional and fibreoptic phototherapy. One hospital had stopped using conventional devices and used fibreoptic blankets only. Two nurses in each hospital were interviewed. The inclusion criteria were: (i) a minimum of two years' experience with phototherapy and (ii) experience with both conventional overhead and fibreoptic blanket phototherapy.

Each interview lasted about 45 min. The interviews followed a semi-structured interview guide with four main themes: experiences using conventional phototherapy, experiences using fibreoptic blankets, perceived advantages and disadvantages, and perceived differences between the methods.

The interviews were transcribed verbatim into 92 pages of transcript, and analysed by systematic text condensation (STC) as developed by Malterud (2011). STC is inspired by Giorgi's phenomenological method and includes four steps. 1) Obtain an overview of the data and identify preliminary themes. 2) Identify and code the meaning units relevant to the study question. 3) Condense and sort the content in each code group into subgroups. 4) Reconceptualise the data by synthesizing the content of the condensates and develop descriptions. This process resulted in nine pages of text, which were divided into four main categories.

Ethical considerations

The study protocol was approved by the Faculty Research Ethics Committee, the Norwegian Social Science Data Service and the hospitals' research

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