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## Australian, Irish and Swedish women's perceptions of what assisted them to breastfeed for six months: exploratory design using critical incident technique --Manuscript Draft--

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<b>Funding Information:</b>	Curtin University of Technology (School Development Grant)	Professor of Midwifery Yvonne Hauck
<b>Abstract:</b>	<p><b>Background:</b> Breastfeeding initiation rates in some developed countries are high (98% in Sweden and 96% in Australia) whereas in others, they are not as favourable (46% to 55% in Ireland). Although the World Health Organization recommends exclusively breastfeeding for six months, 15% of Australian women, 11% of Swedish women and less than 7% of Irish women achieve this goal. Awareness of what women in different countries perceive as essential breastfeeding support is a gap in our knowledge.</p> <p><b>Methods:</b> Our aim was to explore Australian, Irish and Swedish women's perceptions of what assisted them to continue breastfeeding for six months. An exploratory design using critical incident techniques was used. Recruitment occurred through advertisements in local newspapers and on social networking platforms. Initial sampling was purposive, followed by snowball sampling. Telephone interviews were conducted with 64 Irish, 139 Swedish and 153 Australian women who responded to one question "what has assisted you to continue breastfeeding for at least six months?" Content analysis was conducted and common categories determined to allow comparison of frequencies and priority ranking.</p> <p><b>Results:</b> Categories reflected the individual mother, her inner social network, her outer social network (informal support either face to face or online), and societal support (health professionals, work environment and breastfeeding being regarded as the cultural norm). Categories ranked in the top five across the three countries were 'informal face to face support' and 'maternal determination'. Swedish and Australian women ranked "health professional support" higher (first and third respectively) than Irish women who ranked 'informal online support' as second compared to ninth and tenth for Swedish and Australian women.</p> <p><b>Conclusions:</b> The support required to assist breastfeeding women is complex and multi-faceted. Although common international categories were revealed, the ranking of these supportive categories varied. We must recognize how the cultural context of breastfeeding support can vary for women in differing countries and acknowledge the resourcefulness of women who embrace innovations such as social media where face to face formal and informal support are not as accessible.</p>	
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	<p>Jane Scott Professor, Curtin University School of Public Health</p> <p>Jane Scott is a colleague and we are currently working together on another project</p>



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25 June 2016

Editor in Chief,  
Professor Naoki Kondo  
Section: Health Behaviour, Health Promotion and Society  
BMC Public Health

Dear Professor Kondo,

We would like to submit our manuscript for review and possible publication in *BMC Public Health*. The title of our manuscript is: **Australian, Irish and Swedish women's perceptions of what assisted them to breastfeed for six months: exploratory design using critical incident technique**. As first author I declare on behalf of all international authors of this manuscript we have no conflict of interest such as financial or otherwise relating to this submission.

Thank you for your attention. We look forward to hearing the outcome of the review process.

Sincerely yours,

A handwritten signature in cursive script that reads "Yvonne Hauck".

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41 **PROJECT TITLE:** Australian, Irish and Swedish women's perceptions of what assisted them  
42 to breastfeed for six months: exploratory design using critical incident technique

43 **ABSTRACT**

44 **Background:** Breastfeeding initiation rates in some developed countries are high (98% in  
45 Sweden and 96% in Australia) whereas in others, they are not as favourable (46% to 55% in  
46 Ireland). Although the World Health Organization recommends exclusively breastfeeding for six  
47 months, 15% of Australian women, 11% of Swedish women and less than 7% of Irish women  
48 achieve this goal. Awareness of what women in different countries perceive as essential  
49 breastfeeding support is a gap in our knowledge.

50 **Methods:** Our aim was to explore Australian, Irish and Swedish women's perceptions of what  
51 assisted them to continue breastfeeding for six months. An exploratory design using critical

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incident techniques was used. Recruitment occurred through advertisements in local newspapers and on social networking platforms. Initial sampling was purposive, followed by snowball sampling. Telephone interviews were conducted with 64 Irish, 139 Swedish and 153 Australian women who responded to one question “what has assisted you to continue breastfeeding for at least six months?” Content analysis was conducted and common categories determined to allow comparison of frequencies and priority ranking.

**Results:** Categories reflected the individual mother, her inner social network, her outer social network (informal support either face to face or online), and societal support (health professionals, work environment and breastfeeding being regarded as the cultural norm). Categories ranked in the top five across the three countries were ‘informal face to face support’ and ‘maternal determination’. Swedish and Australian women ranked “health professional support” higher (first and third respectively) than Irish women who ranked ‘informal online support’ as second compared to ninth and tenth for Swedish and Australian women.

**Conclusions:** The support required to assist breastfeeding women is complex and multi-faceted. Although common international categories were revealed, the ranking of these supportive categories varied. We must recognize how the cultural context of breastfeeding support can vary for women in differing countries and acknowledge the resourcefulness of women who embrace innovations such as social media where face to face formal and informal support are not as accessible.

**KEY WORDS:** breastfeeding, prevalence, international, social support, professional support, self-efficacy

## **BACKGROUND**

76 Evidence from a systematic review confirmed the health benefits of breast milk, further  
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2 77 supporting optimal duration for exclusive breastfeeding continuing to six months [1]. However,  
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4 78 37% of infants less than six months are being exclusively breastfed in low and middle-income  
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7 79 countries with even shorter duration in high-income countries [2].  
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9  
10 80 Comparisons of ‘ever breastfed rates’ are promising for selected developed countries  
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12 81 such as Sweden (98%) and Australia (96%), although for others rates are not as favourable  
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14 82 (Ireland 46%) [3]. Prevalence of ‘any breastfeeding’ at six months reflects declines with 72% in  
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16 83 Sweden and 60% in Australia breastfeeding [3] with limited Irish data suggesting rates from 26  
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19 84 to 29% [4,5]. Variation in prevalence may reveal dissimilarity in how breastfeeding women are  
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21 85 supported. For example, a comparison of ‘any breastfeeding’ for women residing rurally that  
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24 86 found more Swedish women (88.3%) were offering ‘any breastfeeding’ at two months compared  
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27 87 to Australian women (75.8%) [6]. Australian data collected in 2010 confirmed that 48% of  
28  
29 88 infants were exclusively breastfed at two months, 39% at four months and 15% at six months  
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32 89 [4]. Swedish initiation rates were highest (98%) with exclusive rates of 67% and 51% at two and  
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34 90 four months, yet by six months only 11% of Swedish infants were exclusively breastfed [9]  
35  
36 91 compared to 15% for Australian infants [7]. Irish national data reported that on discharge from  
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39 92 hospital 55% of women were offering ‘any breastfeeding’ and that by six months post birth less  
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41 93 than 7% were exclusively breastfeeding [4].  
42

43 94 Factors associated with successful breastfeeding are multifaceted and include the internal  
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45  
46 95 or personal attributes of the woman and the formal support provided by health professionals and  
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49 96 informal support from lay or peer groups [9]. Demographic characteristics such as maternal age,  
50  
51 97 educational and income levels, and ethnicity have been found to influence breastfeeding  
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53  
54 98 practices. However, not all factors associated with initiation such as maternal age are associated  
55  
56 99 with long term infant practices such as exclusive breastfeeding to six months [10]. Personality  
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58 100 factors such as dispositional optimism, breastfeeding self-efficacy, faith in breast milk,  
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101 breastfeeding expectations, intention and anxiety were associated with breastfeeding success  
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2 102 [11,12]. Informal support from a partner, mother and friends are also recognized as essential  
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5 103 [11].  
6

7 104           Research into interventions to support breastfeeding mothers has been extensive.  
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10 105 Evidence reported in a systematic review has confirmed that peer counselling, lactation  
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12 106 consultation and formal breastfeeding education during pregnancy have been found to increase  
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14 107 duration [13]. In fact, attention to potential modifiable factors such as influencing breastfeeding  
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17 108 intention, increasing self-efficacy and the provision of effective interventions around social  
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19 109 support has been recommended for interventional studies [14]. Nonetheless, to be effective,  
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21  
22 110 support should ideally be tailored to the needs of the setting and population [9]. Strategies to  
23  
24 111 support breastfeeding effective for one population in one setting may not be relevant or useful in  
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26  
27 112 other contexts. Although, countries may demonstrate promising initiation rates explanations for  
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29 113 differing prevalence trends are not always apparent.  
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31  
32 114           Achieving success with breastfeeding is complex. Although multiple layers of support  
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34 115 may be available; we have limited knowledge as to what is most useful to women in differing  
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36 116 contexts. Data from women's perspectives as to what was helpful in their breastfeeding journey  
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39 117 to six months in countries with high and lower prevalence rates can provide valuable  
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41 118 information and also highlight factors which are potentially modifiable. This study addressed  
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44 119 this gap in knowledge by exploring Australian, Irish and Swedish women's perceptions and  
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46 120 highlight how the context of support can differ between countries.  
47

## 48 49 121 **METHOD**

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51 122           Our aim was to explore Australian, Irish and Swedish women's perceptions of what  
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53 123 assisted them to continue breastfeeding for at least six months. An exploratory design using  
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56 124 critical incident techniques was used which allows for exploration of experiences and has been  
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58 125 used to evaluate consumer expectations and perceptions in health care [15]. Use of this  
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126 technique assumes that an incident can be clearly established, a detailed account is accessible  
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2127 and the incident is the basic unit of analysis [16]. For this study, the unit was the continuation of  
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5128 breastfeeding to six months. Critical incident techniques have been useful in the exploration of  
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7129 breastfeeding women's perceptions of conflicting advice [17]. Rich data is collected from the  
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10130 participant's perspective and in their own words. This method does not limit participants to a  
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12131 framework or forced choice responses as data is collected from interviews. Generally, up to 100  
13  
14132 critical incidents are recommended [18]; however, final sample size is determined by data  
15  
16  
17133 saturation. Human Research Ethics Committee approvals were obtained from Curtin University  
18  
19134 Human Research Ethics committee (No. SONM39-2014), School of Nursing and Midwifery  
20  
21  
22135 Trinity College, Dublin and Regional Research and Ethics Committee of Uppsala University  
23  
24136 (No. 2015/285).

### 26 27137 **Participants and data collection**

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29138 Women, who breastfed a recent child for a minimum of six months, were invited to  
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32139 participate. Women could still be breastfeeding or have ceased within the past 12 months. To  
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34140 avoid recall bias, women currently breastfeeding or those who breastfed within the past 12  
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36141 months were included as a period of three years or less has been recommended when focusing  
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39142 upon recall of infant feeding practices [19].

40  
41143 Australian recruitment occurred through advertisements in Community Newspapers or a  
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44144 Parents Paper, both freely available to consumers. The advertisements ran in March and April  
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46145 2014. Participants confirmed interest through email or telephone. Swedish recruitment occurred  
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49146 through social media, social network Facebook and the three largest internet forums for parents  
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51147 in Sweden. Data were collected between October 2015 and January 2016. Irish recruitment was  
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54148 also through social media Facebook pages of breastfeeding groups and a popular parenting  
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56149 forum. Snowball sampling was then employed in all countries as mothers were encouraged to

150 share study details with other women they knew who had recently breastfed for at least six  
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2151 months.

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5152           Responding to advertisements and contacting the research team was considered ‘implied  
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7153 consent’. The researcher team made three attempts to contact women, whereby the study  
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10154 purpose was explained and the woman verbally confirmed her informed consent to participate in  
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12155 an audio-recorded telephone interview. Demographic data to describe participants from each  
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14156 country was collected prior to commencing the interview and included: maternal age, parity,  
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17157 maternal education, previous breastfeeding experience and feeding pattern at six months with  
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19158 their youngest child. Responses to one opened ended question “what has assisted you to  
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22159 continue breastfeeding for at least six months?” were recorded with the woman’s verbal  
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24160 permission. Using an open ended question rather than a tick box with predetermined factors is  
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27161 the novel aspect of this study. Once the woman shared her perceptions, the interviewer provided  
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29162 a verbal summary of her responses which allowed the opportunity for reflection and to add  
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32163 anything she may have missed. Participants were then asked to rank the top three supportive  
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34164 features she perceived were most important.

### 36165 **Data analysis and storage**

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39166           Content analysis was used to determine categories that women perceived were important  
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41167 for their continued breastfeeding. During analysis, data was grouped into common categories  
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44168 that women from each country identified as being instrumental in assisting them to breastfeed  
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46169 for at least six months [20]. Researchers from each country shared their preliminary categories  
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49170 based upon analysis of transcripts and negotiation then occurred to determine final categories  
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51171 that reflected responses from Australian, Irish and Swedish women. Once agreement occurred  
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54172 with final categories, they were used to determine the citation frequency from women’s ranking  
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56173 of their importance. The responses Australian, Irish and Swedish women provided in their  
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58174 interviews were entered into separate SPSS databases and recoded to match the final categories  
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175 agreed upon by the international research teams. Descriptive statistics were then calculated  
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2176 according to those ranked as first, second or third in assisting the woman to breastfeed for at  
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5177 least six months. De-identified transcript documents and demographic data will be securely  
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7178 stored on university password protected computers for seven to ten years depending upon  
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10179 country requirements.

## 11 12180 **FINDINGS**

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15181 Our participant profile included 153 Australian women, 64 Irish women and 139  
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17182 Swedish women. Demographics summarized according to country are presented in Table 1. In  
18  
19183 general, women were: between 33 and 35 years of age; had an undergraduate or postgraduate  
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22184 degree; had one to two children (with their youngest child between 16 and 21 months); and were  
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24185 still offering breast milk (alone or with solid food) at the time of interview. Ten final categories  
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26  
27186 were confirmed as representing the experiences of Australian, Irish and Swedish women. All  
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29187 categories are listed in Figure 1. Each category will now be described with supportive quotes in  
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32188 italics acknowledged by a coding system (country and participant number) such as Aus43,  
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34189 Irish24 or Swed76.

### 35 36190 **Maternal self-determination**

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39191 ‘Maternal self-determination’, as a category, reflected comments shared by women  
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41192 around personal characteristics that contributed to persistence and determination. *You just have*  
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44193 *to be determined yourself, arm yourself with all the information you can and be super*  
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46194 *determined that you are going to succeed* (Irish58). First time mothers also expressed strong  
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49195 beliefs captured under this determination such as *breastfeeding comes with having a baby and*  
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51196 *formula feeding was not an option I considered* (Aus173) or *You have to know what you want*  
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53  
54197 *and ... be prepared to fight for it, it's not as simple as just putting the baby to your breast*  
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56198 (Swed3). For some women, their resolve to breastfeed strengthened across the perinatal period:  
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58199 *If anyone had asked me before I would probably have said that I would breastfeed because it*  
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200 *feels like a given for me, and then I got pregnant and then when I thought about it I was pretty*  
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2201 *sure I would breastfeed my baby (Swe8). Some women suggested that their determination was*  
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5202 *influenced from a previous breastfeeding experience which could have been positive or*  
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7203 *negative. I really regretted giving up at 4 months on my previous baby so I was absolutely*  
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10204 *determined to make it to at least 6mths with this baby, I said no matter what I'll keep going and*  
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12205 *preserve this time around. I really believe in the benefit, I suppose that would be behind my*  
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14206 *determination (Irish32).*  
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### 17207 **Maternal knowledge of health benefits**

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19208 The second category 'maternal knowledge of health benefits' captured women's  
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22209 statements around knowledge of the physiological benefits of breastfeeding including the  
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24210 provision of ideal nutrition and protection from antibodies for the infant: *For nutrition and the*  
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27211 *immune system...breastfeeding is good for the baby in general (Swe27). Women acknowledged*  
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29212 *how they were well informed in their breastfeeding decision: I knew it was beneficial to my*  
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32213 *baby's growth and his immune system. He would be set up for life because I had no doubt that*  
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34214 *breast is best (Aus34). A final quote supports how knowledgeable these women were: I was*  
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36215 *really well read on the benefits and I totally believe that we should be telling everyone that*  
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39216 *breast milk and formula are just not the same. He has never been sick a day (Irish24). This*  
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41217 category also reflected women's awareness of how breastfeeding could benefit the mother's  
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44218 *own health: knowledge about breastfeeding health benefits for my baby and myself (Aus182).*  
45

### 46219 **Maternal awareness of psychological benefits**

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49220 In addition to the physiological benefits women were also aware of how breastfeeding  
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51221 could facilitate bonding and feeling close to their infant. 'Maternal awareness of psychological  
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54222 benefits' is reflected in comments such as: *I absolutely loved every minute of it, the closeness*  
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56223 *with her [baby] was priceless, I felt super powered (Irish33). The opportunity to facilitate*  
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58224 *closeness was expected: I wanted to be able to bond with my baby and felt that breastfeeding*  
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225 would help with this (Aus67). From women's stories, it appears that many women did have this  
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2226 expectation met: *I think it has been really, really special with the closeness and I think we have*  
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5227 *developed a really good bond...it has been a really fantastic experience* (Swe22). Explaining the  
6  
7228 concept of closeness was challenging: *I find it so hard to explain the close bond you get from*  
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9  
10229 *it...I'm not even sure that you can, I think it needs to be experienced.....we just work as a wee*  
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12230 *unit me and him [baby]* (Irish20). Women with a history of bottle feeding were also able to  
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15231 differentiate how breastfeeding offered something unique: *It is really special to have a baby so*  
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17232 *close to you and the baby is in a way consuming your body, it makes it really special...the*  
18  
19233 *symbiosis that takes place...even though I also bottle-fed my second baby, I do think there is*  
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21  
22234 *something special about breastfeeding* (Swe5).

#### 24235 **Partner support**

26  
27236 The importance of 'partner support' was shared across all countries. The influence of the  
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29237 partner in a woman's feeding decisions is obvious from comments such as: *If my partner had*  
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32238 *pushed me to use formula so that he could feed the baby as well and so on, if he had nagged me*  
33  
34239 *to do that it would of course have affected me* (Swe1). Examples of support included practical  
35  
36240 assistance such as: *He brought me drinks and food and made sure everything was in order so I*  
37  
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39241 *could sit there with the baby in my arms and breastfeed and this made it possible for me to sit*  
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41242 *there and breastfeed peacefully* (Swe130). Partner support also acknowledged what  
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43  
44243 breastfeeding meant to the woman: *My husband is just great, he totally gets how important it is*  
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46244 *to me and shares the workload 50/50. We had a rough start and he wasn't keen on the co-*  
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48  
49245 *sleeping at the start either but now he can see that he'll get more sleep that way too (laughing)*  
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51246 (Irish54). Finally, acting as a champion when the woman was confronted by opposition was  
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53  
54247 another role partners played: *My family were quite negative about it and asking 'are you still at*  
55  
56248 *it', only for him [partner] I'd have given up a lot sooner, his support for me was unwavering*  
57  
58249 (Irish28).

250 **Breastfeeding was going well**

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2 251 The fifth category, ‘breastfeeding was going well’ captures women’s comments around  
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4  
5 252 the ease and convenience of breastfeeding but also how the baby was thriving and enjoying  
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7 253 breastfeeding, how their supply was ‘good’ and that they were able to express should they need  
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10 254 to. *I know it’s not the same for everyone but I just love it and so does she [baby] ... I just*  
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12 255 *couldn’t imagine the hassle now of making up bottles. We went to Canada and back for a*  
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14 256 *wedding and only had a few nappies and stuff to bring it was brilliant (Irish27). The ease and*  
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17 257 convenience when breastfeeding was going well is captured in comments such as: *it’s*  
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19 258 *[breastfeeding] just going so well for us both...I can’t think of a good reason to stop when it’s so*  
20  
21  
22 259 *easy and handy. (Irish64) and it was easy and convenient as I had a good supply (Aus23).*  
23  
24 260 Women also considered that breastfeeding was going well based upon infant behavior: *baby*  
25  
26 261 *settled well after feeding (Aus25) and She has chosen to breastfeed, it has calmed her if she has*  
27  
28  
29 262 *been unsettled so this has made me continue too. She seems to get full and she has done really*  
30  
31  
32 263 *well so far (Swe25).*

33  
34 264 **Informal face to face support**

35  
36 265 ‘Informal face to face support’ included support from peer counsellors, sisters, friends,  
37  
38  
39 266 cousins, grandmothers (maternal and paternal) and mothers’ group. Sometimes this support was  
40  
41 267 readily available through organized mothers’ groups: *members of my mothers’ group also*  
42  
43  
44 268 *breastfed (Aus87) and being in a community with like-minded mothers (Aus151). However,*  
45  
46 269 other women had to actively seek this support: *There’s no group [formal group run by a public*  
47  
48  
49 270 *health nurse] in my area so I went out looking for help as soon as I got home and found La*  
50  
51 271 *Leche League, thank God as I had really sore nipples and they truly saved the day...the leader*  
52  
53 272 *[Name] rang me every day for a week to see how I was getting on (Irish45). The support offered*  
54  
55  
56 273 *in these informal face to face connections could be practice advice or just the opportunity to talk*  
57  
58 274 *to other women and not feel alone in their struggles. Talking with other mothers and friends and*  
59  
60  
61  
62  
63  
64  
65

275 *sisters and just being able to talk about it because I think that I want to breastfeed, I've always*  
1  
2276 *wanted to breastfeed, but it still feels nice to be able to talk about how it's actually quite difficult*  
3  
4  
5277 *at times* (Swe24). It is apparent how this support can contribute to a mother's determination and  
6  
7278 persistence to continue breastfeeding when challenges and difficulties arise: *I think primarily of*  
8  
9  
10279 *my mother who has passed on her experiences and explained to me that it isn't always that easy*  
11  
12280 *and she's made me not give up when I've found the breastfeeding really hard* (Swe26). Informal  
13  
14  
15281 social connections are not always supportive and women may selectively seek and embrace  
16  
17282 those whose support aligns with what the woman wants to assist with their breastfeeding efforts:  
18  
19283 *I had a few friends that had breastfed before me and had good and bad experiences so I would*  
20  
21  
22284 *gravitate a lot towards those that aren't negative about it. My own mother breastfed too so she*  
23  
24285 *was cool with it* (Irish59).

### 26 27286 **Informal online support**

28  
29287 The use of 'informal online support' was another category that reflected women's use of  
30  
31  
32288 social media [Facebook], and internet [chatrooms] to get the support they needed, particularly  
33  
34289 when informal face to face support was not readily available. Benefits of *being able to access*  
35  
36290 *an online breastfeeding group* (Aus131) and using *social media to see encouraging posts on*  
37  
38  
39291 *breastfeeding* (Aus87) were acknowledged by two Australian mothers. Access to online support  
40  
41292 created a safe environment for women who could otherwise feel isolated: *I use the online a lot*  
42  
43  
44293 *and I really value the other mums input on our Facebook page, we have our own little bubble*  
45  
46294 *and there's no negativity or judgment* (Irish21). The value of this potential around the clock  
47  
48  
49295 support is apparent from comments such as: *I'd never have continued without the online*  
50  
51296 *support, having people there at all hours of the night and day to answer all my questions is a*  
52  
53  
54297 *huge support* (Irish8). Not only can this means of support offer knowledge and practical advice,  
55  
56298 *I read a lot and asked questions online to other parents before my second baby arrived – there*  
57  
58299 *were really, really knowledgeable people in that forum* (Swe6) but it contributes to women  
59  
60  
61  
62  
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300 feeling emotionally acknowledged: *You help each other to motivate and support each other.*

1

2301 *Why it is good to continue – it is nice, it feels good to hear that what you are doing is right*

3

4302 (Swe66).

6

### 7303 **Health professional support**

8

9304 The important support received from health professional along the breastfeeding journey

10

11 was recognized. ‘Health professional support’ acknowledged midwives, child health or

12

13306 community nurses, lactation consultants, pediatric or neonatal nurses, nutritionists, and doctors.

14

15307 Although we focused upon breastfeeding for up to six months post birth, women did refer back

16

17308 to the impact of comments made during pregnancy: *She [midwife] talked a bit about the*

18

19309 *advantages of breastfeeding without putting pressure on me she said that she felt sorry for*

20

21310 *people who stopped breastfeeding too early and that it could be hard but it could be worth*

22

23311 *continuing* (Swe66). Others discussed the assistance received in hospital and how this got them

24

25312 off to a good start: *good support in hospital with lactation consultant* (Aus148). An Irish mother

26

27313 shared: *I had a real turning point at one week in the maternity hospital, I went in to see the*

28

29314 *lactation consultant and she talked ... through everything. It was a total Eureka moment*

30

31315 (Irish35). The impact of one person on a woman’s breastfeeding experience cannot be

32

33316 underestimated as revealed by one Swedish mother:

34

35317 *Then there was a nurse who said that we could give her some formula and*

36

37318 *this made me feel so useless because I didn’t want that and then we got to*

38

39319 *go home... then we came back and my milk production was fine and we met*

40

41320 *a really nice nurse who was an amazing support and she sent us home with*

42

43321 *the feeling that we would be able to do it without giving the baby formula,*

44

45322 *that we would be able to go home and just breastfeed her* (Swe138).

46

47323 From women’s stories it appears that health professionals can have a profound influence on

48

49324 breastfeeding and as one Australian woman noted how *getting the right advice* [from health

50

51325 professionals] *at right time especially from the 6 week to 3 month period* (Aus11) was essential

52

53326 to her breastfeeding success.

54

### 55327 **Work environment**

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328 The ninth category ‘work environment’ refers to women’s stories of being able to stay at  
1  
2329 home, being financially supported with access to maternity leave, or having a supportive or  
3  
4  
5330 flexible work environment were factors that contributed to their being able to breastfeed for six  
6  
7331 months. *The longer maternity leave makes a big difference you don’t have to be thinking about*  
8  
9  
10332 *combining feeding and going back to work until they are well onto solids* (Irish49). One  
11  
12333 Australian mother shared how she has taken two years off work due to her ability to access  
13  
14334 maternity leave whereas another noted that her baby was located near her work environment and  
15  
16  
17335 she *breastfed when I could in between work commitments* (Aus45). Obviously not all women  
18  
19336 have these options and acknowledge different work requirements: *I think I would have had*  
20  
21  
22337 *problems with combining it with working – it’s maybe not everyone who can do both* (Swe29).  
23  
24338 In fact, many women commented on the preparation with work options they undertook to be  
25  
26  
27339 able to breastfeed: *I went back to work earlier before and I really regret giving up so soon. This*  
28  
29340 *time I took the leave and the unpaid bit so it’s much easier to keep the feeding going* (Irish18).  
30

### 31341 **Cultural norm**

32  
33  
34342 The final category ‘cultural norm’ refers to how breastfeeding was regarded as the  
35  
36343 natural choice, that breastfeeding is what most people within this context would select given  
37  
38  
39344 examples of a strong family history of breastfeeding and seeing this reinforced by important role  
40  
41345 models. *That my mother breastfed me... she breastfed my siblings too and I remember her*  
42  
43  
44346 *sitting and breastfeeding them and this has probably influenced me a lot, what you get from*  
45  
46347 *home is what you think is the most natural* (Swe11). The women who participated in this study  
47  
48  
49348 shared examples of what was regarded as ‘normal’: *was a normal thing to do in our family*  
50  
51349 *(Aus70); all of my family members breastfed* (Aus37); and *there was family expectation as*  
52  
53  
54350 *everyone in my family has breastfed* (Aus2). Although Ireland’s breastfeeding prevalence rates  
55  
56351 are quite different to Sweden’s rates, comments from Irish women such as: *most of my friends*  
57  
58352 *breastfeed their babies and my family, in my immediate family circle it would be pretty normal*  
59  
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65

353 *and I think that gave me a positive outlook on breastfeeding even before I started (Irish51)*  
1  
2354 *reflect a similar cultural norm. Everyone has breastfed their children and fed them until they*  
3  
4  
5355 *were maybe three... it has always been this way in our culture and it is very, very important to*  
6  
7356 *breastfeed so you get close to your child and for lots of other reasons (Swe10).*

### 357 **Ranking of categories by country**

11  
12358 Although all ten categories were represented across stories from Australian, Irish and  
13  
14359 Swedish women, the ranking of their importance to mothers revealed similarities and differences  
15  
16  
17360 between countries. The combined total categories ranked as first, second or third by women in  
18  
19361 each country are reported in Table 2. It must be remembered that all women interviewed had  
20  
21  
22362 successfully breastfed a recent child for at least six months. Their ranking of these categories  
23  
24363 reflects their interpretation of how these categories contributed to their breastfeeding efforts  
25  
26  
27364 within their social context. The only categories that were in the top five across countries were  
28  
29365 ‘informal face to face support’ and ‘maternal determination’. ‘Partner support’ was in the top  
30  
31  
32366 three categories for Irish and Swedish women, whereas it was sixth for Australian women.  
33  
34367 ‘Informal online support’ ranked in the top two for Irish women but was ninth and tenth for  
35  
36368 Swedish and Australian women, respectively. ‘Health professional support’ was in the top three  
37  
38  
39369 rankings for Swedish and Australian mothers, whereas Irish women ranked this as seventh.  
40  
41370 Categories ranked independently as first, second and third by women in Australia, Ireland and  
42  
43  
44371 Sweden are presented in Appendices 1, 2 and 3.

### 46372 **DISCUSSION**

47  
48  
49373 The ten categories identified as assisting Australian, Irish and Swedish women to  
50  
51374 continue breastfeeding for six months, incorporate the individual (mother), inner social (partner  
52  
53375 and baby within immediate family), outer social (informal support either face to face or online),  
54  
55  
56376 and societal support (health professionals, work environment and breastfeeding being regarded  
57  
58377 as the cultural norm). These categories fit within an ecological model highlighting factors that  
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378 influence breastfeeding such as the mother/infant dyad, the family, the health care system, the  
1  
2379 community and societal/cultural factors [21]. Our findings align with the ecological model  
3  
4  
5380 which highlights how multiple coordinated efforts through targeted interventions must  
6  
7381 incorporate all factors within an ecological model to effectively promote and support  
8  
9  
10382 breastfeeding.

11  
12383 The support required to assist breastfeeding women is complex and multi-faceted. The  
13  
14  
15384 promotion and support of breastfeeding is a collective societal responsibility as the world does  
16  
17385 not always provide a supportive and enabling environment for breastfeeding women [22].  
18  
19386 Components of an enabling environment for breastfeeding includes ‘individual determinants’  
20  
21  
22387 including mother and infant attributes and mother-infant relationship; ‘setting determinants’  
23  
24388 such as health systems and services, family and community and workplace and employment;  
25  
26  
27389 and ‘structural determinants’ including social trends, advertising, and media. “Multifactorial  
28  
29390 determinants of breastfeeding need supportive measures at many levels, from legal and policy  
30  
31  
32391 directives to social attitudes and values, women’s work and employment conditions, and health-  
33  
34392 care services to enable women to breastfeed” (p.491) [22].

35  
36393 All women in this international study cited how their knowledge of breastfeeding health  
37  
38  
39394 benefits assisted in their efforts and reinforce the importance of knowledge dissemination  
40  
41395 through parent education and individual health professional consultations. Evidence must inform  
42  
43  
44396 best practice in parent education, whether group or individual consultation [23]. Diligence must  
45  
46397 continue where knowledge can be shared with parents but also to address areas where  
47  
48  
49398 knowledge may be lacking. For example, a Finish study found that prospective parents had  
50  
51399 deficiencies in knowledge around how to increase lactation, the sufficiency of breast milk in the  
52  
53  
54400 first four months and within the context of hot summers, plus the management of alcohol  
55  
56401 consumption whilst breastfeeding [24].

402 Our category ‘breastfeeding was going well’ illustrates the importance of women  
1  
2403 receiving positive reassurance of their breastfeeding performance to build self-efficacy. Bandura  
3  
4  
5404 who constructed the social cognitive theory claims that individuals need enough knowledge  
6  
7405 about behaviors affecting health but must also believe they have the capability for adoption of  
8  
9  
10406 the behavior [25]. Individuals with self-efficacy believe they are capable of successfully  
11  
12407 performing certain behaviors [25]. As evidence suggests, self-efficacy can increase through  
13  
14408 mastery experience (past experience or successful initial attempts), verbal persuasion (trust and  
15  
16  
17409 encouragement by a credible significant others), vicarious experience, or physiological and  
18  
19410 affective states [26-28]. Although our international participants acknowledge their own  
20  
21  
22411 determination as important, constant struggles without some degree of success may be  
23  
24412 overwhelming. Women may experience difficulties during the early stages of breastfeeding and  
25  
26  
27413 it is important that advice and support is timely. This support is particularly important in the  
28  
29414 early postpartum period as a longitudinal cohort study in Sweden found that 27% of mothers  
30  
31  
32415 had breastfeeding problems in the first month which was associated with early cessation [29]. In  
33  
34416 fact, an American study found that 60% of women ceased breastfeeding earlier than desired and  
35  
36417 difficulties with lactation such as attachment issues; sore, cracked or bleeding nipples and pain  
37  
38  
39418 [30].

41419 Our international breastfeeding women acknowledged the importance of support from  
42  
43  
44420 health professionals which is supported in the literature. An Australian mixed methods study  
45  
46421 reported that women relied on health professionals for advice and support revealing a theme of  
47  
48  
49422 ‘not giving up despite difficulties’ [31]. Support from others who can encourage individuals to  
50  
51423 believe they have the ability to achieve what they seek (verbal persuasion) are especially  
52  
53  
54424 important when struggling with difficulties [26,27]. The extent and timeliness of services being  
55  
56425 able to offer early problem resolution when women are struggling in ‘those first few weeks’ is  
57  
58426 essential [31]. For example, effective breastfeeding technique is associated with increased  
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427 breastfeeding self-efficacy [32] and demonstrates how Bandura's mastery experience can  
1  
2428 increase breastfeeding self-efficacy [26,27].  
3

4  
5429 Irish women in our study did not rank health professional support as highly as Australian  
6  
7430 or Swedish women who ranked this support in their top three categories. Perhaps in an  
8  
9  
10431 environment where this formal support is not readily accessible, these resourceful women used  
11  
12432 informal networks available either face to face through family, friends or their partner or  
13  
14433 through online media. Although Australian and Swedish women also cited partner and informal  
15  
16  
17434 face to face contact within their top five rankings, use of informal online support were ninth and  
18  
19435 tenth, respectively. Evidence around the important of both informal and formal support has been  
20  
21  
22436 widely known [33]. A recent UK study explored women's experiences with Baby Café  
23  
24437 breastfeeding support groups and found that mothers valued a combination of professional and  
25  
26  
27438 peer support provided by the Baby Care services: the social support from other mothers was  
28  
29439 regarded as central to being able to meet their breastfeeding goals [34].  
30

31  
32440 The use of informal online support through social media such as Facebook was highly  
33  
34441 cited by Irish mothers. Bandura claimed that self-efficacy can increase through role models in  
35  
36442 social media and individuals can observe attitudes, styles of competencies and attainments of  
37  
38  
39443 different people [26,27] but limited evidence is available around the use of social media to  
40  
41444 support breastfeeding women. A Twitter based educational campaign on awareness, knowledge  
42  
43  
44445 and breastfeeding practices in Saudi Arabia reported a slight increase in initiation with women  
45  
46446 confirming a willingness to continue exclusive breastfeeding (n=484) [35]. A qualitative design  
47  
48  
49447 explored the use of social media amongst 14 first time African American mothers and eight  
50  
51448 support persons [36]. Although acknowledged as an important vehicle to disseminate  
52  
53  
54449 information, social media is not being used to its full potential and opportunities to create  
55  
56450 innovative, health interventions around infant feeding are not only recommended [36] but  
57  
58451 deemed essential for Generation Y who are online and connected [37].  
59  
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452 Fathers and family members such as maternal grandmothers do influence a woman's  
1  
2453 infant feeding decision [38,39]. Although father presence is associated with greater initiation, a  
3  
4  
5454 negative relationship between practical support from fathers and grandmothers and  
6  
7455 breastfeeding has been noted [40]. Fathers are acknowledged as providing essential support for  
8  
9  
10456 their breastfeeding partners and initiatives to improve their knowledge around breastfeeding  
11  
12457 must continue to be a research priority as suggested from a pilot study with inner-city fathers in  
13  
14458 Ohio [41].  
15

16  
17459 Awareness of the potential for clashes between idealism and the reality experienced  
18  
19460 within and between families and health professionals suggests that a family-centered narrative  
20  
21  
22461 approach may be beneficial in acknowledging family goals particularly in the presence of  
23  
24462 breastfeeding problems [42]. Infant behaviors that can be misinterpreted as breastfeeding  
25  
26  
27463 problems or perceptions of insufficient milk [43] and reflect misunderstanding of normal infant  
28  
29464 crying, an unsettled restless baby or frequent awakenings at night: it has been suggested that  
30  
31  
32465 teaching child development to parents could be a useful strategy to extend breastfeeding  
33  
34466 duration [44].  
35

36467 The category of breastfeeding being noted as the cultural norm was similarly ranked  
37  
38  
39468 eighth by all international women which is interesting given Australia and Sweden have high  
40  
41469 initiation rates and comparable prevalence up to 6 months. However, Irish women where  
42  
43  
44470 initiation rates are lower also ranked cultural norm as eighth out of the ten categories. This  
45  
46471 highlights that acknowledging breastfeeding as a cultural norm was important for these  
47  
48  
49472 international women who all breastfed to at least six months and whose personal and social  
50  
51473 environment reinforced the normality of breastfeeding. Individual's everyday network may  
52  
53  
54474 include important role models (vicarious experience) because they reinforce that individuals  
55  
56475 "just like you" can be successful and are essential for increased self-efficacy [27]. In fact,  
57  
58476 further research has been recommended across pre-conception and throughout the perinatal  
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477 period to better support women choosing to breastfeed and cultivate breastfeeding as a cultural  
1  
2478 norm [45].  
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4  
5479 We found that mothers in this study cited felt that breastfeeding facilitated bonding and  
6  
7480 enabled them to feel closeness with their infant. Mothers enjoyed the closeness and therefore  
8  
9  
10481 had a positive experience of breastfeeding. When individuals are happy, relaxed and calm  
11  
12482 (physiological and affective states) they may achieve higher self-efficacy [26-28]. It has been  
13  
14483 suggested that social and professional support should include help for mothers to relax and focus  
15  
16  
17484 on their feelings of closeness with their infant [46].  
18

19485 Limitations must be considered when interpreting our findings as our Australian, Irish  
20  
21  
22486 and Swedish women are not representative of all breastfeeding women in these countries.  
23  
24487 Women self-selected to participate in response to our recruitment strategies and represent a  
25  
26  
27488 cohort of highly educated women who have continued to breastfed a recent child beyond six  
28  
29489 months. As social media platforms were used for recruitment in Sweden and Ireland, this may  
30  
31  
32490 have contributed to the importance of online support in our findings.  
33

## 34491 **CONCLUSION**

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36492 Our findings highlight Australian, Irish and Swedish women's perceptions of what  
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39493 assisted them to breastfeed for six months suggesting that the support required to assist  
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41494 breastfeeding women is complex and multi-faceted. Although common categories were  
42  
43  
44495 revealed, differences in the ranking of these supportive categories were noted between countries.  
45  
46496 A coordinated effort that recognizes all categories is recommended to support women's  
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48  
49497 breastfeeding efforts.  
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499 **Declarations**

1

2500 **Ethics and Consent to Participate statement**

3

4

5501 Human Research Ethics Committee approvals were obtained from Curtin University Human

6

7502 Research Ethics committee (No. SONM39-2014), School of Nursing and Midwifery Trinity

8

9

10503 College, Dublin and Regional Research and Ethics Committee of Uppsala University (No.

11

12504 2015/285).

13

14505

**Consent to Public statements**

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16

17506

Not applicable.

18

19507

**Competing Interest statement**

20

21

22508

The authors declare that they have no competing interests.

23

24509

**Author's Contributions**

25

26510

YH – made substantial contributions to conception and design, acquisition of data, analysis and

27

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29511

interpretation of data; drafting the manuscript

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31512

IB - made substantial contributions to acquisition of data, analysis and interpretation of data;

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33

34513

drafting the manuscript

35

36514

IH - made substantial contributions to conception and design, acquisition of data, analysis and

37

38

39515

interpretation of data; critical revision of manuscript

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41516

LG - made substantial contributions to conception and design, acquisition of data, analysis and

42

43

44517

interpretation of data; critical revision of manuscript

45

46518

CR - made substantial contributions to analysis and interpretation of data; critical revision of

47

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manuscript

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51520

BT - made substantial contributions to conception and design, analysis and interpretation of

52

53521

data; critical revision of manuscript

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55

56522

LL - made substantial contributions to conception and design, analysis and interpretation of

57

58523

data; critical revision of manuscript

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524 All authors read and approved the final manuscript.

1

## 2525 **Availability of data and materials statement**

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4

5526 Data from this international study will not be available to be shared. Qualitative transcript data

6

7527 from each country may identify individual participants and therefore confidentiality must be

8

9

10528 protected. Three separate SPSS databases for the Australian, Irish and Swedish data were not

11

12529 combined as only descriptive statistics were undertaken in this exploratory study. In addition,

13

14530 the Swedish transcripts and SPSS data file are not available in English.

15

16

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22

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24

25

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**Table 1. Demographic characteristics of Australian, Irish, and Swedish women**

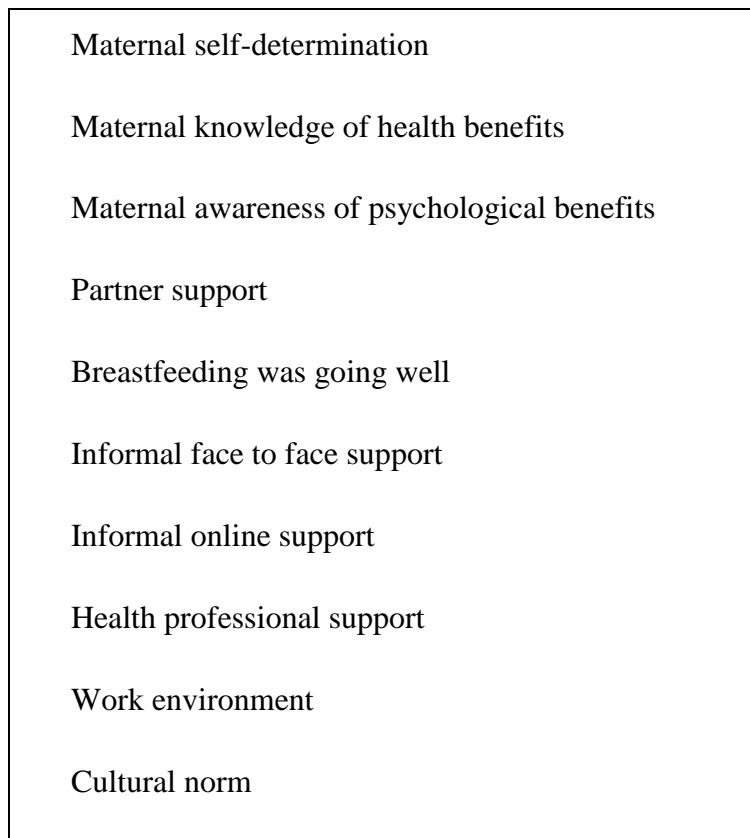
<b>Variable</b>	<b>Australian women N=153 n(%)</b>	<b>Irish women N=64 n(%)</b>	<b>Swedish women N=139 n(%)</b>
† <b>Maternal Age</b>	33.5(4.92)[22-49]	34.9(4.01)[24-43]	33.5(5.61)[20-51]
† <b>Number of children</b>	1.7(0.83)[1-5]	1.6 (0.73)[1-4]	1.8(0.91)[1-6]
<b>Number of children</b>			
<b>One child</b>	75 (49.0)	31 (48.4)	62 (44.6)
<b>Two children</b>	55 (35.9)	25 (39.1)	51 (36.7)
<b>Three children</b>	18 (11.8)	7 (10.9)	21 (15.1)
<b>Four or more children</b>	5 (3.3%)	1 (1.6)	5 (3.6)
<b>Level of education</b>			
<b>High school not completed</b>	2 (1.3)	-	5 (3.6)
<b>High School completed</b>	18 (11.8)	6 (9.4)	32 (23)
<b>Undergraduate degree</b>	88 (57.5)	28 (43.8)	62 (44.6)
<b>Postgraduate degree</b>	45 (29.4)	30 (46.9)	40 (28.8)
<b>Previously breastfed a child</b>	77 (50.3)	32 (50.0)	70 (50.4)
† <b>Age of youngest child in months</b>	16.7(9.75)[5-60]	16.0(9.25)[6-42]	21.0(11.2)[6-56]
<b>Youngest child feeding 6 months</b>			
<b>Breastmilk</b>	21 (13.7)	17 (26.6)	30 (21.6)
<b>Breastmilk and formula</b>	1 (0.7)	1 (1.6)	4 (2.9)
<b>Breastmilk and solid food</b>	122 (79.7)	40 (62.5)	95 (68.3)
<b>Breastmilk and formula and solid food</b>	9 (5.9)	6 (9.4)	10 (7.2)

†Mean(Standard Deviation)[Range]

**Table 2. Total categories ranked first, second or third by Australian, Irish and Swedish women**

<b>Australian Category citations N=449 n (%)</b>		<b>Irish Category citations N=192 n (%)</b>		<b>Swedish Category citations N=382 n (%)</b>	
Breastfeeding was going well	100 (22.3)	Informal face to face support	41 (21.4)	Health professional support	55 (14.4)
Maternal knowledge of health benefits	89 (19.8)	Informal online support	30 (15.6)	Informal face to face support	47 (12.3)
Health professional support	66 (14.7)	Partner support	26 (13.5)	Partner support	47 (12.3)
Informal face to face support	49 (10.9)	Maternal self-determination	25 (13.0)	Maternal self-determination	44 (11.5)
Maternal self-determination	42 (9.3)	Breastfeeding was going well	21 (11.0)	Maternal knowledge of health benefits	41 (10.7)
Partner support	39 (8.7)	Maternal knowledge of health benefits	18 (9.4)	Breastfeeding was going well	41 (10.7)
Maternal awareness of psychological benefits	25 (5.6)	Health professional support	11 (5.7)	Maternal awareness of psychological benefits	40 (10.5)
Cultural norm	17 (3.8)	Cultural norm	9 (4.7)	Cultural norm	36 (9.4)
Work environment	14 (3.1)	Work environment	9 (4.7)	Informal online support	28 (7.3)
Informal online support	8 (1.8)	Maternal awareness of psychological benefits	2 (1.0)	Work environment	3 (0.8)
<b>Total</b>	<b>449 (100)</b>		<b>192 (100)</b>		<b>382 (100)</b>





**Figure 1. International Categories: what assisted women to breastfed for six months**



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**Supplementary Material**

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