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AN INTERVENTION TO DISCOURAGE AUSTRALIAN MOTHERS FROM UNNECESSARILY EXPOSING THEIR BABIES TO THE SUN FOR THERAPEUTIC REASONS

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Summary:

Parents play a key role in children’s sun-protective behaviour, with good sun-protective habits established early tending to be sustained. We designed a maternity-hospital based educational intervention to reduce myths that could result in mothers intentionally sunning their babies. Interviews were conducted with two cross-sections of healthy post-partum inpatients in the maternity ward of a large regional public hospital. The first group (n=106) was recruited before the commencement of educational in-services for maternity nursing staff; the second group (n=203) was interviewed after the last staff in-service session. More pre-intervention than post-intervention women reported they would expose their baby to sunlight to: treat suspected jaundice (28.8% vs 13.3%; p<0.001) or help their baby’s skin adapt to sunlight (10.5% vs 2.5%; p=0.003). Fewer post-intervention women indicated they would sun themselves to treat breastfeeding associated sore/cracked nipples (7.6% vs 2%; p=0.026). This educational intervention should be used to educate parents, health professionals and students.

Key words: infants, perceived therapeutic benefits, sun-exposure, neonatal jaundice, nappy rash, post-partum women.
Introduction

Childhood is a critical period for reducing the lifetime risk of skin cancer, with an estimated two-thirds of melanoma cases resulting from excessive sun-exposure in the first 15 years of life.

Despite a substantial investment in skin cancer prevention, particularly in Australia, inappropriate beliefs about the perceived therapeutic benefits of sun-exposure still prevail. More than half the mothers of newborns in sunny Queensland (which has high skin cancer rates) favour deliberately sunning babies to treat jaundice, nappy rash and prevent rickets. Research suggests midwives and paediatricians are major sources of inappropriate advice about sun-exposure.

Here we report the effectiveness of a maternity-hospital based education program to discourage mothers from exposing themselves and their infants to sunlight for therapeutic reasons in an intense ultraviolet radiation environment (average UV index: September-March >10; April-August ≥6).
Methods

In 2002-3 midwives and nursing staff of maternity units of three public hospitals (1 intervention, 2 controls) in northern Queensland (Cairns 16°51’S; Townsville 19°16’S; Mackay 21°10’S) and post-partum in-patients from the intervention hospital, participated in the study (James Cook University Ethics Committee approval H1333).

Posters, bookmarks and brochures giving correct information about sun-exposure were developed for mothers\(^1\) (Figure). The development of the educational intervention and resources, which was informed by aspects of the Communication-Behaviour Change Model,\(^1\) has been described elsewhere.\(^1\) All intervention hospital maternity nursing staff were invited to attend an educational workshop and/or receive resources outlining risks of therapeutic sun-exposure. Appropriate treatment of ailments commonly encountered in infancy and the post-partum period were discussed. A resource package received by staff included: a detailed literature review; a one page fact sheet; and educational pamphlets (Figure) to use in discussions with parents. The posters, bookmarks and brochures were displayed in the ward and included in bedside reading materials, baby sample packs and maternal record books distributed to all women giving birth in the intervention hospital.

The investigators invited healthy post-partum inpatients in the intervention hospital to participate in a short semi-structured interview after providing written informed consent. The first cross-section (106 women) was recruited prior to staff in-service workshops commencing; the second cross-section (203 women) was recruited after the last scheduled workshop. Seven in-service workshops and 11 individual sessions were conducted; 86.8% staff attended.\(^1\)

Process evaluation of the workshops has been conducted previously.\(^1\) Here we assess the effectiveness of the program among post-partum inpatients of the intervention hospital. Statistical analysis was conducted using unpaired t-tests, Wilcoxon-Mann-Whitney-U tests, and approximate or exact Chi-square tests. Multivariable logistic regression analyses were conducted to determine independent predictors of mothers’ intentions to expose themselves or their babies to the sun.
Results

Pre- and post-intervention women (mean age 27.8±5.6 years, n=106; vs 27.0±5.7 years, n=203) were demographically similar except that fewer pre-intervention women had Caucasian ancestry (77.2% vs 84.4%; p=0.030). Of the 67 post-intervention women asked about the intervention materials displayed in the maternity ward of the intervention hospital, 71.6% reported seeing at least one of them.

More pre-intervention than post-intervention women reported they would “sun” their baby when asked what they would do if they suspected jaundice in their newborn (28.8% vs 13.3%; p<0.001), with a higher proportion of post-intervention than pre-intervention women (81.5% vs 46.7%) mentioning indirect/filtered sunlight. In a similar question, (possible responses agree/disagree/unsure), a higher proportion of pre-intervention than post-intervention women reported an intention to “sun” their child as treatment (28.6% vs 8.9%; p<0.001). This was confirmed by multivariable logistic regression analysis: POR=0.25, 95%CI [0.12, 0.52] p<0.001, adjusted for confounding effects of maternal skin colour and maternal education.

A higher proportion of women in the pre-intervention than post-intervention group considered it appropriate to intentionally expose their babies to help adapt their skin to sunlight (10.5% vs 2.5%; p=0.003). There was no significant change in the beliefs about “sunning” for the treatment of nappy rash (2.9% vs 2.0%; p=0.694) or to obtain adequate vitamin D (6.7% vs 4.4%; p=0.403) following the intervention. When asked about remedies for sore or cracked nipples due to breastfeeding, a higher proportion of pre-intervention than post-intervention women suggested sunlight for treatment (7.6% vs 2%; p=0.026), with a quarter of participants from each group mentioning indirect/filtered sunlight. In a related question (agree/disagree/unsure), more pre-intervention than post-intervention women considered sunlight a good remedy for cracked nipples (8.6% vs 3.4%; p=0.055). The change in the response for sunlight for treatment for acne was similar (8.6% vs 3.4%; p=0.055).
Treatment group did not predict mothers intentions to sun themselves or their babies to synthesize vitamin D (p=0.452) or treat nappy rash (p=0.281), and was borderline significant for treating acne (p=0.057) and sore/cracked nipples (p=0.059).
This unique educational pilot program achieved its aim of improving the quality of information available to post-partum women, with the intention of affecting their beliefs and behaviours about using sunlight to treat neonatal jaundice, cracked nipples, acne and adapting baby skin to the sun. This aspect of skin cancer prevention has not been addressed previously.

Targeting early childhood is important in primary skin cancer prevention. Excessive sun-exposure combined with inadequate sun-protection is common during childhood, resulting in 82% of Australian children experiencing a sunburn by age three. While some progress has been made in sun-protection of young Australian children, duration of sun-exposure did not decrease. Strategies to reduce melanoma risk, by curtailing development of melanocytic naevi, should begin in infancy.

Parents play a key role in their child’s sun-protective behaviour and those who use sun-protection themselves are more likely to protect their children. Thus education about repercussions of childhood sun-exposure should begin with the parents of neonates and be reinforced throughout childhood and adolescence. There are many skin cancer prevention strategies, yet little emphasis is placed on sun-protection in infancy or correction of myths about the perceived benefits of sun-exposure among either parents or health professionals. However, health professionals influence both parents and children, thus their professional education should promote appropriate beliefs.

This program could be used to educate: health professionals; parents in the pre-natal period and during infancy; and adapted for undergraduate and post-graduate curricula and in-service training for health professionals.
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References


Figure Legend:

Posters and a pamphlet produced for the educational intervention to discourage mothers from inappropriately intentionally sunning their babies.