"Just water for cleaning baby? A cross-sectional survey of the newborn skin cleansing practices of parents in the UK"

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Abstract

Globally, 5-30% of children have eczema; this could be partly attributable to skin cleansing routines. Evidence-based international guidance on this topic is lacking and dated national UK guidelines may not reflect best practice. We conducted a mixed method, UK-wide (England, Scotland, Northern Ireland and Wales) cross-sectional survey to investigate parental cleansing of their newborn's skin; 973 responses were suitable for inclusion. 60% of participants delayed first cleansing after birth for 48 hours and 79.4% of participants cleansed their newborn's nappy area with each change. Participants from Scotland were more likely to cleanse their newborn within the first 48 hours ($X_2^2 = 29.3$, $p < 0.001$) and then cleanse more frequently ($X_2^4 = 14.51$, $p < 0.006$) than those in England and Wales. 59.7% of participants used water alone for cleansing their newborn's body. Further research is needed into the appropriateness and effectiveness of parents' newborn skin cleansing practices and influences on their decision-making.

Key words (3-10): newborn, cleansing, skin, parents

Introduction

The World Allergy Organization (WAO) estimates that 5 -30% of the global paediatric population have eczema (WAO, 2018) and in the UK, one in five children under the age of five years have the condition (British Skin Foundation, 2019, British Association of Dermatologists, 2019).

Newborn skin undergoes significant development and maturation during the first year of life, during which time it is continually attempting to adjust to its environment (Chiou and Blume-

Peytavi, 2004, Nikolovski et al, 2008, Stamatas et al, 2010). The stratum corneum of the full term newborn's skin is significantly thinner than that of an adult which may explain the higher rate of transepidermal water loss (TEWL) of newborn skin when compared with adult skin (Nikolovski et al, 2008, Stamatas et al, 2010). Not only might this mean that newborn skin is more prone to dryness, but it also facilitates a greater permeability to some substances such as certain skin care products and body fluids which could in turn affect skin integrity (Hugill, 2015, Visscher et al, 2015, Cooke et al, 2018,). Skin cleansing regimes therefore may be linked to development of eczema although the evidence to support this is currently inferential (Prescott et al, 2017, Mutic et al, 2018, Cooke et al, 2018).

Inappropriate skin cleansing practices could also have a detrimental impact on the immature neonatal skin microbiome, which is increasingly recognised as a key factor in skin health (Prescott et al, 2017, Byrd et al, 2018). It has been reported that eczema sufferers have decreased microbial diversity in their skin, facilitating colonisation by harmful micro-organisms which cause inflammation and irritation (Prescott et al, 2017, Kim and Kim 2019, Paller et al, 2019).

Recent, evidence-based guidance on full term newborn skin cleansing is lacking. The World Health Organisation (WHO) provided basic guidance in 2013, and a European Roundtable Meeting on Best Practice Healthy Infant Skin Care (Blume-Peytavi et al, 2016) provided recommendations, but these have not been formally disseminated. Both sources suggest bathing be delayed until 24 hours post birth, but in order to prevent newborns becoming cold, rather than for skin health. Many parents, especially in low-income countries, disregard such advice as it directly contradicts cultural beliefs about the importance of cleanliness (Moran, 2009, Kayom et al 2015, Adejuyigbe et al, 2015).

Blume-Peytavi et al (2016) advise using water or 'appropriately designed' liquid cleansers and wipes. The National Institute for Health and Care Excellence (NICE) in the UK, advises the use of 'mild, non-perfumed soap' in addition to water, but 'only when needed' (NICE, 2015). In reality, parents worldwide use a variety of substances to cleanse newborn skin,

including salt, herbs and commercial products (Lavender, 2009, Kayom et al, 2015, Adejuyigbe et al, 2015, Khalifan et al, 2017). Indeed, research on newborn skin cleansing methods suggests that water alone may not be an effective skin cleanser, particularly for fat-soluble substances such as vomit and faeces (Lavender et al, 2009, Lavender et al, 2013, Gustin et al, 2020).

Further research into optimal newborn skin cleansing practices is required. However, it is also important to examine aspects of parental practice; this may inform identification of practices potentially contributing to atopic conditions such as lack of thorough cleansing of the skin of urine and faeces and the use of certain cleansing agents. The last study into skin cleansing practices in the UK was carried out over a decade ago, and focused on a small sample (n=26) of parents in a specific geographical location (Lavender et al, 2009). No large national or international studies of newborn skin cleansing practices have been undertaken to date. Therefore, we conducted a UK-wide cross-sectional survey to investigate how parents cleanse their newborn's skin, and the influences on these decisions. A review of the literature conducted prior to the commencement of this study indicated that newborn skin cleansing practices are deeply cultural, therefore in addition to giving an overview of parents' skin cleansing practices, we aimed to ascertain whether these practices differed across the culturally distinctive countries of the UK. In our investigation, 'cleanse' was defined as any procedure which cleaned the skin, for example wiping, washing, bathing and/or 'topping and tailing'. Reported cleansing regimes may pertain to practices occurring in a hospital or midwifery-led unit and/or at home. Healthy mothers and newborns are discharged home between 6 and 24 hours following birth in the UK. It is not standard practice for babies to be bathed prior to discharge, although support may be given with cleansing if parents request it. Parents are expected to provide their own cotton wool or wipes and any cleansing agents for use in hospital or a midwifery-led unit. Therefore, the cleansing practices reported in this study may pertain to practices occurring in a hospital or midwifery-led unit and/or at home.

Methods

Design

This study was a cross sectional survey using an online questionnaire posted on relevant UK social media sites during May and June 2020. Ethical approval was obtained from the researchers' employing university. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines (von Elm et al, 2008) were used in the design, implementation and reporting of this study.

Sample

We aimed to recruit participants from across the UK using snowball sampling. A target sample size of 200-1000 participants was set following a pragmatic approach outlined by Denscombe (2017). This approach, suitable for smaller-scale surveys such as this, considers the practical experience of the researcher and the resource constraints of the study when setting a minimum and maximum sample size. 200 was considered the minimum requirement to allow meaningful conclusions to be drawn while 1000 was considered the maximum to ensure ease of data management by the small study team. Recruitment was set for a maximum of 10 weeks or would halt sooner if the maximum sample size had been obtained. Any parent living in the UK and who had a baby under six weeks old was eligible to take part in this study. There was a requirement for participants to be able to understand English, as the questionnaire was written in English and it was requested that only one parent per infant completed the questionnaire.

Data collection tool

The data collection tool used was an online multiple-choice questionnaire (available upon request). This approach was selected as it was likely to be acceptable and straightforward to complete for new parents although a down-side of a multiple-choice approach is that the opportunity for responses to reflect the *"full richness and complexity"* of the views and experiences of the participants was lost (Denscombe, 2017, p.194). In order to mitigate this, a free text question was added to the end of the questionnaire: *"Is there anything else you want to tell us about cleansing your baby's skin?"*

Procedures

Following a review of the literature, and considering the aims of the study, topics for inclusion in the questionnaire were drafted. The questionnaire was then designed following a three-step piloting process: firstly, a discussion with a group of new parents who were aware of the study's aims to inform initial question development, secondly, a trial of the questionnaire in paper format with a different group of parents, and finally a trial of the online questionnaire.

An introduction and link to the final questionnaire, hosted on the survey platform Qualtrics QM (Qualtrics, Provo, UT), was posted on local and then national FaceBook parenting groups and a statement added to encourage snowball sampling. Consideration was given to the perceived diversity of the membership of each national FaceBook group to try to ensure a full range of potential practices would be reflected. Attempts were also made to promote inclusivity by approaching FaceBook groups specifically for, or used by, parents from black and minority ethnic (BAME) groups.

Data analysis

All data were initially collected on Qualtrics, and then exported to Excel (2019 16.0) and SPSS (version 2.6; IBM, Armonk, NY, USA) for analysis. An analysis plan was devised *a priori* to address the key questions in the study: how do parents in the UK cleanse their newborn's skin, and does the area of the UK in which a parent resides affect the skin cleansing practices adopted? Accordingly, the focus of the data analysis was determined to be on the provision of an overview of newborn skin cleansing practices in the UK and whether or not there were any differences in parental practices between the three included countries (England, Scotland and Wales). Quantitative data were first presented descriptively. As all data were categorical, these data are presented as absolute number and percentage.

When comparing practices between the countries of the UK (England, Scotland and Wales), we aimed to compare clinically relevant time points or cleansing practices based on currently available guidance or research evidence. We therefore aimed to compare cleansing within the first 24 hours from birth with cleansing after this period, as the clinically most relevant time point (Darmstadt and Dinulos, 2000). However, the sample size did not support this, so the timeframe was moved to 48 hours after birth; still a meaningful time period to discover whether participants were delaying the initial cleansing of their newborn. Chi-squared tests were performed using the cross-tabs procedure in SPSS, with significance set at $p < 0.05$. If a record contained missing data, the entire record was excluded from the analysis. Data from Northern Ireland were excluded from analyses due to a small sample size from this country (n=22).

Qualitative data obtained from the free text question of the questionnaire were analysed using Braun and Clarke's guide to thematic analysis (Braun and Clark, 2006): data were read and reread independently by the first and third authors and preliminary codes were identified. Any differences were resolved through discussion and interrogation of the data. Similar codes were then amalgamated, and patterns and themes identified for reporting were

agreed through discussion and consensus between authors one and three. Themes identified aligned to the areas covered in the rest of the questionnaire: timing of first cleansing after birth, frequency of cleansing and substances used for cleansing. Therefore, quantitative and qualitative findings are presented simultaneously under the subheadings in the results section.

Results

989 survey responses were received, 973 of which were suitable for inclusion (figure 1):

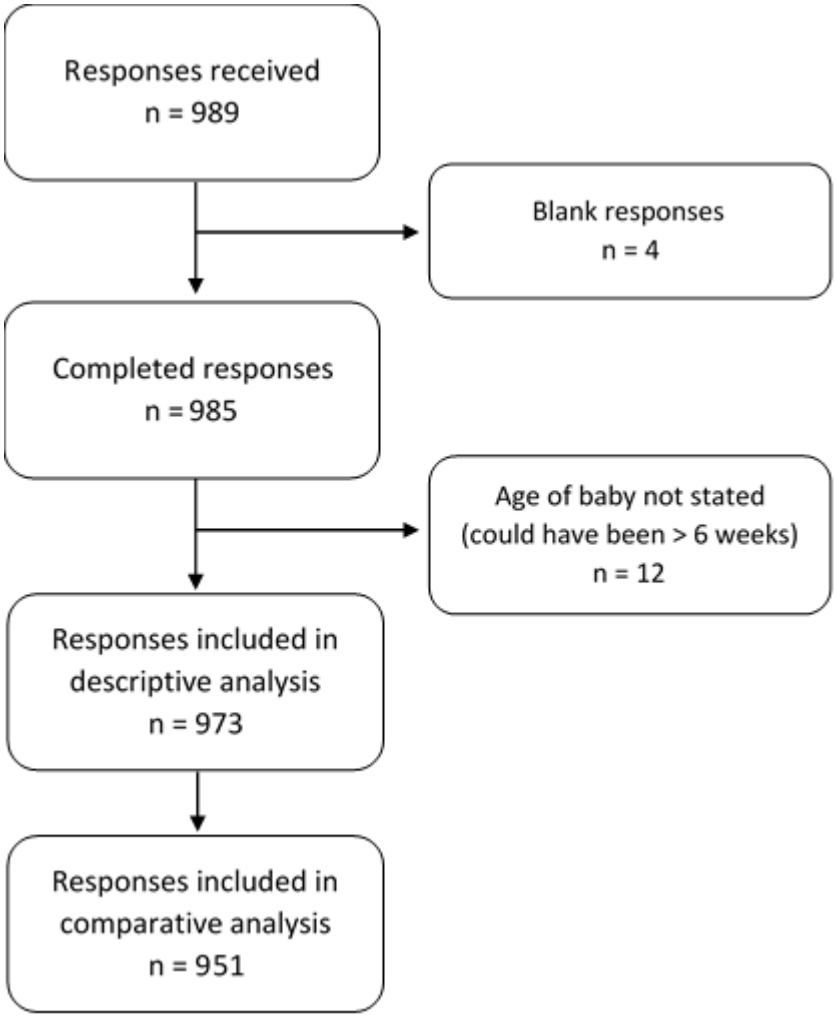

Figure 1: Participant flow diagram

General demographics of the sampled population

Table 1 summarises the demographic characteristics of the sampled population. The sample included participants from each area of the UK, although the greatest number of participants were from South East England (n=183, 18.8%). Over half the participants were aged 31 to 40 years old (n=525, 54%) and, for just over half the participants, it was not their first baby (n=550, 56.8%). Despite attempts to include participants from BAME backgrounds, the majority of participants (n= 919, 94.5%) described their ethnicity as 'white'. The most frequently given household income brackets were between £21000 and £40000 (n=292, 30.1%) and £41000 and £50000 (n=294, 30.3%) and almost three quarters (n=696, 71.5%) of participants' babies were aged 4 weeks 1 day - 6 weeks. The majority of the participants' babies were born in hospital (n=775, 79.8%) with a minority being born at home (n=64, 6.6%) or a midwifery-led unit (unit providing midwifery care only, no medical care, either on the site of a hospital which provides obstetric care or completely freestanding) (n=132, 13.6%).

Table 1: Demographic characteristics of the sampled population

Demographic measured	**Responses**	**%**
Country of UK in which currently reside: **(n = 973)**		
England	798	82.0
Scotland	100	10.3
Wales	53	5.4
Northern Ireland	22	2.3
For those who reside in England, region in which currently reside: **(n = 798)**		
South East	183	18.8
South West	131	13.5
West Midlands	91	9.4
North West	86	8.8
Yorkshire and the Humber	85	8.7
East Midlands	71	7.3
Greater London	55	5.7
East Anglia	55	5.7
North East	41	4.2
Which age group are you in? **(n = 972)**		
Under 20	3	0.3
21-30	429	44.1
31-40	525	54
41 and over	15	1.5
Is this your first baby? **(n = 968)**		
Yes	418	43.2
No	550	56.8
How would you describe your ethnicity? **(n = 973)**		
White (English, Irish, Welsh, Scottish, Gypsy, other white)	919	94.5
Mixed or multiple ethnic groups	26	2.7
Asian (Indian, Pakistani, Bangladeshi, Chinese, other Asian)	17	1.75
Black (African, Caribbean, other black)	4	0.4
Other[1]	7	0.7
What was your annual household income last year (2018-19)? (n = 970)		
Under £20,000	148	15.3
Between £21,000 and £40,000	292	30.1
Between £41,000 and £60,000	294	30.3
Between £61,000 and £80,000	129	13.3
Over £81,000	107	11.0
How old is your baby? **(n = 973)**		
0-7 days	64	6.6
8-13 days	61	6.3
2 weeks 0 days - 4 weeks 0 days	152	15.6
4 weeks 1 day - 6 weeks 0 days	696	71.5
Where was your baby born? **(n=971)**		
Midwifery-led Unit	132	13.6

Home	64	6.6
Hospital	775	79.8

1 Other = 5 white European, 2 Hispanic/Latina

How do parents in the UK cleanse their newborn's skin?

Timing of first cleansing and frequency of cleansing

Over half of the participants (n=584, 60%) did not cleanse their baby until 48 hours or more following birth (table 2). Participants also favoured less frequent cleansing, with around one third (n=304, 33.5%) cleansing their baby 3 or 4 times per week and just over a third (n=319, 35.1%) 2 or fewer times per week. Conversely, frequent nappy area cleansing was the norm, with over three quarters (n=771, 79.4%) of participants cleansing with every nappy change (table 2).

Table 2: Timing of first cleansing and frequency of cleansing

Question and response options	**Responses No (%)**
How soon after your baby's birth did you first cleanse his or her skin, **not** including the nappy area? **(n=972)**	
Within the first hour	13 (1.3)
Within the first 6 hours	33 (3.4)
Within the first 24 hours	94 (9.7)
Between 24 and 48 hours	168 (17.3)
After 48 hours	584 (60.0)
I have not yet cleansed my baby's skin	80 (8.2)
How often do you usually cleanse your baby's body, **not** including the nappy area? **(n=908)**	
More than once per day	15 (1.7)
Once per day	214 (23.6)
5 or 6 times per week	56 (6.2)
3 or 4 times per week	304 (33.5)
2 or fewer times per week	319 (35.1)
Which of the following statements best describes how often you usually cleanse your baby's nappy area: **(n=971)**	
Every nappy change	771 (79.4)
Every dirty nappy change	106 (10.9)
Most nappy changes (over half the times)	69 (7.1)
Some nappy changes (fewer than half the times)	12 (1.2)
Whenever the rest of the baby's body is cleansed	13 (1.3)

Qualitative findings arising from analysis of the free text question suggested that participants were confident that delaying cleansing after birth was optimal for newborn skin; a desire not to remove the vernix was a popular rationale for this delay as it was seen as a protective factor for newborn skin. Participants expressed beliefs that babies should not be cleansed frequently, feeling that frequent cleansing was either unnecessary or even harmful.

Substances used for cleansing and parental confidence in cleansing routines

Over half of the participants (n=538, 59.7%) used water alone to cleanse the non-nappy area and just over a third (n=321, 35.6%) used more than one substance for cleansing (table

3). Nappy area cleansing was different, with just over a third of the participants (n=335, 34.4%) using water alone and a similar number using baby wipes alone (n=339, 34.9%, table 3). Information about the type of baby wipe used was given by 471 participants. The most frequently cited wipe was a ‘water wipe’ (a commercial wipe containing predominantly water without additional chemical additives), with 140 (30%) claiming this as their preference.

Over half of the participants (n=626, 64.4%) felt ‘very confident’ that the cleansing routines they used with their baby were the most appropriate. One parent out of the 972 who answered this question felt uncomfortable about their choice of cleansing routine.

Table 3: Substances used for cleansing, and parental confidence in cleansing routines

Question and response options	Responses No (%)
Please indicate which of the following substances you use for cleansing your baby's skin, not including the nappy area **(n=903)**	
Just water	538 (59.7)
Soap	26 (2.9)
Body wash liquid	18 (2.0)
Baby wash liquid	211 (23.4)
Baby lotion	57 (6.3)
Baby wipes 1	148 (16.4)
Other[2]	49
More than one substance used[3]	321 (35.6)
Please indicate which of the following substances you use for cleansing your baby's nappy area during nappy changes **(n=973)**	
Just water	335 (34.4)
Just baby wipes 1	339 (34.9)
Soap	5 (0.5)
Body wash liquid	5 (0.5)
Baby wash liquid	23 (2.4)
Baby lotion	9 (0.9)
Other[4]	120 (12.3)
More than one substance used[3]	279 (28.7)
Which statement best describes how confident you are that the cleansing routines you use are the most appropriate for your baby? **(n=972)**	
Very confident	626 (64.4)
Quite confident	309 (31.8)
Unsure	36 (3.7)
Uncomfortable	1 (0.1)

1 Baby wipes: 'Water wipes' were the most frequently cited type of baby wipe – by 50 out of the 130 participants who stated the wipes used (non-nappy area) and 140 out of the 471 participants who stated the wipes used (nappy area)

2 Other: 23 of the participants who selected 'other' provided more information. Most frequently occurring responses: 9 cited using reusable cloth baby wipes, 5 cited using an oil such as coconut oil.

3 Participants could select any or all substances as relevant. This shows how many participants chose more than one response. Water was included as a substance.

4 Other: 120 participants stated what 'other' was. Most frequently occurring response was reusable baby wipes with 65 citing using these. Another frequently occurring response was an oil such as coconut oil with 34 participants citing using these.

Qualitative findings arising from analysis of the free text question suggested that using water alone for cleansing or using substances/products perceived to be 'natural' seemed popular, although no information was provided about whether these substances resulted in effective cleansing.

Does the area of the UK in which a parent resides affect skin cleansing practices adopted?

Timing of first cleansing

Participants from the three included countries of the UK differed in their timing of first cleansing after birth (X_2^2 = 29.3, p < 0.001, Table 4). In total, 72.2% of participants in England (n = 576) delayed the first cleansing of their baby until after 48 hours of age, rather than within 48 hours, compared to 47.0% of participants in Scotland (n = 47) and 58.5% in Wales (n = 31, table 4).

Frequency of cleansing

Participants from the three included countries of the UK differed in the frequency of cleansing the non-nappy area of their baby (X_2^4 = 14.51, p < 0.006, table 4). In total, 35.9% of participants in England (n = 267) and 44.0% of participants in Wales (n = 22) cleansed the non-nappy area 2 or fewer times per week, compared to 21.0% of participants in Scotland (n

= 20, table 4). The opposite was seen for cleansing 5 or more times per week, with 46.3% (n = 44) of Scottish participants reporting this regime, compared to 30.1% (n = 224) of English and 30.0% (n = 15) of Welsh participants (table 4).

The majority of participants cleansed their baby's nappy area at each change, and there were no between-country differences detected in this (X_2^2 = 4.6, p = 0.10).

Table 4: Comparison of timing and frequency of cleansing across areas of the UK

	England		Scotland		Wales		Chi-square	P-value
	Resp	**%**	Resp	**%**	Resp	%		
Comparison of when skin was first cleansed across areas of the UK								
Within first 48hrs.	221	27.7	53	53	22	41.5		
After first 48 hrs.	576	72.2	47	47	31	58.5	X_2 = 29.3	p < 0.001
Comparison of frequency of cleansing of baby's nappy area across areas of the UK								
Every nappy change	629	78.8	86	86.9	39	73.6		
Less than every nappy change	168	21.2	13	13.1	14	26.4	X_2 =4.6	P = 0.101
Comparison of frequency of cleansing of baby (not including the nappy area) across areas of UK								
5 or more times/week	224	30.1	44	46.3	15	30.0		
3 or 4 times/week	252	33.9	31	32.6	13	26.0		
2 or fewer times/week	267	35.9	20	21.2	22	44.0	X_2 =14.51	P = 0.006

Substances used for cleansing

There were no between-country differences when comparing use of the various substances for cleansing the nappy area (X_2^4 = 1.33, p = 0.86, table 5). Approximately one third of parents in England (n=271, 34%), Scotland (n=39, 39%) and Wales (n=17, 32.1%) used just water for cleansing, one third used just baby wipes (n=279, 35%, n=31, 31% and n=18, 34% respectively) and one third used another substance (n=248, 31.1%, n=30, 30% and n=18, 34% respectively).

There were no between-country differences when comparing the use of substances for cleansing the baby's non-nappy area ($X_2^2 = 2.8$, p = 0.25, table 5).

Table 5: Comparison of substances used for cleansing across the UK

	England		Scotland		Wales		Chi-square	P-value
	Resp	**%**	Resp	**%**	Resp	%		
Comparison of cleansing substances used for nappy area across areas of the UK								
Just water	271	34.0	39	39.0	17	32.1		
Just baby wipes	279	35.0	31	31.0	18	34.0		
Other[1]	248	31.1	30	30.0	18	34.0	$X_2 = 1.33$	0.856
Comparison of substances used for cleansing (not including the nappy area) across areas of UK								
Just water	440	59.6	61	64.2	25	50.0		
Not just water[2]	298	40.4	34	35.8	25	50.0	$X_2 = 2.8$	0.253

1 Could include soap, baby wash, body wash and baby lotion

2 Could also include body wash liquid, baby wash liquid, soap, baby lotion, baby wipes and/or 'other'

Discussion

Summary of findings

This is the first UK-wide survey to investigate newborn skin cleansing practices of parents. The findings demonstrate that over half the participants delayed the first cleansing after birth for at least 48 hours, although there were between-country differences. Approximately two thirds of participants cleansed their newborn 3 or 4 times per week or less, although again there were between-country differences. Over half the participants used water alone for cleansing their newborn's body. Just over three quarters of participants cleansed their newborn's nappy area with each change.

Initial cleansing and frequency of cleansing

Some of the practices of UK parents align with what is generally considered best practice, for example delaying initial skin cleansing until after the first 24 hours or not before the newborn's temperature has stabilised (WHO 2013, Blume-Peytavi et al 2016, Scanlan 2018). There is no research evidence on the optimal frequency of cleansing the newborn's body, with differing expert opinions on the matter (Blume-Peytavi et al, 2016, Scanlan, 2018). There is also no evidence on optimal frequency of nappy area cleansing, although expert opinions support nappy area cleansing with each change (Blume WHO, 2013, Peytavi et al, 2016, Scanlan, 2018) reflecting the practice of most UK parents. UK guidance (NICE, 2015) does not include advice on any of these practices.

Our findings showed some differences in frequency of cleansing within the three included countries of the UK. This may reflect the lack of available evidence and consistent expert opinion available on the subject and could suggest that factors such as traditional practice and culture, including that of the healthcare professionals who advise parents, are an influence on parental behaviour.

Despite a lack of research, current understanding of the anatomy of newborn skin and significance of the development of the microbiome may support participants' practices described above. Delaying initial cleansing may promote development of the microbiome, allowing microorganisms obtained from the mother during birth and early skin to skin contact to remain on the skin (Visscher et al, 2005, Walker et al, 2008). Participants' rationales align with this thinking; including a desire not to remove the vernix as it was seen as a protective factor for newborn skin. Subsequent infrequent cleansing may also assist microbiome development and prevention of damage to the vulnerable skin barrier. Studies on adults suggest that bathing may remove 'natural moisturising factor' from the skin (Visscher et al, 2003, Robinson et al, 2010). It is possible that this may also occur in newborns, which would also further support infrequent bathing to prevent skin dryness. However, it is also important to ensure bodily fluids are effectively removed (Cooke et al, 2011, Cooke et al, 2018). This

would further support cleansing the nappy area with each change. Frequent cleansing of other areas of the baby's body if needed in order to remove substances such as milk or vomit is also likely to be appropriate, but in our study qualitative findings suggested that parents believed that frequent cleansing is unnecessary and even harmful to newborn skin.

Substances for cleansing

The majority of participants used just water to cleanse the body, motivated by a belief that using anything other than water was either unnecessary or potentially harmful. Current national guidelines (NICE 2015) support this although advise the use of, where it is needed, *"a mild, non-perfumed soap"* in addition to water. Research supports the use of specific liquid cleansers - not soap - in addition to water, in terms of their safety for newborn skin (Dizon et al 2010, Garcia-Bartels 2010, 2012, Lavender et al 2012, 2013), as do the recommendations of Blume-Peytavi et al (2016). The effectiveness of either water alone, or water in combination with a cleansing product, in cleansing the skin has not been researched. However, there has been concern expressed amongst parents and researchers that water alone may not be effective in removing fat soluble substances from newborn skin which can then cause irritation and damage (Lavender et al, 2009, Lavender et al, 2013, Blume-Peytavi et al, 2016). Therefore, the majority of participants in this study may not have been caring for their baby's skin optimally by using just water for cleansing the body.

The use of baby wipes for cleansing the nappy area - a practice cited as frequently as the use of just water in our study - may be better supported by evidence. Research by Garcia-Bartels et al (2012) and Lavender et al (2012) found that specific brands of baby wipes were just as safe for newborn skin as water alone, and the use of 'specially designed wipes' is supported by recommendations by Blume-Peytavi et al (2016) and Scanlan (2018). NICE guidance (2015) does not provide any advice regarding nappy area cleansing, and the research above is focused on the safety, not the effectiveness, of either wipes or water alone

to cleanse the skin of potential irritants. Participants in our study demonstrated a preference for water-based wipes, but the exact ingredients of the wipes used by the participants, or the wipes used in the above-mentioned studies, are not known.

Participants were confident that the skin cleansing routines they were using with their newborns were appropriate. Previous research by Lavender (2009) indicated that parents could be uncertain, particularly with the use of water alone for cleansing, suggesting that confidence with cleansing routines appears to have increased over the last decade. The current level of confidence could pose a challenge, if parental cleansing routines do not align with evidence-based optimal practices then encouraging change may need careful consideration.

Comparison with international research

In contrast to newborn skin cleansing practices in the UK, in parts of Africa, India and Bangladesh, bathing within the first hours after birth is the norm, although frequency of subsequent cleansing is similarly varied (Pati et al, 2014, Adejuyigbe et al, 2015, Kayom et al, 2015). Removal of vernix and regular cleansing is considered important to keep the baby clean and 'socially acceptable' (Pati et al, 2014, Adejuyigbe et al, 2015, Kayom et al, 2015). The contrast is likely to be partly due to differences in cultures and belief systems between the research populations in different countries. These beliefs are often aligned with culturally held norms around cleanliness and protecting vulnerable newborns (Pati et al, 2014, Adejuyigbe et al, 2015, Kayom et al, 2015).

In parts of Africa, India and Bangladesh, a variety of substances including herbs, salt and Dettol are used, in addition to, or as an alternative for, water for cleansing (Adejuyigbe et al, 2015, Kayom et al, 2015). Again, the use of these substances appears to reflect the cultural

and traditional practices of the local area in relation to care of the newborn, and parents were confident in their use and unlikely to question them.

Strengths

This is the first UK-wide survey to investigate newborn skin cleansing practices of parents, with participants from a range of backgrounds and from all countries of mainland UK. The eligibility requirement of being a parent to a newborn under six weeks increased the likelihood of participants remembering aspects of early newborn cleansing practices, reducing the risk of recall bias.

Limitations

A limitation of this study is the fact that it involved anonymous participants recruited online. Therefore, it was not possible to verify whether the participants did indeed fit the study's inclusion criteria although questions at the start of the questionnaire asked them to confirm each eligibility criteria. Further, despite efforts to recruit participants from a variety of ethnicities, the lack of ethnic variety in this study's sample means that the findings may not be transferable to BAME populations. Most participants' newborns were in the oldest age category, which means that some of the findings may not be transferable to a population of parents with younger newborns. The low number of participants from Northern Ireland means that the findings may not be relevant to parents there.

Conclusion and implications

This study gives valuable insight into current newborn skin cleansing practices. Findings showed that some newborn skin cleansing practices in the UK broadly align with current national guidelines, although these are increasingly considered not to reflect best practice in

relation to skin cleansing. Differences in practice with regards to timing of the initial cleansing after birth and subsequent frequency of cleansing between the countries in the UK could reflect the fact that there is little national guidance around these issues, or that there are other, stronger, influences on parental behaviour. Further research is now needed to establish the appropriateness and effectiveness of parents' newborn skin cleansing practices. This would include research into the effectiveness of water and water together with certain skin cleansing products to cleanse newborn skin of body fluids, the comparison of different cleansing regimes on newborn skin health, the effects of the timing of initial cleansing after birth and subsequent frequency of cleansing on skin health and the development of eczema as well as research which explores who or what is influencing decision-making with respect to newborn skin cleansing. Given the high degree of parental confidence in their newborn skin cleansing practices, encouraging any changes to cleansing regimes may need careful consideration.

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