Ramos-Morcillo, A. J., Harillo-Acevedo, D., & Ruzafa-Martinez, M. (2020). Using the Knowledge-to-Action Framework to understand experiences of breastfeeding guideline implementation: A qualitative study. Journal of Nursing Management, 28(7), 1670-1685. https://doi.org/10.1111/jonm.13123

Title:

Using the Knowledge-to-Action framework to understand experiences of breastfeeding guideline implementation: a qualitative study

ABSTRACT

Aim: to examine the perceptions and experiences of healthcare professionals and mothers in relation to the implementation of a breastfeeding clinical practice guideline (CPG).

Background: Breastfeeding CPG applications remain limited, and qualitative studies have indicated the need to overcome the perception by professionals of difficulties in applying recommendations.

Methods: A qualitative study was conducted in a Spanish public hospital that implemented the Registered Nurses´ Association of Ontario breastfeeding CPG from 2012 through 2015. Between May-August 2017, 27 semi-structured interviews were conducted with managers, with professionals in maternity and pediatric departments and with mothers. Deductive content analysis was performed following the stages in the Knowledge-To-Action (KTA) framework.

Results: We obtained five main categories: 1) problem as opportunity, 2) adequate context and adapted recommendations, 3) extent of implementation, 4) impact of results, and 5) knowledge use normalization.

Conclusions: The KTA framework assists understanding of the participation of the main actors in breastfeeding CPG implementation.

Implications for Nursing Management: The nature of the interventions and the participation of managers, different professionals, and mothers in a multi-unit setting

generate a complex implementation process that reveals key factors to be taken into account in future CPG implementations.

KEYWORDS

Breastfeeding; Implementation Science; Practice Guideline; Qualitative Research; Nursing; Midwifery.

INTRODUCTION

The prevalence of exclusive breastfeeding at 6 months of age is generally low in European countries, ranging between 13 and 39% (Theurich et al., 2019). The WHO (WHO, 2014) has called for at least half of babies aged <6 months to be exclusively breastfed by 2025. Breastfeeding clinical practice guidelines (CPGs) have been developed by major international bodies (National Institute for Health and Care Excellence, 2008), supporting interventions that have proven effective to establish and maintain exclusive breastfeeding (Lee et al., 2015). However, their application remains limited in various organizations and health systems (Salvador et al., 2016). **Background**

Studies of CPG implementation have centered on barriers and facilitators (Fischer et al., 2016), but the implementation of recommendations is more complex than the overcoming of identified obstacles (Kajermo et al., 2010), and it is also necessary to test the effectiveness of different approaches (Grimshaw et al., 2004). Qualitative studies on CPG implementation have indicated that success is related to: the perception of difficulties in applying recommendations by professionals (Carlsen & Norheim, 2008); conflicts between CPG recommendations and the needs and experiences of professionals (Solà et al., 2014), and knowledge related to guidelines and the role of the organization as facilitator (Donnellan, Sweetman, & Shelley, 2013; Janssen et al., 2012). Similar findings have been reported in studies on the implementation of CPGs for nursing care(Ploeg et al., 2007; Ritchie & Prentice, 2011), which have also highlighted the role of guideline leaders (Ploeg et al., 2010).

Numerous authors have reported on the application of the Baby-Friendly Hospital Initiative (BFHI) (Fallon et al., 2019; Munn et al., 2016; Tarrant et al., 2011). They

identified various influential factors, including the organizational culture and leadership, the availability of time, training, and resources, and the professional workload (Semenic et al., 2012). There has been little detailed qualitative research on the implementation of breastfeeding CPGs, mainly developed in Canada (Salvador et al., 2016) and more focused on developing implementation theories than addressing specific aspects of implementation (Matthew-Maich et al., 2013). Published evidence to date cannot necessarily be generalized to hospitals in regions with low exclusive breastfeeding rates or in different cultural and management settings.

Conceptual frameworks are essential to guide CPG implementation (J Rycroft-Malone & Bucknall, 2010). Various approaches, including Promoting Action on Research Implementation in Health Services (PARIHS)(J. Rycroft-Malone, 2004), the Consolidated Framework for Implementation Research (CFIR)(Damschroder et al., 2009), and the Knowledge-to-Action (KTA) Framework (Graham et al., 2006) facilitate the systematic implementation of research evidence in health services and increase the likelihood of achieving changes in their practices (Tabak et al., 2012).

The KTA framework is a planned action theory within social constructivism that favors social interaction and the adaptation of knowledge, taking account of the local setting and culture (Straus, Tetroe, & Graham, 2013). This process model contains two inter-related components: knowledge creation and action cycle. The latter corresponds to knowledge implementation and involves: 1) identifying the problem and selecting available knowledge, in this case provided by CPGs; 2) adapting recommendations to the local setting; 3) assessing barriers to and facilitators of knowledge use; 4) planning and executing implementation; 5) monitoring knowledge use; 6) evaluating outcomes to determine implementation success; and 7) developing strategies to sustain

knowledge utilization. The aim of this framework is to provide support for planning and managing implementations (Nilsen, 2020).

Although the KTA framework is one of the most widely applied implementation models, there has been very limited research on its direct utilization (Field et al., 2014), and this has typically focused on outcomes and on professional adherence to guideline recommendations rather than on the process itself (Laur & Keller, 2015; Stacey et al., 2019). There have been calls for research on other aspects, such as the actors involved in implementation, in order to provide decision-makers and managers with more evidence to support the management and application of theoretic implementation frameworks (Vincenten et al., 2019). It has been pointed out that the actors offer evidence on real-world practices and can improve communication between researchers and policy makers (Ingold & Monaghan, 2016).

Accordingly, in-depth study of the experiences of all professionals involved in GPC implementation, analyzing their interpretation and understanding of different KTA framework phases, could strengthen evidence on the validity of this model for implementing breastfeeding recommendations. Therefore, the objective of this study was to investigate the perceptions and experiences of healthcare professionals and mothers in relation to a breastfeeding CPG implementation process guided by the KTA framework in a regional hospital of the Spanish public healthcare system.

METHODS

Design

A qualitative study was performed using content analysis, valid for understanding the subjective experiences of participants and for yielding insights into the perceptions, beliefs, and values of specific groups (Catherine Pope, Sue Ziebland, 2000).

Setting

The study was conducted in a Spanish regional university hospital with 300 beds. The Care Quality Department of the hospital prioritized the promotion of breastfeeding because the exclusive breastfeeding rate at discharge was only around 40%. The breastfeeding CPG (Registered Nurses´ Association of Ontario, 2018) was implemented in the delivery room and in maternity and pediatric units. There are around 1600 births per year (4.4 births/day) in the hospital and 80% are vaginal deliveries, with an average hospital stay of 2 days, while the remaining 20% are delivered by caesarean section, with an average hospital stay of 3-4 days.

The breastfeeding CPG was implemented through the Spanish Best Practice Spotlight Organization (BPSO) Project managed by the Healthcare Research Unit (Investen-isciii) of the Ministry of Science, Innovation, and Universities alongside the Registered Nurses' Association of Ontario (RNAO) (Ruzafa-Martínez et al., 2011). The BPSO project involved a three-year tutoring period in centers implementing the CPG, with a follow-up every two years. The project was run between 2012 and 2015, and participating centers were eligible for certification at the end of this period. The centers continue to participate in the guideline sustainability phase.

The implementation followed the multi-component intervention model used in all BPSO projects, focused on creating structures, developing capacity, and establishing evaluation systems, with tutoring and follow-up provided by Investen-isciii: a) an organizational structure was generated for the implementation and follow-up of the entire process, and a CPG leader was selected (senior nurse supervisor of the maternity and delivery units); b) the leader received training on KTA framework-based implementation; c) the leader recruited "champions" in the institution and

implemented cascade training; d) multidisciplinary work groups were established; e) barriers, facilitators, and stakeholders were identified; f) CPG recommendations were selected and a three-year activity program was planned, related to policies, the updating of protocols, circuits, educational materials, and the adaptation of human and physical resources; g) the monitoring and outcome evaluation process was planned, reviewing and harmonizing clinical records, using common indicators shared by all institutions, and establishing feed-back systems; h) the intra- and extra-institutional dissemination of results was planned; and i) activities to support the guideline sustainability were programmed.

Sample

For professionals, the study inclusion criterion was involvement with the breastfeeding CPG implementation process in the delivery room and/or maternity and/or pediatric departments of the hospital and at least three years' experience in maternal and child care. Among 82 eligible professionals, intentional sampling was performed to obtain a heterogenous selection in terms of professional profile (midwives, registered nurses, healthcare assistants, gynecologists, pediatricians), age, sex, department (delivery room, maternity, pediatrics), role in the guideline (leader, champion (clinician trained for implementing the GPC), clinician, manager).

Two groups of mothers were differentiated: 1) those who gave birth during the CPG implementation period alone, and 2) those who gave birth not only during this period but also before CPG implementation (multiparous mothers).

Data collection

Data were gathered between May and August 2017. Participants were interviewed in person by a member of the research team (AJRM, DHA, or MRM). All participants were

invited to choose the day and time for the interview and the place in the hospital where it would be held. None of the participants refused to be interviewed.

For the professionals, a semi-structured interview was based on the seven phases of guideline implementation described in the KTA Framework (Registered Nurses' Association of Ontario, 2012). For the users, a semi-structured interview was designed to elicit the mothers` experience of the interventions of healthcare professionals on breastfeeding. The scripts for both interviews were previously piloted. The interviews were recorded and literally transcribed, and notes were made after each interview. Codes were used to ensure confidentiality. The saturation criterion was applied to establish the number of informants, an accepted method to estimate the sample size (Morse, 1995) .

Data analysis

Deductive content analysis was performed (Elo & Kyngäs, 2008) following the stages in the KTA Framework (Graham et al., 2006). Transcribed interviews were imported to MAXQDA 12 for data management and for analysis in three phases: preparation, organization, and report presentation (Elo & Kyngäs, 2008). In the preparation phase, the analysis unit was selected, performing immersion in the data to endow them with meaning and gain an understanding of "what is going on" (Morse, 1995). In the organization phase, open encoding was performed, creating categories and subcategories based on the KTA-Framework. Once the organizational phase was completed, it was determined whether saturation had been reached in all categories or whether there was a need to recruit more informants. In the report presentation phase, the most credible, authentic, contextually clear, and reader-friendly verbatims were selected (Patton, 2015).

Transcriptions and emerging material were discussed by the research group for verification. Data reliability was established by comparing the encoding produced independently by the three researchers responsible for the transcriptions (DHA, AJRM, and MRM). Agreements and discrepancies were recorded, and any disagreement was resolved by consensus. The study was reported according to the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007).

Ethical considerations

The project was approved by the Clinical Research Ethics Committee of Health Care BLINDED (002/2015). Participants signed written consent after receiving information on the study and ethical and confidentiality guarantees, having had the opportunity to ask questions about the project.

RESULTS

The study included 20 healthcare professionals and 7 mothers. The mean duration of interviews was 42 min (Table 1).

Results are grouped in five categories in accordance with the stages of the KTA Framework action cycle, with subcategories and emerging themes. Tables 2-5 provide a representative sample of *verbatim quotes*.

Problem as an opportunity

Managers predominated in the first "Problem identification" phase of the action cycle, reporting *"a major problem with formula feeding" (E19Manager)* that had previously been identified by the Care Quality Department based on self-evaluated breastfeeding indicators. In contrast, no clinicians reported participating in this phase, although they were aware of previous attempts by the center to achieve IBFHI center

accreditation and affirmed that breastfeeding was an essential and important issue (table 2).

Adequacy of setting and adaptation of recommendations

In this phase, there was first a global evaluation of resources and opportunities, followed by a selection of the guideline recommendations to be implemented. Managers again intervened from the beginning, assessing resources and identifying the physical facilities available and the adaptations required. They also established a guideline implementation committee (guide leader and collaborators), selecting professionals with particular involvement in this matter: *"midwives enthusiastic about the subject" (E19Manager)*. Among external resources, they cited support from other institutions such as Investen-isciii and the School of Social Health Sciences. They described the implementation of the guideline as a process "*that could be taken on" (E19Manager).* The selection of recommendations for implementation was mainly based on their feasibility: *"those that can be carried out" (E19Manager), "those that are possible" (E11Clinician).* From the initial phases of the process, managers expressed the importance of the indicator selection, describing it as a simple procedure: *"the implementation instrument tells you" (E18Manager)* (table 2).

Extent of implementation

This category refers to the experiences of interviewees during implementation of the intervention. Five categories emerged: type of professional, perception of the guideline, interventions, perceived changes, and obstacles to action (table 3).

Types of professionals

Professionals could be differentiated from their discourses among: a) leaders and those convinced after experience of implementation; b) those who go along with the

group, and c) those who are inflexible. Professionals and patients perceived three levels of involvement in breastfeeding by profession: midwives (high), registered nurses/healthcare assistants (moderate), and physicians (low).

Perception of the guideline

Perceptions of the guideline varied among the above types of professional. For the leaders and convinced, it became a reference or driver of change that guided their practice, being especially relevant in units where its application is usually less frequent (e.g. pediatric departments), and it served to promote BFHI accreditation. The perception of some professionals was that the CPG had not reached all of them in an adequate manner. Clinicians not directly associated with the implementation process spoke in general terms about the global process but referred to the guideline in terms of "the protocol", an instrument developed for the clinical application of recommendations, describing its availability on the hospital intranet platform as a positive aspect.

Interventions

The discourses of clinicians describe different implementation interventions that vary according to the professional's closeness to the process. They include the communication of information to the mothers by different means (letter, video, and group sessions), the availability of a lactation consultant, participation in the breastfeeding committee, improvements in physical facilities, and the recording of breastfeeding status in clinical records. The most highly valued intervention was the training, with special praise for the trainer, the way it was conducted, the small group size (2-3 professionals), and its programming during work hours. Participants also described the value of multiple continuous interventions to favor professional

involvement. The leaders and most closely involved professionals identified as one positive aspect their ability to decide their own intervention strategies, which were creative and involved everyone.

Perceived changes

The clinicians observed that changes occur at three levels. The first related to their own experience of change, producing a positive attitude towards guideline implementation, mainly among the younger professionals; they also identified peer pressure as facilitating the implementation of recommendations. They described experiencing changes in the way they work, with the application of uniform care criteria. The second level corresponded to a positive perception of physical changes (design and facilities) designed to facilitate breastfeeding, and the third was related to the role of the institution, valuing the positive support of managers.

Obstacles to action

Discourses on the need to promote breastfeeding appeared together with discourses on the excessive importance given to this issue. Working on breastfeeding was considered to increase the work load and to require an increase in staffing levels. They also reported that some professional profiles do not become involved and exhibit a certain reluctance to change. Breastfeeding-related activities were only understood as part of their clinical work by midwives, not by registered nurses or physicians. They acknowledged the support for breastfeeding in the provision of information but not in the offer of practical breastfeeding assistance. Finally, they noted that some mothers are not aware of the benefits of breastfeeding and cannot be forced into it.

Impact of results

Management of key indicators

The managers mainly referred to the complexity of the process of collecting and organizing the data needed for CPG-related indicators. For their part, the clinicians most directly involved with guideline implementation and able to access breastfeeding statistics expressed interest in the health outcomes.

Some professionals identified outcomes with the recording of breastfeeding status in clinical records, which some associated with "statistical" issues in which they had little interest, although they also commented that knowledge of the outcomes could be motivating and that they would like to be able to consult indicators autonomously (table 4).

Impact of results on professionals and users

Professionals evaluated the guideline implementation as positive, describing it with expressions such as "*they stimulate you*" *(E2Clinician)* and, "*you solve problems*" *(E16Clinician)*. They felt safer and better able to face complex situations; and they were satisfied to have a scientific basis for their actions.

Some clinicians evaluated health outcomes based on their direct experience with the mothers, noting that interventions sometimes worked well and sometimes did not: "*by fits and starts*" *(E1Clinician)*.

Professionals and managers described an improvement in mothers' feelings about the care of their children. They also perceived a greater trust and better relationship with mothers. However, they acknowledged that that there was room for improvement. Some multiparous mothers reported a more positive experience of delivery during than before implementation *"I had my baby on immediate skin-to-skin contact and I started early breastfeeding"(E.21mother)*.

Knowledge use normalization

The professionals had positive expectations for the sustainability of the guideline over the short- and long-term but expressed the need to continue working on it. They already perceived a change in the organizational culture, with the "normalization" of some novel interventions and the adoption of more uniform criteria, and they reported a greater involvement in breastfeeding. They also acknowledged that *"Seeing my colleagues do it makes me do it too" (E16Clinician)* (table 5).

DISCUSSION

This study examined the experiences of managers, professionals, and mothers involved in implementing a breastfeeding CPG in maternity and pediatric units in a Spanish hospital and their perception of its significance, following the phases of the KTA framework (Graham et al., 2006). It is recognized that qualitative approaches are necessary to assess the degree to which knowledge translation interventions are actually implemented, providing relevant information to managers responsible for quality improvement in an institution (Bhattacharyya et al., 2013). The results also contribute to an understanding of the usefulness and impact of instruments such as this framework (Field et al., 2014) in breastfeeding guideline implementation in an understudied setting (Gifford et al., 2018). Five of the seven phases of the KTA framework action cycle were observed in the discourses of participants, which showed some particular characteristics, as in other studies (Field et al., 2014). Phases 5 and 6 (knowledge monitoring and result evaluation) were fused, while phase 3 (barrier assessment) appeared implicitly, possibly due to the dynamic nature of phases and their interrelation (Graham et al., 2006). Indicators for outcome evaluation in KTA framework phase 6 (Registered Nurses' Association of Ontario, 2012) were selected in phase 2, being considered part of adaptation to the local setting.

The participation of different types of healthcare professional varied in each phase of the action cycle. Nurses with a management role were heavily involved in phases 1 “identifying the problem and selecting available knowledge” and 2 “adapting recommendations to the local setting” and played a secondary role in remaining phases, mainly in support, maintenance, and data gathering. They evidenced conceptual and operative commitment to the CPG implementation (Gifford et al., 2018). Clinical leaders (midwives) and nurses with a particular commitment to implementation participated at the end of phase 2 in the selection of recommendations for implementation, aiming to ensure the compatibility of proposed changes with the existing practices and culture of nurses, thereby facilitating the adoption of new practices (Cranley et al., 2017). In phases 3, 4, and 5, clinical leaders and front-line clinicians/nurses were more or less actively engaged, and they could be classified by the degree of their involvement in implementation as: “inflexible”; “going along with the group”, or “leaders and professionals convinced by experience about implementation”. This typology is proposed in the conceptual framework of Supporting the Uptake of Nursing Guidelines (SUNG) (Matthew-Maich et al., 2013), which describes new practices as being adopted in a cascade of sequential changes, with some professionals having doubts and being reluctant to change. However, these obstacles are overcome once they see the positive results of new practices, leading them to commit to the changes and disseminate them to colleagues. In the present study, a new profile emerged of professionals who go along with the group, responding to peer pressure, who may not actively participate in these processes but influence changes in behavior that favor breastfeeding (blinded) . The importance of vicarious learning has previously been highlighted, observing that group

norms can be even stronger than ethical standards in complex and ambiguous situations (Fitzgerald & Dopson, 2005).

The experience by professionals of the guideline implementation process can be described as advanced or standard. In general, the former include the leaders and more convinced professionals, whose reference is the CPG, who know the data gathering process in greater detail, who are committed to working with common intervention criteria, and who observe positive changes in the environment and in the support of managers, thereby acting as facilitators of guideline implementation (Ploeg et al., 2007). "Standard" professionals, who go along with group, have no detailed knowledge of the implementation project, and their reference is the breastfeeding protocol. They associate the inclusion of breastfeeding in clinical records with data monitoring and statistics, to which they express indifference, although they are interested in the exclusive breastfeeding rate at discharge. However, whether the professionals refer to the CPG (advanced) or to the protocol (standard), all of them ultimately implement the recommended breastfeeding activities (May et al., 2014). In other words, the knowledge is used by the former in a conceptual, instrumental, and persuasive manner and by the latter in an instrumental manner (Straus, Tetroe, Bhattacharyya, et al., 2013).

All of the professionals positively evaluated the training and its content, as observed in similar studies (Nickel et al., 2013). They also described multicomponent interventions, frequent in knowledge implementation processes, as essential for implementation and sustainability (Cranley et al., 2017). As found in other studies (Ritchie & Prentice, 2011), professionals in the "standard" group largely evaluated the impact of results according to their own experience of clinical practice. Those in the "advanced" group were content that they could face more complex problems, base their

work on scientific knowledge, and enjoy greater trust with mothers, thereby overcoming widely documented barriers to the implementation of breastfeeding recommendations (K. A. Szucs, D. J. Miracle, 2009). As postulated by the Theory of Motivating Change, the internalization of extrinsic motivators transforms individuals and organizations into self-proliferating improvers, creating the appropriate psychosocial-structural conditions for large-scale and sustained change (Breckenridge et al., 2019). In the present study, all of the professionals understood CPG sustainability as a process of "normalizing" new practices and included them in routine practice, in line with Normalization Process Theory (May et al., 2014).

Finally, the focus of the breastfeeding guideline on health promotion and its targeting of healthy individuals appear to represent limitations for its implementation. Breastfeeding provides multiple health benefits throughout the life of offspring, although this is not visible to professionals in the clinical care setting. Professionals are more accustomed to working with disease and to a relatively rapid feedback from their clinical activities. This may explain, as observed in the present and previous studies (DiGirolamo et al., 2003; Mohan et al., 2012), why the recommended interventions are not considered to be clinical activities by professionals (except for midwives), reducing their commitment to implementation. Accordingly, the work of "lactation consultant" can be perceived as "something done by somebody else" and not by the other professionals. It is necessary to evaluate the suitability of this intervention, given that similar results have been obtained in other studies (Nickel et al., 2013).

The participation of mothers is essential, given the particular nature of these guidelines. These mothers perceived a positive change in the practices of professionals after guideline implementation and felt more satisfied, in line with previous

observations (Barnes et al., 2010; Fallon et al., 2019). However, when professionals encountered women who were reluctant to breastfeed and/or lacked awareness of breastfeeding, they became aware that a successful outcome did not depend on their clinical activity, with a negative effect on their attitude to implementation, as previously observed (Nickel et al., 2013).

Limitations

The implementation process varies according to the size, complexity, and specialization of the organization in question, limiting the generalization of the present results. A further potential limitation is that interviewees sometimes knew that the interviewer was a member of the implementation project team, which may have introduced a bias. Finally, the study only included mothers who were practicing breastfeeding.

CONCLUSIONS

Managers and guideline leaders predominate during initial implementation planning phases, while front-line professionals participate in execution and evaluation phases. Professionals can be classified as standard or advanced, differing in their perception of the extent and impact of implementation and the obstacles to action. Sustainability is interpreted as the normalization of breastfeeding practices of professionals. The focus of the guideline on health promotion and the targeting of healthy individuals represent limitations for its implementation.

Future research is warranted on the interactions among professionals and between professionals and users and on the co-existence of experiential knowledge with formal scientific information. As recommended, there is a need to develop large-scale qualitative studies using a comparative case design (Ferlie, 2005).

Implication for Nursing Management

The nature of the interventions and the participation of managers, different professionals, and mothers in a multi-unit setting generate a complex implementation process that reveals key factors to be taken into account in future CPG implementations. Managers, who facilitate initial steps of the process in relation to the distribution of organizational, structural, physical and human resources, need to participate more in implementation, evaluation and sustainability phases, generating more productive and explicit exchanges between managers and front-line professionals. Clinical opinion leaders (mainly midwives and nurses) take responsibility from the beginning of the change process and lead the adoption of new practices, being the driving force for colleagues who are initially less involved. The implementation process penetrates professionals differently according to the nature of their implementation activities and their intrinsic motivation. It is important for professionals with lesser participation to have access to an evidence-based protocol for the incorporation of interventions. It can be demotivating for professionals to find that the success of interventions does not always depend on their performance. Active measures are warranted to attract professionals who are less involved in the change process, including the creation of feedback systems to show the global changes achieved and to encourage intra- and interdisciplinary collaboration. Lessons learned from the implementation of a breastfeeding CPG can be applied whenever there is a need to adapt clinical practice to new knowledge, reducing the cost of changes and improving the likelihood of their success.

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Table 1. Characteristics of the participants and duration of the interviews

Participants	Gender	Professional profile/mother	Department	Role	Age	Years experience	Duration interviews (minutes)
1	W	Nurse	Maternity	Clinician	62	28	60.08
2	W	Nurse	Maternity	Champion	39	15	55.14
3	W	Healthcare assistants	Delivery room	Clinician	61	36	55.34
4	M	Midwife (unit supervisor)	Maternity	Champion	28	4	36.25
5	W	Midwife	Delivery room	Clinician	38	15	39.32
6	W	Healthcare assistants	Maternity	Champion	48	23	33.48
7	W	Nurse	Pediatric	Clinician	42	18	37.21
8	W	Healthcare assistants	Pediatric	Clinician	60	42	25.06
9	W	Midwife	Delivery room	Champion	47	27	43.23
10	W	Nurse (unit supervisor)	Pediatric	Champion	45	20	23.47
11	W	Gynecologist	Delivery room	Champion	40	10	36
12	W	Nurse	Maternity	Clinician	50	26	47.12
13	W	Pediatrician	Pediatric	Clinician	37	8	33.18
14	W	Midwife	Delivery room	Clinician	56	32	41.04
15	W	Midwife (unit supervisor)	Delivery room	Champion	42	18	32.14
16	M	Nurse	Pediatric	Clinician	44	20	31.20
17	W	Midwife	Delivery room	Leader	40	17	48.09
18	W	Nurse	Care Quality Department	Manager	51	31	71.76
19	W	Nurse	Nursing Administration	Manager	60	40	48.36
20	W	Physician	General Hospital Administration	Manager	60	35	31.62
21	W	Mother (2)	NA	Postpartum woman	36	N/A	39.34
22	W	Mother (1)	NA	Postpartum woman	27	N/A	27.25
23	W	Mother (1)	NA	Postpartum woman	25	N/A	31.42
24	W	Mother (2)	NA	Postpartum woman	29	N/A	34.37
25	W	Mother (1)	NA	Postpartum woman	23	N/A	20.59
26	W	Mother (1)	NA	Postpartum woman	28	N/A	24.52

27	W	Mother (2)	NA	Postpartum woman	33	N/A	29.58

Note. W refers to woman. M is man. Mother (1) referred to mothers with births during the period of implantation; Mother (2) referred to mothers with births before the implantation period and during implantation or sustainability. N /A is Not applicable

Table 2. Verbatims of the categories " Problem as an Opportunity" and " Adequacy of setting and adaptation of recommendations "

Category and/or subcategories and/or themes	Verbatims
Problem as an opportunity	
Problem Identification by the managers	*"It was seen that to be Baby-friendly hospital Initiative (BFHI), we had to work in the field of breastfeeding promotion, and from nursing primarily" E.20(manager)* *"We had done a self-evaluation of the BFHI indicators, [...], we did not comply with anything at all. " E.18 (manager)* *"There was a big problem with artificial feeding, with commercial industry promoting formula feeding" E.19 (manager)*
Importance of breastfeeding for clinicians	*"I see it very important, we are in the maternity ward and the most important in maternity is breastfeeding"E.12 (clinician).* *" This guide seems basic to me, the ABC of our work"E.17(clinician)* *" Every year, for a long time , the hospital is going to be Baby-friendly Hospital [...] yes, they came to examine us and on that occasion they suspended us" E. 1(clinician)* *"I know, if You want to be a Baby-friendly hospital, you have to pass a series of steps" E. 6(clinician)*
Adequacy of setting and adaptation of recommendations	
Identification of physical structures	*" We were going to be immersed in some hospital jobs, with structural changes , this helps to redirect failures, defects"E.19(manager)* *"Constructions were done, and yes, some recommendations from the guide have helped to make decisions to carry them out". E18 (manager)*
Guideline implementation committee	*"The most of midwives have been excited about the issue because they have considered that it was an important Project" E.19(manager)* *"The midwives were the professional more interested on being part of the implementation project committee" E18 (manager)*
Feasibility in the implantation	*" It was at the time [...] to describe in detail the needs [...]. Firstly, the support of the manager, and then, that it was not an important cost either. It was something that could be carried, that could be addressed" E.19(manager) "[...] we did the easiest, we thought about people who could contribute" E.18(manager)*
External resources, support from other institutions	*"Yes, at that time and currently we continue to have the support of the Faculty of Social and Health Sciences of the University [...] University also gave us the knowledge of the best practice guideline" E.18(manager)* *"One thing we could not lose was the unconditional support [...]. both the University and the Carlos III Institute to be able to set objectives and to see improvement points, quantify..." E.19(manager)*
Selection of feasible recommendations	*"yes, only if we can do it, then we choose the recommendation." E.11 (clinician).* *"I believe that the recommendations supported by the institution were chosen and could be carried out at that time. " E.19(manager)* *"These are recommendations that if you based on your competences and knowledge, you can carry out" E.17(clinician)*

Managers, easy and directed process	*"The selection of indicators has not been difficult because the guide within the project establishes a dictionary with indicators." 18(manager)* *"The implementation instrument tells you" (E18Manager)*

Table 3. Verbatims of the category " Extent of implementation "

Category and/or subcategories and/or themes	Verbatims
Extent of implementation	
3 types of professionals according to implementation:	
Leaders and convinced after implementation	*"this is because the hospital wants to hang up medals and that's it. That's all I thought about. Then I have seen that it's very well. At least, as far as I know, I like breastfeeding and pain best practice guidelines"E.12(clinician)* *“But in the end, you've convinced yourself and seen that the best thing is this and it has to be done...” E.3(clinician)* *“Yes. Little by little, I was one of the reluctant ones” E.16(clinician)* *“I always knew that working the BF was good. I tried to help my colleagues follow the recommendations. E2 (clinician)*
The ones who go along with the group	*"But now what is being done is very important [...] I think we are changing. Look, I've been through everything. "E.14 (clinician)* *"But in the end you have convinced yourself and you have seen that the best thing is this and you have to do it..."E.3(clinician)* *"Yes. little by little, for example, I was one of the reluctant"E.16(clinician)* *“Yes, of course, because when you don't do something and everyone else does, in the end you have to do it, because if you don't look weird” E.15 (clinician)*
The inflexible ones	*"If you are given a guide and if you are not interested, no matter how much guide you are given"E.8(clinician)* *“Well... you know. We all know someone who doesn't care what the service says, the hospital or whoever, is going to do whatever he/she wants, which is often nothing”. E.12 (clinician)* *“There are professionals, some of them, who don't care about anything and won't do anything about BF or pain or anything”. E.6 (clinician)*
3 types according to professional occupation implication:	
High, midwives	*"Here in the maternity ward, since midwife figure is there, nurses are Little linked with because that is the figure of the midwife makes that the infirmary is tied little"E.5(clinician)* *"I noticed that [...] the midwife had a different perception of breastfeeding from the rest of the staff. They were more for encouraging breastfeeding. More than maternity Ward staff."E.22(user mother)* *"If it were not become for the midwives in the hospital, then I would have lost breastfeeding"E.21(user mother)*
Moderate, registered nurses/healthcare assistants	*"The more important, the midwives and after that, nurses and auxiliary nurses staff"E.12(clinician)* *“Nurses and healthcare assistants would put them on the second step. They get involved, but less than the midwives”. E. 18 (manager)*

Low, physicians	*"Yes, pediatricians or physicians don't want to get into this"E.14 (clinician)* *"These [doctors] go it alone, go free"E.9 (clinician)*
Perception of the guideline	
Leaders and convinced:	
Change of course	*"I think so, because you have a referent which is the guide, and you remember the guide and I have to follow the guide"E.12 (clinician)* *"The guide is as if it has pushed me to change some things in my clinical practice". E.1 (clinician)*
Orientation of Practicing	*"But I am in favor of a guide with a few steps to follow. "E.14(clinician)* *"With the guide it is easy to go to the critical and fundamental aspects that you have to follow in your work regarding BF".* *E.2 (clinician)*
Useful in different units	*"The implementation of the guide is very important for paediatrics." E10.(clinician)* *"Here in paediatrics it is fundamental, before we did not pay much attention to it, now we know what to do". E.7 (clinician)*
Impulse for BFHI accreditation	*"well, my involvement is quite important within the implementation, because they are trying to take the best practices that tell us the guidelines, [...] that is what we want to improve, because we try to obtain the BFHI accreditation." E.15(clinician)* *"To be a BFHI-accredited centre is a very ambitious goal. Now I believe we can get closer to achieving it". E.14 (clinician)* *"If the recommendations offered by the guide were followed, we could also meet the requirements of the BFHI". E. 18 (manager)*
Clinics not directly associated with the implantation:	
The guide has not reached all professionals	*"I believe that 60% or 100% of professional don't know the guide. I believe that from now on when we begin the group meetings, the protocol which has just come out, from now on we will see the effect "E.11(clinician)".* *"Not all professionals know the guide. Or at least they don't know it well enough". E6 (clinician)*
Guide as breastfeeding protocol	*"Some protocols have been passed to the maternity ward"E.2(clinician)* *"But above all the protocol, which has been put by the management on the computer" E. 16(clinician)*
Easy access to the guide	*"On the Intranet, you can already access [the protocol] from any computer. That is fantastic"E.4(clinician)* *"you also have it on the website, you can consult it and it is available to everyone"E.11(clinician)* *"It was posted the other day on the intranet, so everyone could read it, easier impossible"E.15(clinician)*
Interventions	
Recognition of interventions close to your activity	*"with the strategy posters were put up in all areas, in delivery rooms, in the maternity ward [...], also pamphlets at discharge [...]" E.5(clinician)* *"yes, there was a midwife before and now we have three. "E.4(clinician)* *"It started with the Breastfeeding Committee Where you can talk a lot about the guide. E.6 (clinician)* *"the hospital is doing things: lactation room, [...] a parent's room in pediatric ward"E.10 (clinician)* *"The forms where you carry out the breastfeeding E.12 (clinician)*

Continuous interventions	*"The information is as very continuous. [...] Well, I think it's a lot of harping on. "E7. (clinician)* *"Well, I think there's a lot going on. It's quite present with the posters, training, the committees... I think it's getting quite insistent in different ways". E.5 (clinician)*
Training as the main strategy	*"I think the training has been important. Receiving training on a constant, periodic, accredited training"E.18(manager)* *" Maybe it works so much because she did it [training] in working hours, so you didn't waste your free time. And apart from that, they were very reduced courses"E.6(clinician) "Training is the key" E.9(clinician)* *" The truth is that the person who gives lactation courses, I have not seen a more enthusiastic person in my life"E.7(clinician)*
Establishment of own and imaginative strategies	*"Then, the supervisors and leaders started their own strategies. "E.17(clinician).* *"We try to do more imaginative things, involve people more and we always try to have ideas"E4(clinician)*
Perceived change	
Positive attitude in professionals	*"... yes, the guide favors us, the guide brings about a certain change in attitude. "E.5(clinician)* *"now you can see it in professionals and their attitudes [...] regarding breastfeeding"E.5(clinician)* *"In getting there, and motivating the team for what the team does..... "E.6(clinician)*
The youngest, motivated to change	*"...and people are now very conscious, they are trained for that, [...] the older people, we are a little more reluctant "E.3(clinician)* *"The recommendations [...], it has cost more with the older people, in changed with younger people. Young people has more assumed that things when they come from evidence are good, you have to make them "E.18 (manager).*
Group pressure, facilitator of recommendations	*"So, if these people are getting involved, I have to get involved too"E.12(clinician)* *"Yes, of course, because when you do something and everyone does it, then in the end you have to do it because if you don't it, it seems to be weird"E.15(clinician)* *"if everyone is doing it, I'm not going to stay behind"E.3(clinician)*
Application of uniform care criteria	*"Yes, before we had no idea what to do, or one said one thing and another said another. Now, at least, it is true that in many things we agree and we are all doing the same. You understand that the criteria are more unified, although there is someone who says he can give it [a bottle], but well... But I think we can, E. 7 (clinician)* *"I see people more involved. There were certain people who started the technique and at the change of shift they gave her a bottle and now no, everyone follow the recommendations. E. 10 (clinician)* *"Do almost all the same thing... women feel more confident seeing that we all say the same thing and act the same way. I've seen that, that woman feels more secure when we all tell her the same things than when we each tell her one thing. They feel more confident". E. 12 (clinician)*
In the physical structures	*"the hospital is doing things: lactation room, [...]a parent's room in pediatric ward "E.10(clinician)* *"the most striking thing is with the change of the work"E.13(clinician)* *"Also, since the new maternity ward is there, that also does a lot"E.7(clinician)* *"Work was done, especially in the pediatric area"E.18 (manager)*

Clinicians perceive institutional and managerial support	*"I think they are involved, especially the nursing director"E.10(clinician)* *"I find a lot of support here"E.15(clinician)* *"The hospital has been increasingly involved for a long time"E.1(clinician)*
Managers observe organizational changes	*"yes, you observe much more changes, especially in the speeches, in the questionings that people ask when doing things"E.18(manager)* *"[...] a great improvement in the staff, in the relationship and communication of professionals, many circuits that were obsolete, with old routines, have been made changes of practice". E19(manager)*
Obstacles to action	
Excessive importance given to this issue	*"As always, the first thing is breastfeeding. there have been times I say, oh, again. Another breastfeeding course" "E.1(clinician)* *"Many times we say, oh.....more breastfeeding courses is not necessary, we already know everything[...] everyday with breastfeeding! "E.12(clinician)*
Workloads and lack of time	*"There's also a part of human resources, personal lack "E.9(clinician)* *"...When you put on,....it takes time..."E.14(clinician)* *"personal lack. At all points, the truth is that we don't have time "E.13(clinician).*
Lack of professional involvement	*"Yes, pediatricians or doctors don't want to get into this," E.14 (clinician).* *"For the Anesthesia service that it is as if it were not with them about breastfeeding clinician practice guideline. This is a handicap we have there, that's going to be a barrier"E.5(clinician)* *"of course, and there is a drawback. when the baby has to go to pediatric ward after being 48 hours with exclusive breastfeeding, and the baby goes there, then, who is the person looking after baby breastfeeding."E.1(clinician)".*
Resistance to change	*"Let you change your job, that they tell you overnight that you are not worth what you've done and that now the best thing is that. "E.3 (clinician)* *"Yes, they know how to make recommendations, but they think it's not their job"E.15(clinician)* *"They don´t assume their responsibility as part of the care with women and the children. And it does not fall within their responsibility or they do not consider it to be an important part of their work"E.17(clinician)*
Breastfeeding not understood as a clinical activity	*"You have your patient admissions, your things to do, or operating rooms to prepare, all those things…, then, maybe if you are interested, of course, you have an interest in breastfeeding, but firstly, you have to do your job. "E.14(clinician)* *“They do not assume their responsibility as part of the care of the woman and child. And they do not consider it an important part of their work” E.17 (clinician)* *“You have your admissions, your things to do, or operating rooms to prepare, all those things, so maybe if you are interested, of course you are interested in breastfeeding but your job has to be done”. E. 14 (clinician)*
Information to mothers but lack of action	*"I try to put myself in other the person place who comes to ask for information, and comes and says, my child does not eat with exclusive breastfeeding and then asks you for a feeding bottle, then from the counter and I have also done it, sometime we have done it all. And then from the counter you say, no, you have to breastfeed, but you do not take and go to the room to help them"*

	E.6(clinician) *"but then in reality it is not done, it is supported a lot but then in practice it is not done"E.10(clinician)*
Lack of awareness by mothers. You can't force them	*"It is difficult, because what I have already told you, the beliefs that mothers have, is difficult to apply for this reason"E.2 (clinician)* *"because of breastfeeding, firstly, the mother has to want it"E.3 (clinician)* *"Sometimes we take that for granted, you suppose the mother is going to breastfeed and we jump with her and sometimes mother doesn`t want it. E.5(clinician)* *"The first thing to do is telling mothers if they want to breastfeed. Do you want to breastfeeding? , we help you. You don't want to breastfeed, that's already there. Try to see what happens"E.9(clinician)* *"Then, you help them to support those who intend to breastfeed, the one who directly says no, I give them a feeding bottle. You make inquiries a little, without pressuring them, because already many have the decision taken"E.13(clinician)*

Table 4. Verbatims of the category "Impact of results"

Category and/or subcategories and/or themes	Verbatims
Impact of results	
Management of key indicators	
Managers:	
Difficulty in collecting/exploiting data	*"We have had a great barrier in data collection, and exploitation of computer data "E.19(manager)* *"Our computer system does not allow for fluid data extraction. We are having a hard time getting them"E.18(manager)*
Clinics:	
Interest in knowing data	*"I have them[data] because I know how to access breastfeeding statistics. Because, I remember the code and I look at it" E. 17 (clinician)* *"Health professionals should have access to it [outcome data], but I really don't know how it's done". E. 6 (clinician)*
Identified with the record in the informatic medical history	*"I believe that Selene [informatic program in hospital] for the only thing that is useful is to make statistics" E. 6(clinician)* *"The record will only be good for statistical purposes, but I don't care about that. As I don't like statistics or such things, I don't think I would spend a second to look at the data". E. 9 (clinician)*
They know the data of the main indicator but not who can give it	*"They tell you how breastfeeding goes every month, % of breastfeeding is at discharged " E. 10 (clinician)* *"I guess the supervisor, [...] or the area manager, I don't know"E.7 (clinician*
Motivated to know data and consult them autonomously	*"You say, this month we have not arrived, so you think about you have to arrive [...] is like a goal that you have [...] to increase breastfeeding %" E. 12 (clinician).* *"Because I think it's motivating, for example, one month we are lower and suddenly it increases, it motivates you" E.5(clinician)* *" Health professionals should have access to it [outcome data], but I really don't know how to do it. "E.6(clinician)* *"I think information should be accessible to everyone, if I have it, I can consult it"E.11(clinician)*
Impact of results on professionals and users	
Clinics:	
Positive self-perception outcomes	*"In my opinion, we have more information and we know more about the topic "E.2(clinician)* *" I see it much better now than before, much better, and when working much better"E.7(clinician)*
Helps you deal with complex situations	*"Yes, because now the advice you are being given is practical advice and good advice"E.16(clinician).* *"[...] I have a barrier if it is a woman and more if it is Arabic [...] but I already forget that and I naturally approach it [...] and all thanks to this guideline" E. 16 (clinician)*
Satisfied for acting from knowledge	*"It is no longer breastfeeding for the good of say yes, now you are knowing the benefits and knowledge" E. 2 (clinician).* *"That is to say that everything you say has a scientific basis" E. 16 (clinician)*

Breastfeeding is evaluated based on own´s experience	*"they are like a period, weeks that come women very predisposed to the breastfeeding, and another group begins to come and there it seems that you crash" E. 1 (clinician)* *" when a mother is with exclusive breastfeeding and she is happy, it's a reward you get, E. 2(clinician)* *"And then when they arrive [...] then the next day you've seen the woman get tired or order a feeding bottle, it's like that doesn't work" E. 6(clinician)*
Clinicians and managers:	
Positive perception with mothers 'care	*"…and also that, mother's satisfaction". 2(clinician)* *"Mothers are breastfeeding in maternity ward , they are very convinced that it is good, cheap and the best for their children" E. 16 (clinician)*
Increased trust and relationship with mothers	*"Especially having us there, I think now when they have a doubt always ask for help, and they know they have professional people to help them" E. 2(clinician)* *"you talk, you comment, I think it's much better now, [...] to be able to remove certain types of barrier and to be able to speak about it" E. 7(clinician)*
Potential for improvement	*Yes, I see that it has improved but that it's a long way off" E. 4 (clinician)* *"We are better, but this is not perfect either" E. 13 (clinician)*
Mothers perceive improvements in successive hospital admission	*"Yes, it's true that with the first one [child birth], I've seen the good evolution. In the hospital, with the first one, it was more chaotic. With the second birth, it was less and with the last has been everything more different, with the third birth, it has been everything much easier"E.25(mother)* *"With the first and second birth, I couldn´t start breastfeeding until I went to the room. When a lot of hours have been. And with the last one I had my baby on immediate skin to skin contact and I started early breastfeeding"E.21 (*mother*)*

Table 5. Verbatims of the category " Knowledge use normalization"

Category and/or subcategories and/or themes	Verbatims
Knowledge use normalization	
Short- and long-term optimistic expectations	*"I think sustainability comes from not letting your guard down. It goes through [...] training, assessment, motivation and empowering patients to keep saying what they need" E. 18(manager)* *"In one year it will improve more, I am optimistic in that aspect "E.15(clinician)* *"In five years, I hope that we will have the baby-friendly hospital accreditation" E.5 (clinician)*
Need to continue working	*" publish the guides, let them know what it really is." E. 10(clinician)* *"Yes, I see that it has improved but that it's a long way off" E. 4 (clinician)* *"We are better, but this is not perfect either" E. 13 (clinician)*
Perception of change in organizational culture:	
Normalization of interventions	*"Mentality changes are being noticed in pediatrics" E. 17 (clinician)* *"Now, it has to be seen as normal, that the first thing is to give information about milk and breastfeeding "E.19(manager)* *"Now it's like everything very normal, the baby weighs a kilo 200, is taken out, he is breastfed by his mother because it's normal"E.7(clinician)*
Greater involvement with breastfeeding	*"I'm seeing all those ideas are taking time but they're reaching all the staff, not only por people who's interested or who cares. 6(clinician)* *"People is more involved with breastfeeding since I started, in 2009" E.10 (clinician)*
Unification of criteria	*"We all follow the same way and we're all going in the same direction." E. 15(clinician)* *"In short, all professionals always say the same thing" E.16(clinician)*